

# ENSIGN

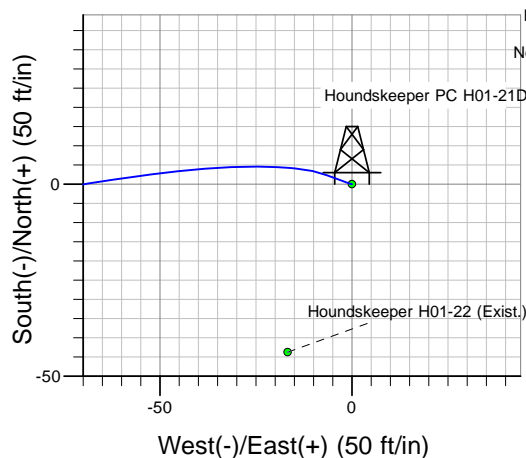
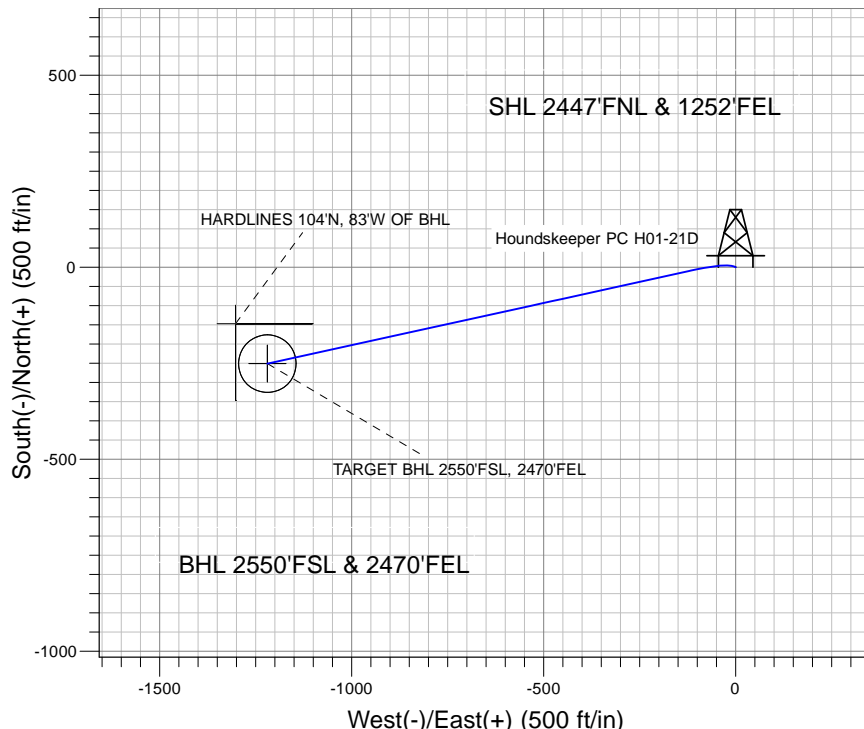
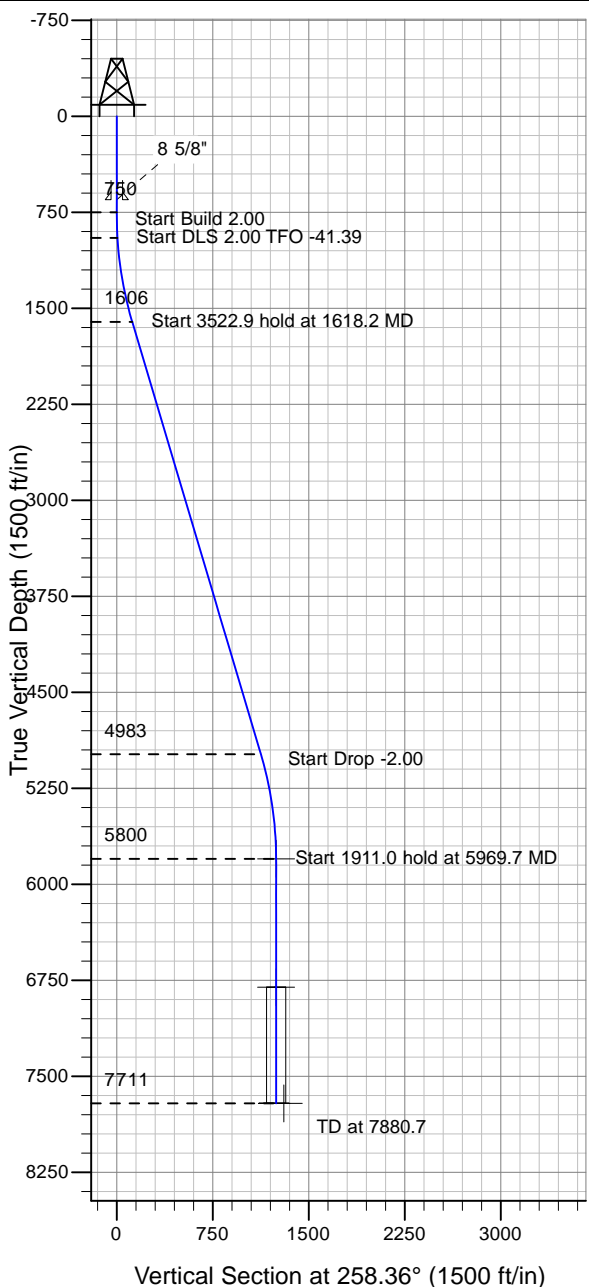
## Directional

### Well Name: Houndskeeper PC H01-21D

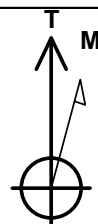
Surface Location: Houndskeeper PC H01-21D Pad Sec.1-T3N-R65W  
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
 Ground Elevation: 4870.0

