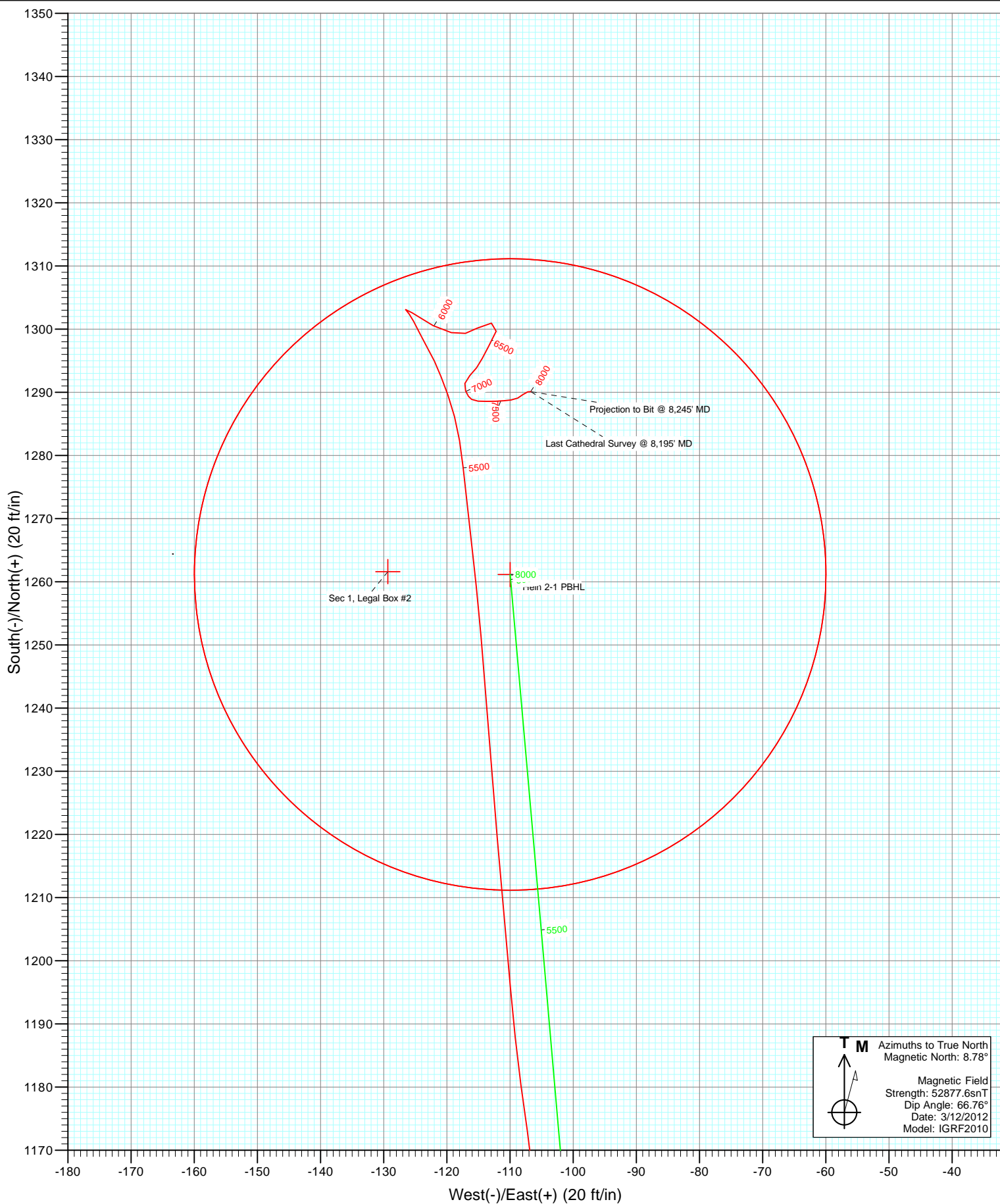


Azimuths to True North
Magnetic North: 8.78°

Magnetic Field
Strength: 52877.6snT
Dip Angle: 66.76°
Date: 3/12/2012
Model: IGRF2010

| DD Hein 2-1 12xxx; LR | | KB=15' @ 4908.0ft (Xtreme 11) | | North American Datum 1983 | | Well Hein 2-1, True North | |
|-----------------------------|---------------------|-------------------------------|--------|---------------------------|-----------|---------------------------|------|
| Type | Target | Azimuth | Origin | Type | N/S | E/W | From |
| Target | Hein 2-1 PBHL | 355.02 | Slot | | 0.0 | 0.0 | TVD |
| Name | Sec 1, Legal Box #2 | TVD | +N/-S | +E/-W | Latitude | Longitude | |
| | Hein 2-1 PBHL | 8066.0 | 1261.6 | -129.3 | 40.085612 | -104.837088 | |
| | | | 1261.2 | -110.0 | 40.085611 | -104.837019 | |