+N/-S+E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1336909.43 3249249.49 40° 15' 17.172 N 104° 36' 25.056 W  
 Original Well Elev WELL @ 4883.0ft (Original Well Elev)

## NOBLE ENERGY INC WELD COUNTY CO



Houndskeeper PC H01-21D Pad Sec.1-T3N-R65W  
 Houndskeeper PC H01-21D  
 Noble Houndskeeper PC H01-21D Plan #2 (05-27-10)  
 13:35, May 27 2010



Azimuths to True North  
 Magnetic North: 8.91°

Magnetic Field  
 Strength: 53185.6nT  
 Dip Angle: 67.00°  
 Date: 5/18/2010  
 Model: IGRF2010

### WELLBORE TARGET DETAILS (LAT/LONG)

| Name                             | TVD    | +N/-S  | +E/-W   | Latitude         | Longitude         | Shape                 |
|----------------------------------|--------|--------|---------|------------------|-------------------|-----------------------|
| TARGET BHL 2550'FSL, 2470'FEL    | 5800.0 | -251.3 | -1219.8 | 40° 15' 14.688 N | 104° 36' 40.788 W | Point                 |
| TARGET CIRCLE 2550'FSL, 2470'FEL | 6803.0 | -251.3 | -1219.8 | 40° 15' 14.688 N | 104° 36' 40.788 W | Circle (Radius: 75.0) |
| HARDLINES 104°N, 83°W OF BHL     | 7711.0 | -147.3 | -1302.8 | 40° 15' 15.716 N | 104° 36' 41.859 W | Polygon               |

### 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   | 750.0  | 0.00  | 0.00   | 750.0  | 0.0    | 0.0     | 0.00 | 0.00   | 0.0    |                               |
| 3   | 950.0  | 4.00  | 290.00 | 949.8  | 2.4    | -6.6    | 2.00 | 290.00 | 5.9    |                               |
| 4   | 1618.2 | 16.57 | 257.61 | 1606.3 | -10.1  | -122.1  | 2.00 | -41.39 | 121.6  |                               |
| 5   | 5141.1 | 16.57 | 257.61 | 4982.8 | -225.8 | -1103.5 | 0.00 | 0.00   | 1126.4 |                               |
| 6   | 5969.7 | 0.00  | 0.00   | 5800.0 | -251.3 | -1219.8 | 2.00 | 180.00 | 1245.4 | TARGET BHL 2550'FSL, 2470'FEL |
| 7   | 7880.7 | 0.00  | 0.00   | 7711.0 | -251.3 | -1219.8 | 0.00 | 0.00   | 1245.4 |                               |



# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.1-T3N-R65W**

**Houndskeeper PC H01-21D Pad Sec.1-T3N-R65W**

**Houndskeeper PC H01-21D**

**Wellbore #1**

**Plan: Noble Houndskeeper PC H01-21D Plan #2 (05-27-10)**

## **Standard Planning Report**

**27 May, 2010**



|                  |   |                                     |                                      |
|------------------|---|-------------------------------------|--------------------------------------|
| <b>Database:</b> | EDM den0-adp01 Server Data                    | <b>Local Co-ordinate Reference:</b> | Well Houndskeeper PC H01-21D         |
| <b>Company:</b>  | NOBLE ENERGY INC WELD COUNTY CO               | <b>TVD Reference:</b>               | WELL @ 4883.0ft (Original Well Elev) |
| <b>Project:</b>  | SEC.1-T3N-R65W                                | <b>MD Reference:</b>                | WELL @ 4883.0ft (Original Well Elev) |
| <b>Site:</b>     | Houndskeeper PC H01-21D Pad<br>Sec.1-T3N-R65W | <b>North Reference:</b>             | True                                 |
| <b>Well:</b>     | Houndskeeper PC H01-21D                       | <b>Survey Calculation Method:</b>   | Minimum Curvature                    |
| <b>Wellbore:</b> | Wellbore #1                                   |                                     |                                      |
| <b>Design:</b>   | Noble Houndskeeper PC H01-21D Plan #2 (05     |                                     |                                      |

|                    |                           |                      |                             |
|--------------------|---------------------------|----------------------|-----------------------------|
| <b>Project</b>     | SEC.1-T3N-R65W            |                      |                             |
| <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 |

|                              |  |                          |                   |
|------------------------------|--|--------------------------|-------------------|
| <b>Site</b>                  | Houndskeeper PC H01-21D Pad Sec.1-T3N-R65W |                          |                   |
| <b>Site Position:</b>        |  | <b>Northing:</b>         | 1,336,909.44 ft   |
| <b>From:</b>                 | Lat/Long                                   | <b>Easting:</b>          | 3,249,249.49 ft   |
| <b>Position Uncertainty:</b> | 0.0 ft                                     | <b>Slot Radius:</b>      | "                 |
|                              |  | <b>Latitude:</b>         | 40° 15' 17.172 N  |
|                              |  | <b>Longitude:</b>        | 104° 36' 25.056 W |
|                              |  | <b>Grid Convergence:</b> | 0.58 °            |

|                             |                         |                            |                                  |
|-----------------------------|-------------------------|----------------------------|----------------------------------|
| <b>Well</b>                 | Houndskeeper PC H01-21D |                            |                                  |
| <b>Well Position</b>        | <b>+N/-S</b>            | 0.0 ft                     | <b>Northing:</b> 1,336,909.43 ft |
|                             | <b>+E/-W</b>            | 0.0 ft                     | <b>Easting:</b> 3,249,249.49 ft  |
| <b>Position Uncertainty</b> | 0.0 ft                  | <b>Wellhead Elevation:</b> | ft                               |
|                             |                         | <b>Latitude:</b>           | 40° 15' 17.172 N                 |
|                             |                         | <b>Longitude:</b>          | 104° 36' 25.056 W                |
|                             |                         | <b>Ground Level:</b>       | 4,870.0 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          | 5/18/2010          | 8.91                   | 67.00                | 53,186                     |

|                          |  |                   |                      |                      |
|--------------------------|--|-------------------|----------------------|----------------------|
| <b>Design</b>            | Noble Houndskeeper PC H01-21D Plan #2 (05-27-10) |                   |                      |                      |
| <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                  | 258.36               |

| <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    |                 |
| 750.0                | 0.00            | 0.00        | 750.0               | 0.0        | 0.0        | 0.00                  | 0.00                 | 0.00                | 0.00    |                 |
| 950.0                | 4.00            | 290.00      | 949.8               | 2.4        | -6.6       | 2.00                  | 2.00                 | 0.00                | 290.00  |                 |
| 1,618.2              | 16.57           | 257.61      | 1,606.3             | -10.1      | -122.1     | 2.00                  | 1.88                 | -4.85               | -41.39  |                 |
| 5,141.1              | 16.57           | 257.61      | 4,982.8             | -225.8     | -1,103.5   | 0.00                  | 0.00                 | 0.00                | 0.00    |                 |
| 5,969.7              | 0.00            | 0.00        | 5,800.0             | -251.3     | -1,219.8   | 2.00                  | -2.00                | 0.00                | 180.00  | TARGET BHL 255C |
| 7,880.7              | 0.00            | 0.00        | 7,711.0             | -251.3     | -1,219.8   | 0.00                  | 0.00                 | 0.00                | 0.00    |                 |

|                  |   |                                     |                                      |
|------------------|---|-------------------------------------|--------------------------------------|
| <b>Database:</b> | EDM den0-adp01 Server Data                    | <b>Local Co-ordinate Reference:</b> | Well Houndskeeper PC H01-21D         |
| <b>Company:</b>  | NOBLE ENERGY INC WELD COUNTY CO               | <b>TVD Reference:</b>               | WELL @ 4883.0ft (Original Well Elev) |
| <b>Project:</b>  | SEC.1-T3N-R65W                                | <b>MD Reference:</b>                | WELL @ 4883.0ft (Original Well Elev) |
| <b>Site:</b>     | Houndskeeper PC H01-21D Pad<br>Sec.1-T3N-R65W | <b>North Reference:</b>             | True                                 |
| <b>Well:</b>     | Houndskeeper PC H01-21D                       | <b>Survey Calculation Method:</b>   | Minimum Curvature                    |
| <b>Wellbore:</b> | Wellbore #1                                   |                                     |                                      |
| <b>Design:</b>   | Noble Houndskeeper PC H01-21D Plan #2 (05)    |                                     |                                      |

**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                |
| 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                |
| 650.0               | 0.00            | 0.00        | 650.0               | 0.0        | 0.0        | 0.0                   | 0.00                  | 0.00                 | 0.00                |
| <b>8 5/8"</b>       |                 |             |                     |            |            |                       |                       |                      |                     |
| 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                |
| 750.0               | 0.00            | 0.00        | 750.0               | 0.0        | 0.0        | 0.0                   | 0.00                  | 0.00                 | 0.00                |
| 760.0               | 0.20            | 290.00      | 760.0               | 0.0        | 0.0        | 0.0                   | 2.00                  | 2.00                 | 0.00                |
| 800.0               | 1.00            | 290.00      | 800.0               | 0.1        | -0.4       | 0.4                   | 2.00                  | 2.00                 | 0.00                |
| 840.0               | 1.80            | 290.00      | 840.0               | 0.5        | -1.3       | 1.2                   | 2.00                  | 2.00                 | 0.00                |
| 880.0               | 2.60            | 290.00      | 880.0               | 1.0        | -2.8       | 2.5                   | 2.00                  | 2.00                 | 0.00                |
| 920.0               | 3.40            | 290.00      | 919.9               | 1.7        | -4.7       | 4.3                   | 2.00                  | 2.00                 | 0.00                |
| 950.0               | 4.00            | 290.00      | 949.8               | 2.4        | -6.6       | 5.9                   | 2.00                  | 2.00                 | 0.00                |
| 960.0               | 4.15            | 288.17      | 959.8               | 2.6        | -7.2       | 6.6                   | 2.00                  | 1.52                 | -18.26              |
| 1,000.0             | 4.80            | 282.07      | 999.7               | 3.4        | -10.2      | 9.3                   | 2.00                  | 1.61                 | -15.26              |
| 1,040.0             | 5.48            | 277.44      | 1,039.5             | 4.0        | -13.8      | 12.7                  | 2.00                  | 1.71                 | -11.56              |
| 1,080.0             | 6.19            | 273.86      | 1,079.3             | 4.4        | -17.8      | 16.6                  | 2.00                  | 1.78                 | -8.96               |
| 1,120.0             | 6.93            | 271.02      | 1,119.1             | 4.6        | -22.4      | 21.0                  | 2.00                  | 1.83                 | -7.09               |
| 1,160.0             | 7.67            | 268.73      | 1,158.7             | 4.6        | -27.5      | 26.0                  | 2.00                  | 1.86                 | -5.73               |
| 1,200.0             | 8.43            | 266.84      | 1,198.3             | 4.4        | -33.1      | 31.5                  | 2.00                  | 1.89                 | -4.72               |
| 1,240.0             | 9.19            | 265.27      | 1,237.9             | 3.9        | -39.2      | 37.6                  | 2.00                  | 1.91                 | -3.94               |
| 1,280.0             | 9.96            | 263.93      | 1,277.3             | 3.3        | -45.8      | 44.2                  | 2.00                  | 1.92                 | -3.34               |
| 1,320.0             | 10.73           | 262.78      | 1,316.7             | 2.5        | -52.9      | 51.3                  | 2.00                  | 1.93                 | -2.87               |
| 1,360.0             | 11.51           | 261.79      | 1,355.9             | 1.4        | -60.6      | 59.0                  | 2.00                  | 1.94                 | -2.48               |
| 1,400.0             | 12.29           | 260.92      | 1,395.1             | 0.2        | -68.7      | 67.3                  | 2.00                  | 1.95                 | -2.17               |
| 1,440.0             | 13.07           | 260.16      | 1,434.1             | -1.2       | -77.4      | 76.0                  | 2.00                  | 1.96                 | -1.92               |
| 1,480.0             | 13.85           | 259.47      | 1,473.0             | -2.9       | -86.5      | 85.3                  | 2.00                  | 1.96                 | -1.70               |
| 1,520.0             | 14.64           | 258.86      | 1,511.7             | -4.7       | -96.2      | 95.2                  | 2.00                  | 1.96                 | -1.52               |
| 1,560.0             | 15.43           | 258.32      | 1,550.4             | -6.8       | -106.4     | 105.6                 | 2.00                  | 1.97                 | -1.37               |
| 1,600.0             | 16.21           | 257.82      | 1,588.9             | -9.1       | -117.0     | 116.5                 | 2.00                  | 1.97                 | -1.24               |
| 1,618.2             | 16.57           | 257.61      | 1,606.3             | -10.1      | -122.1     | 121.6                 | 2.00                  | 1.97                 | -1.16               |
| 1,640.0             | 16.57           | 257.61      | 1,627.2             | -11.5      | -128.1     | 127.8                 | 0.00                  | 0.00                 | 0.00                |
| 1,680.0             | 16.57           | 257.61      | 1,665.6             | -13.9      | -139.3     | 139.2                 | 0.00                  | 0.00                 | 0.00                |
| 1,720.0             | 16.57           | 257.61      | 1,703.9             | -16.4      | -150.4     | 150.6                 | 0.00                  | 0.00                 | 0.00                |
| 1,760.0             | 16.57           | 257.61      | 1,742.2             | -18.8      | -161.6     | 162.0                 | 0.00                  | 0.00                 | 0.00                |
| 1,800.0             | 16.57           | 257.61      | 1,780.6             | -21.3      | -172.7     | 173.5                 | 0.00                  | 0.00                 | 0.00                |
| 1,840.0             | 16.57           | 257.61      | 1,818.9             | -23.7      | -183.9     | 184.9                 | 0.00                  | 0.00                 | 0.00                |
| 1,880.0             | 16.57           | 257.61      | 1,857.2             | -26.2      | -195.0     | 196.3                 | 0.00                  | 0.00                 | 0.00                |

|                  |   |                                     |                                      |
|------------------|---|-------------------------------------|--------------------------------------|
| <b>Database:</b> | EDM den0-adp01 Server Data                    | <b>Local Co-ordinate Reference:</b> | Well Houndskeeper PC H01-21D         |
| <b>Company:</b>  | NOBLE ENERGY INC WELD COUNTY CO               | <b>TVD Reference:</b>               | WELL @ 4883.0ft (Original Well Elev) |
| <b>Project:</b>  | SEC.1-T3N-R65W                                | <b>MD Reference:</b>                | WELL @ 4883.0ft (Original Well Elev) |
| <b>Site:</b>     | Houndskeeper PC H01-21D Pad<br>Sec.1-T3N-R65W | <b>North Reference:</b>             | True                                 |
| <b>Well:</b>     | Houndskeeper PC H01-21D                       | <b>Survey Calculation Method:</b>   | Minimum Curvature                    |
| <b>Wellbore:</b> | Wellbore #1                                   |                                     |                                      |
| <b>Design:</b>   | Noble Houndskeeper PC H01-21D Plan #2 (05     |                                     |                                      |

| 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) |  |
| 1,920.0             | 16.57           | 257.61      | 1,895.6             | -28.6      | -206.1     | 207.7                 | 0.00                  | 0.00                 | 0.00                |  |
| 1,960.0             | 16.57           | 257.61      | 1,933.9             | -31.1      | -217.3     | 219.1                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,000.0             | 16.57           | 257.61      | 1,972.3             | -33.5      | -228.4     | 230.5                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,040.0             | 16.57           | 257.61      | 2,010.6             | -36.0      | -239.6     | 241.9                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,080.0             | 16.57           | 257.61      | 2,048.9             | -38.4      | -250.7     | 253.3                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,120.0             | 16.57           | 257.61      | 2,087.3             | -40.9      | -261.9     | 264.7                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,160.0             | 16.57           | 257.61      | 2,125.6             | -43.3      | -273.0     | 276.1                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,200.0             | 16.57           | 257.61      | 2,164.0             | -45.8      | -284.1     | 287.5                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,240.0             | 16.57           | 257.61      | 2,202.3             | -48.2      | -295.3     | 298.9                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,280.0             | 16.57           | 257.61      | 2,240.6             | -50.7      | -306.4     | 310.4                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,320.0             | 16.57           | 257.61      | 2,279.0             | -53.1      | -317.6     | 321.8                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,360.0             | 16.57           | 257.61      | 2,317.3             | -55.6      | -328.7     | 333.2                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,400.0             | 16.57           | 257.61      | 2,355.6             | -58.0      | -339.9     | 344.6                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,440.0             | 16.57           | 257.61      | 2,394.0             | -60.5      | -351.0     | 356.0                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,480.0             | 16.57           | 257.61      | 2,432.3             | -62.9      | -362.2     | 367.4                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,520.0             | 16.57           | 257.61      | 2,470.7             | -65.4      | -373.3     | 378.8                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,560.0             | 16.57           | 257.61      | 2,509.0             | -67.8      | -384.4     | 390.2                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,600.0             | 16.57           | 257.61      | 2,547.3             | -70.2      | -395.6     | 401.6                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,640.0             | 16.57           | 257.61      | 2,585.7             | -72.7      | -406.7     | 413.0                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,680.0             | 16.57           | 257.61      | 2,624.0             | -75.1      | -417.9     | 424.4                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,720.0             | 16.57           | 257.61      | 2,662.3             | -77.6      | -429.0     | 435.9                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,760.0             | 16.57           | 257.61      | 2,700.7             | -80.0      | -440.2     | 447.3                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,800.0             | 16.57           | 257.61      | 2,739.0             | -82.5      | -451.3     | 458.7                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,840.0             | 16.57           | 257.61      | 2,777.4             | -84.9      | -462.5     | 470.1                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,880.0             | 16.57           | 257.61      | 2,815.7             | -87.4      | -473.6     | 481.5                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,920.0             | 16.57           | 257.61      | 2,854.0             | -89.8      | -484.7     | 492.9                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,960.0             | 16.57           | 257.61      | 2,892.4             | -92.3      | -495.9     | 504.3                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,000.0             | 16.57           | 257.61      | 2,930.7             | -94.7      | -507.0     | 515.7                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,040.0             | 16.57           | 257.61      | 2,969.1             | -97.2      | -518.2     | 527.1                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,080.0             | 16.57           | 257.61      | 3,007.4             | -99.6      | -529.3     | 538.5                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,120.0             | 16.57           | 257.61      | 3,045.7             | -102.1     | -540.5     | 549.9                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,160.0             | 16.57           | 257.61      | 3,084.1             | -104.5     | -551.6     | 561.3                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,200.0             | 16.57           | 257.61      | 3,122.4             | -107.0     | -562.7     | 572.8                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,240.0             | 16.57           | 257.61      | 3,160.7             | -109.4     | -573.9     | 584.2                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,280.0             | 16.57           | 257.61      | 3,199.1             | -111.9     | -585.0     | 595.6                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,320.0             | 16.57           | 257.61      | 3,237.4             | -114.3     | -596.2     | 607.0                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,360.0             | 16.57           | 257.61      | 3,275.8             | -116.8     | -607.3     | 618.4                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,400.0             | 16.57           | 257.61      | 3,314.1             | -119.2     | -618.5     | 629.8                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,440.0             | 16.57           | 257.61      | 3,352.4             | -121.7     | -629.6     | 641.2                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,480.0             | 16.57           | 257.61      | 3,390.8             | -124.1     | -640.8     | 652.6                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,520.0             | 16.57           | 257.61      | 3,429.1             | -126.6     | -651.9     | 664.0                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,560.0             | 16.57           | 257.61      | 3,467.5             | -129.0     | -663.0     | 675.4                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,600.0             | 16.57           | 257.61      | 3,505.8             | -131.5     | -674.2     | 686.8                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,640.0             | 16.57           | 257.61      | 3,544.1             | -133.9     | -685.3     | 698.3                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,680.0             | 16.57           | 257.61      | 3,582.5             | -136.4     | -696.5     | 709.7                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,720.0             | 16.57           | 257.61      | 3,620.8             | -138.8     | -707.6     | 721.1                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,760.0             | 16.57           | 257.61      | 3,659.1             | -141.3     | -718.8     | 732.5                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,800.0             | 16.57           | 257.61      | 3,697.5             | -143.7     | -729.9     | 743.9                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,840.0             | 16.57           | 257.61      | 3,735.8             | -146.1     | -741.0     | 755.3                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,880.0             | 16.57           | 257.61      | 3,774.2             | -148.6     | -752.2     | 766.7                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,920.0             | 16.57           | 257.61      | 3,812.5             | -151.0     | -763.3     | 778.1                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,960.0             | 16.57           | 257.61      | 3,850.8             | -153.5     | -774.5     | 789.5                 | 0.00                  | 0.00                 | 0.00                |  |
| 4,000.0             | 16.57           | 257.61      | 3,889.2             | -155.9     | -785.6     | 800.9                 | 0.00                  | 0.00                 | 0.00                |  |

|                  |   |                                     |                                      |
|------------------|---|-------------------------------------|--------------------------------------|
| <b>Database:</b> | EDM den0-adp01 Server Data                    | <b>Local Co-ordinate Reference:</b> | Well Houndskeeper PC H01-21D         |
| <b>Company:</b>  | NOBLE ENERGY INC WELD COUNTY CO               | <b>TVD Reference:</b>               | WELL @ 4883.0ft (Original Well Elev) |
| <b>Project:</b>  | SEC.1-T3N-R65W                                | <b>MD Reference:</b>                | WELL @ 4883.0ft (Original Well Elev) |
| <b>Site:</b>     | Houndskeeper PC H01-21D Pad<br>Sec.1-T3N-R65W | <b>North Reference:</b>             | True                                 |
| <b>Well:</b>     | Houndskeeper PC H01-21D                       | <b>Survey Calculation Method:</b>   | Minimum Curvature                    |
| <b>Wellbore:</b> | Wellbore #1                                   |                                     |                                      |
| <b>Design:</b>   | Noble Houndskeeper PC H01-21D Plan #2 (05)    |                                     |                                      |

| 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) |
| 4,040.0                              | 16.57           | 257.61      | 3,927.5             | -158.4     | -796.8     | 812.3                 | 0.00                  | 0.00                 | 0.00                |
| 4,080.0                              | 16.57           | 257.61      | 3,965.8             | -160.8     | -807.9     | 823.7                 | 0.00                  | 0.00                 | 0.00                |
| 4,120.0                              | 16.57           | 257.61      | 4,004.2             | -163.3     | -819.1     | 835.2                 | 0.00                  | 0.00                 | 0.00                |
| 4,160.0                              | 16.57           | 257.61      | 4,042.5             | -165.7     | -830.2     | 846.6                 | 0.00                  | 0.00                 | 0.00                |
| 4,200.0                              | 16.57           | 257.61      | 4,080.9             | -168.2     | -841.3     | 858.0                 | 0.00                  | 0.00                 | 0.00                |
| 4,240.0                              | 16.57           | 257.61      | 4,119.2             | -170.6     | -852.5     | 869.4                 | 0.00                  | 0.00                 | 0.00                |
| 4,280.0                              | 16.57           | 257.61      | 4,157.5             | -173.1     | -863.6     | 880.8                 | 0.00                  | 0.00                 | 0.00                |
| 4,320.0                              | 16.57           | 257.61      | 4,195.9             | -175.5     | -874.8     | 892.2                 | 0.00                  | 0.00                 | 0.00                |
| 4,360.0                              | 16.57           | 257.61      | 4,234.2             | -178.0     | -885.9     | 903.6                 | 0.00                  | 0.00                 | 0.00                |
| 4,400.0                              | 16.57           | 257.61      | 4,272.6             | -180.4     | -897.1     | 915.0                 | 0.00                  | 0.00                 | 0.00                |
| 4,440.0                              | 16.57           | 257.61      | 4,310.9             | -182.9     | -908.2     | 926.4                 | 0.00                  | 0.00                 | 0.00                |
| 4,480.0                              | 16.57           | 257.61      | 4,349.2             | -185.3     | -919.3     | 937.8                 | 0.00                  | 0.00                 | 0.00                |
| 4,520.0                              | 16.57           | 257.61      | 4,387.6             | -187.8     | -930.5     | 949.2                 | 0.00                  | 0.00                 | 0.00                |
| 4,560.0                              | 16.57           | 257.61      | 4,425.9             | -190.2     | -941.6     | 960.7                 | 0.00                  | 0.00                 | 0.00                |
| 4,600.0                              | 16.57           | 257.61      | 4,464.2             | -192.7     | -952.8     | 972.1                 | 0.00                  | 0.00                 | 0.00                |
| 4,640.0                              | 16.57           | 257.61      | 4,502.6             | -195.1     | -963.9     | 983.5                 | 0.00                  | 0.00                 | 0.00                |
| 4,680.0                              | 16.57           | 257.61      | 4,540.9             | -197.6     | -975.1     | 994.9                 | 0.00                  | 0.00                 | 0.00                |
| 4,720.0                              | 16.57           | 257.61      | 4,579.3             | -200.0     | -986.2     | 1,006.3               | 0.00                  | 0.00                 | 0.00                |
| 4,760.0                              | 16.57           | 257.61      | 4,617.6             | -202.5     | -997.4     | 1,017.7               | 0.00                  | 0.00                 | 0.00                |
| 4,800.0                              | 16.57           | 257.61      | 4,655.9             | -204.9     | -1,008.5   | 1,029.1               | 0.00                  | 0.00                 | 0.00                |
| 4,840.0                              | 16.57           | 257.61      | 4,694.3             | -207.4     | -1,019.6   | 1,040.5               | 0.00                  | 0.00                 | 0.00                |
| 4,880.0                              | 16.57           | 257.61      | 4,732.6             | -209.8     | -1,030.8   | 1,051.9               | 0.00                  | 0.00                 | 0.00                |
| 4,920.0                              | 16.57           | 257.61      | 4,771.0             | -212.3     | -1,041.9   | 1,063.3               | 0.00                  | 0.00                 | 0.00                |
| 4,960.0                              | 16.57           | 257.61      | 4,809.3             | -214.7     | -1,053.1   | 1,074.7               | 0.00                  | 0.00                 | 0.00                |
| 5,000.0                              | 16.57           | 257.61      | 4,847.6             | -217.2     | -1,064.2   | 1,086.1               | 0.00                  | 0.00                 | 0.00                |
| 5,040.0                              | 16.57           | 257.61      | 4,886.0             | -219.6     | -1,075.4   | 1,097.6               | 0.00                  | 0.00                 | 0.00                |
| 5,080.0                              | 16.57           | 257.61      | 4,924.3             | -222.1     | -1,086.5   | 1,109.0               | 0.00                  | 0.00                 | 0.00                |
| 5,120.0                              | 16.57           | 257.61      | 4,962.6             | -224.5     | -1,097.7   | 1,120.4               | 0.00                  | 0.00                 | 0.00                |
| 5,141.1                              | 16.57           | 257.61      | 4,982.8             | -225.8     | -1,103.5   | 1,126.4               | 0.00                  | 0.00                 | 0.00                |
| 5,160.0                              | 16.19           | 257.61      | 5,001.0             | -226.9     | -1,108.7   | 1,131.7               | 2.00                  | -2.00                | 0.00                |
| 5,200.0                              | 15.39           | 257.61      | 5,039.5             | -229.3     | -1,119.4   | 1,142.6               | 2.00                  | -2.00                | 0.00                |
| 5,240.0                              | 14.59           | 257.61      | 5,078.1             | -231.5     | -1,129.5   | 1,153.0               | 2.00                  | -2.00                | 0.00                |
| 5,280.0                              | 13.79           | 257.61      | 5,116.9             | -233.6     | -1,139.1   | 1,162.8               | 2.00                  | -2.00                | 0.00                |
| 5,320.0                              | 12.99           | 257.61      | 5,155.8             | -235.6     | -1,148.1   | 1,172.0               | 2.00                  | -2.00                | 0.00                |
| 5,360.0                              | 12.19           | 257.61      | 5,194.9             | -237.5     | -1,156.6   | 1,180.8               | 2.00                  | -2.00                | 0.00                |
| 5,400.0                              | 11.39           | 257.61      | 5,234.0             | -239.2     | -1,164.6   | 1,188.9               | 2.00                  | -2.00                | 0.00                |
| 5,440.0                              | 10.59           | 257.61      | 5,273.3             | -240.9     | -1,172.1   | 1,196.6               | 2.00                  | -2.00                | 0.00                |
| 5,480.0                              | 9.79            | 257.61      | 5,312.6             | -242.4     | -1,179.0   | 1,203.6               | 2.00                  | -2.00                | 0.00                |
| 5,520.0                              | 8.99            | 257.61      | 5,352.1             | -243.8     | -1,185.4   | 1,210.2               | 2.00                  | -2.00                | 0.00                |
| 5,560.0                              | 8.19            | 257.61      | 5,391.7             | -245.1     | -1,191.2   | 1,216.1               | 2.00                  | -2.00                | 0.00                |
| 5,600.0                              | 7.39            | 257.61      | 5,431.3             | -246.2     | -1,196.5   | 1,221.6               | 2.00                  | -2.00                | 0.00                |
| 5,640.0                              | 6.59            | 257.61      | 5,471.0             | -247.3     | -1,201.3   | 1,226.4               | 2.00                  | -2.00                | 0.00                |
| 5,680.0                              | 5.79            | 257.61      | 5,510.8             | -248.2     | -1,205.5   | 1,230.8               | 2.00                  | -2.00                | 0.00                |
| 5,720.0                              | 4.99            | 257.61      | 5,550.6             | -249.0     | -1,209.1   | 1,234.5               | 2.00                  | -2.00                | 0.00                |
| 5,760.0                              | 4.19            | 257.61      | 5,590.4             | -249.7     | -1,212.3   | 1,237.7               | 2.00                  | -2.00                | 0.00                |
| 5,800.0                              | 3.39            | 257.61      | 5,630.4             | -250.3     | -1,214.9   | 1,240.4               | 2.00                  | -2.00                | 0.00                |
| 5,840.0                              | 2.59            | 257.61      | 5,670.3             | -250.7     | -1,216.9   | 1,242.5               | 2.00                  | -2.00                | 0.00                |
| 5,880.0                              | 1.79            | 257.61      | 5,710.3             | -251.0     | -1,218.4   | 1,244.0               | 2.00                  | -2.00                | 0.00                |
| 5,920.0                              | 0.99            | 257.61      | 5,750.3             | -251.2     | -1,219.3   | 1,245.0               | 2.00                  | -2.00                | 0.00                |
| 5,960.0                              | 0.19            | 257.61      | 5,790.3             | -251.3     | -1,219.7   | 1,245.4               | 2.00                  | -2.00                | 0.00                |
| 5,969.7                              | 0.00            | 0.00        | 5,800.0             | -251.3     | -1,219.8   | 1,245.4               | 2.00                  | -2.00                | 0.00                |
| <b>TARGET BHL 2550'FSL, 2470'FEL</b> |                 |             |                     |            |            |                       |                       |                      |                     |
| 6,000.0                              | 0.00            | 0.00        | 5,830.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |

|                  |   |                                     |                                      |
|------------------|---|-------------------------------------|--------------------------------------|
| <b>Database:</b> | EDM den0-adp01 Server Data                    | <b>Local Co-ordinate Reference:</b> | Well Houndskeeper PC H01-21D         |
| <b>Company:</b>  | NOBLE ENERGY INC WELD COUNTY CO               | <b>TVD Reference:</b>               | WELL @ 4883.0ft (Original Well Elev) |
| <b>Project:</b>  | SEC.1-T3N-R65W                                | <b>MD Reference:</b>                | WELL @ 4883.0ft (Original Well Elev) |
| <b>Site:</b>     | Houndskeeper PC H01-21D Pad<br>Sec.1-T3N-R65W | <b>North Reference:</b>             | True                                 |
| <b>Well:</b>     | Houndskeeper PC H01-21D                       | <b>Survey Calculation Method:</b>   | Minimum Curvature                    |
| <b>Wellbore:</b> | Wellbore #1                                   |                                     |                                      |
| <b>Design:</b>   | Noble Houndskeeper PC H01-21D Plan #2 (05     |                                     |                                      |

| 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) |
| 6,040.0   | 0.00            | 0.00        | 5,870.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,080.0   | 0.00            | 0.00        | 5,910.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,120.0   | 0.00            | 0.00        | 5,950.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,160.0   | 0.00            | 0.00        | 5,990.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,200.0   | 0.00            | 0.00        | 6,030.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,240.0   | 0.00            | 0.00        | 6,070.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,280.0   | 0.00            | 0.00        | 6,110.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,320.0   | 0.00            | 0.00        | 6,150.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,360.0   | 0.00            | 0.00        | 6,190.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,400.0   | 0.00            | 0.00        | 6,230.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,440.0   | 0.00            | 0.00        | 6,270.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,480.0   | 0.00            | 0.00        | 6,310.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,520.0   | 0.00            | 0.00        | 6,350.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,560.0   | 0.00            | 0.00        | 6,390.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,600.0   | 0.00            | 0.00        | 6,430.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,640.0   | 0.00            | 0.00        | 6,470.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,680.0   | 0.00            | 0.00        | 6,510.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,720.0   | 0.00            | 0.00        | 6,550.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,760.0   | 0.00            | 0.00        | 6,590.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,800.0   | 0.00            | 0.00        | 6,630.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,840.0   | 0.00            | 0.00        | 6,670.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,880.0   | 0.00            | 0.00        | 6,710.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,920.0   | 0.00            | 0.00        | 6,750.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,960.0   | 0.00            | 0.00        | 6,790.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 6,972.7   | 0.00            | 0.00        | 6,803.0             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| <b>NIORARA - TARGET CIRCLE 2550'FSL, 2470'FEL</b> |                 |             |                     |            |            |                       |                       |                      |                     |
| 7,000.0   | 0.00            | 0.00        | 6,830.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,040.0   | 0.00            | 0.00        | 6,870.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,080.0   | 0.00            | 0.00        | 6,910.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,120.0   | 0.00            | 0.00        | 6,950.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,160.0   | 0.00            | 0.00        | 6,990.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,200.0   | 0.00            | 0.00        | 7,030.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,240.0   | 0.00            | 0.00        | 7,070.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,280.0   | 0.00            | 0.00        | 7,110.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,312.7   | 0.00            | 0.00        | 7,143.0             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| <b>CODELL</b>                                     |                 |             |                     |            |            |                       |                       |                      |                     |
| 7,320.0   | 0.00            | 0.00        | 7,150.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,360.0   | 0.00            | 0.00        | 7,190.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,400.0   | 0.00            | 0.00        | 7,230.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,440.0   | 0.00            | 0.00        | 7,270.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,480.0   | 0.00            | 0.00        | 7,310.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,520.0   | 0.00            | 0.00        | 7,350.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,560.0   | 0.00            | 0.00        | 7,390.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,600.0   | 0.00            | 0.00        | 7,430.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,640.0   | 0.00            | 0.00        | 7,470.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,671.7   | 0.00            | 0.00        | 7,502.0             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| <b>D-SAND</b>                                     |                 |             |                     |            |            |                       |                       |                      |                     |
| 7,680.0   | 0.00            | 0.00        | 7,510.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,720.0   | 0.00            | 0.00        | 7,550.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,730.7   | 0.00            | 0.00        | 7,561.0             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| <b>J-SAND</b>                                     |                 |             |                     |            |            |                       |                       |                      |                     |
| 7,760.0   | 0.00            | 0.00        | 7,590.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |



|                  |   |                                     |                                      |
|------------------|---|-------------------------------------|--------------------------------------|
| <b>Database:</b> | EDM den0-adp01 Server Data                    | <b>Local Co-ordinate Reference:</b> | Well Houndskeeper PC H01-21D         |
| <b>Company:</b>  | NOBLE ENERGY INC WELD COUNTY CO               | <b>TVD Reference:</b>               | WELL @ 4883.0ft (Original Well Elev) |
| <b>Project:</b>  | SEC.1-T3N-R65W                                | <b>MD Reference:</b>                | WELL @ 4883.0ft (Original Well Elev) |
| <b>Site:</b>     | Houndskeeper PC H01-21D Pad<br>Sec.1-T3N-R65W | <b>North Reference:</b>             | True                                 |
| <b>Well:</b>     | Houndskeeper PC H01-21D                       | <b>Survey Calculation Method:</b>   | Minimum Curvature                    |
| <b>Wellbore:</b> | Wellbore #1                                   |                                     |                                      |
| <b>Design:</b>   | Noble Houndskeeper PC H01-21D Plan #2 (05     |                                     |                                      |

**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) |
|-------------------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 7,800.0                             | 0.00            | 0.00        | 7,630.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,840.0                             | 0.00            | 0.00        | 7,670.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,880.0                             | 0.00            | 0.00        | 7,710.3             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| 7,880.7                             | 0.00            | 0.00        | 7,711.0             | -251.3     | -1,219.8   | 1,245.4               | 0.00                  | 0.00                 | 0.00                |
| <b>HARDLINES 104°N, 83°W OF BHL</b> |                 |             |                     |            |            |                       |                       |                      |                     |

**Targets**

| Target Name<br>- hit/miss target<br>- Shape   | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude         | Longitude         |
|---|---------------|--------------|----------|------------|------------|---------------|--------------|------------------|-------------------|
| TARGET CIRCLE 25' - plan hits target center - Circle (radius 75.0)  | 0.00          | 0.00         | 6,803.0  | -251.3     | -1,219.8   | 1,336,645.87  | 3,248,032.34 | 40° 15' 14.688 N | 104° 36' 40.788 W |
| HARDLINES 104°N, 83°W - plan misses target center by 133.1ft at 7880.7ft MD (7711.0 TVD, -251.3 N, -1219.8 E) - Polygon | 0.00          | 0.00         | 7,711.0  | -147.3     | -1,302.8   | 1,336,749.03  | 3,247,948.30 | 40° 15' 15.716 N | 104° 36' 41.859 W |
| Point 1   |               |              | 7,711.0  | 0.0        | 0.0        | 1,336,749.03  | 3,247,948.30 |                  |                   |
| Point 2   |               |              | 7,711.0  | 0.0        | 200.0      | 1,336,751.04  | 3,248,148.28 |                  |                   |
| Point 3   |               |              | 7,711.0  | 0.0        | 0.0        | 1,336,749.03  | 3,247,948.30 |                  |                   |
| Point 4   |               |              | 7,711.0  | -200.0     | 0.0        | 1,336,549.04  | 3,247,950.31 |                  |                   |
| TARGET BHL 2550'F: - plan hits target center - Point  | 0.00          | 0.00         | 5,800.0  | -251.3     | -1,219.8   | 1,336,645.84  | 3,248,032.37 | 40° 15' 14.688 N | 104° 36' 40.788 W |

**Casing Points**

| Measured Depth (ft) | Vertical Depth (ft) | Name   | Casing Diameter (") | Hole Diameter (") |
|---------------------|---------------------|--------|---------------------|-------------------|
| 650.0               | 650.0               | 8 5/8" | 8-5/8               | 12-1/4            |

**Formations**

| Measured Depth (ft) | Vertical Depth (ft) | Name     | Lithology | Dip (°) | Dip Direction (°) |
|---------------------|---------------------|----------|-----------|---------|-------------------|
| 6,972.7             | 6,803.0             | NIOBRARA |           | 0.00    |                   |
| 7,312.7             | 7,143.0             | CODELL   |           | 0.00    |                   |
| 7,671.7             | 7,502.0             | D-SAND   |           | 0.00    |                   |
| 7,730.7             | 7,561.0             | J-SAND   |           | 0.00    |                   |