Cathedral Energy Services

Survey Report

| | | | |
|------------------|--------------------------------|-------------------------------------|-------------------------------|
| Company: | Anadarko Petroleum Corporation | Local Co-ordinate Reference: | Well Hein 2-1 |
| Project: | DJ Wattenberg | TVD Reference: | KB=15' @ 4908.0ft (Xtreme 11) |
| Site: | SWNE Sec1-T1N-R67W (Hein 2-1) | MD Reference: | KB=15' @ 4908.0ft (Xtreme 11) |
| Well: | Hein 2-1 | North Reference: | True |
| Wellbore: | DD | Survey Calculation Method: | Minimum Curvature |
| Design: | DD | Database: | USA EDM 5000 Multi Users DB |

| | | | |
|--------------------|---------------------------|----------------------|----------------|
| Project | DJ Wattenberg | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Colorado Northern Zone | | |

| Site | | SWNE Sec1-T1N-R67W (Hein 2-1) | | | |
|-----------------------|----------|-------------------------------|-----------------|-------------------|-------------|
| Site Position: | | Northing: | 1,273,436.50 ft | Latitude: | 40.082061 |
| From: | Lat/Long | Easting: | 3,185,627.90 ft | Longitude: | -104.836625 |
| Position Uncertainty: | 0.0 ft | Slot Radius: | 13.200 in | Grid Convergence: | 0.43 ° |

| | | | | | | |
|----------------------|----------|--------|---------------------|-----------------|---------------|-------------|
| Well | Hein 2-1 | | | | | |
| Well Position | +N/-S | 0.0 ft | Northing: | 1,273,468.54 ft | Latitude: | 40.082149 |
| | +E/-W | 0.0 ft | Easting: | 3,185,627.38 ft | Longitude: | -104.836626 |
| Position Uncertainty | | 0.0 ft | Wellhead Elevation: | ft | Ground Level: | 4,893.0 ft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | DD | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 3/12/2012 | 8.77 | 66.76 | 52,878 |

| | | | | | |
|--------------------------|-------------------------|---------------|--------------|----------------------|-----|
| Design | DD | | | | |
| Audit Notes: | | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: | 0.0 |
| Vertical Section: | Depth From (TVD) | +N/-S | +E/-W | Direction | |
| | (ft) | (ft) | (ft) | (°) | |
| | 0.0 | 0.0 | 0.0 | 355.02 | |

| | | | | | |
|-----------------------|----------------|--------------------------|------------------|--------------------|--|
| Survey Program | Date | 5/22/2012 | | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description | |
| 90.0 | 8,245.0 | Survey #1 (DD) | MWD | Geolink MWD | |

| | | | | | | | | | | |
|----------------------------|------------------------|--------------------|----------------------------|-------------------|-------------------|------------------------------|------------------------------|-----------------------------|------------------------------|--|
| Survey | | | | | | | | | | |
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Formations / Comments | |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | Sec 1, Legal Box #2 | |
| 90.0 | 1.10 | 3.10 | 90.0 | 0.9 | 0.0 | 0.9 | 1.22 | 1.22 | | |
| 178.0 | 2.30 | 1.10 | 178.0 | 3.5 | 0.1 | 3.4 | 1.37 | 1.36 | | |
| 266.0 | 4.00 | 0.30 | 265.8 | 8.3 | 0.2 | 8.3 | 1.93 | 1.93 | | |
| 353.0 | 5.60 | 358.40 | 352.5 | 15.6 | 0.1 | 15.5 | 1.85 | 1.84 | | |
| 430.0 | 6.90 | 356.20 | 429.1 | 24.0 | -0.3 | 23.9 | 1.72 | 1.69 | | |
| 521.0 | 8.90 | 354.90 | 519.2 | 36.4 | -1.3 | 36.4 | 2.21 | 2.20 | | |
| 612.0 | 10.70 | 353.20 | 608.9 | 51.8 | -3.0 | 51.9 | 2.00 | 1.98 | | |
| 702.0 | 12.70 | 353.60 | 697.0 | 70.0 | -5.0 | 70.1 | 2.22 | 2.22 | | |
| 793.0 | 13.30 | 353.50 | 785.6 | 90.3 | -7.3 | 90.6 | 0.66 | 0.66 | | |
| 903.0 | 13.80 | 354.30 | 892.6 | 115.9 | -10.1 | 116.4 | 0.49 | 0.45 | | |
| 1,030.0 | 13.70 | 353.20 | 1,015.9 | 145.9 | -13.4 | 146.5 | 0.22 | -0.08 | | |
| 1,121.0 | 17.40 | 359.20 | 1,103.6 | 170.2 | -14.8 | 170.9 | 4.43 | 4.07 | | |

Cathedral Energy Services

Survey Report

| | | | |
|------------------|--------------------------------|-------------------------------------|-------------------------------|
| Company: | Anadarko Petroleum Corporation | Local Co-ordinate Reference: | Well Hein 2-1 |
| Project: | DJ Wattenberg | TVD Reference: | KB=15' @ 4908.0ft (Xtreme 11) |
| Site: | SWNE Sec1-T1N-R67W (Hein 2-1) | MD Reference: | KB=15' @ 4908.0ft (Xtreme 11) |
| Well: | Hein 2-1 | North Reference: | True |
| Wellbore: | DD | Survey Calculation Method: | Minimum Curvature |
| Design: | DD | Database: | USA EDM 5000 Multi Users DB |

| Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Formations / Comments |
| 1,212.0 | 16.80 | 357.20 | 1,190.6 | 197.0 | -15.7 | 197.6 | 0.92 | -0.66 | |
| 1,303.0 | 16.00 | 356.80 | 1,277.9 | 222.6 | -17.0 | 223.3 | 0.89 | -0.88 | |
| 1,393.0 | 16.10 | 355.90 | 1,364.4 | 247.5 | -18.6 | 248.2 | 0.30 | 0.11 | |
| 1,484.0 | 16.00 | 354.70 | 1,451.8 | 272.5 | -20.7 | 273.3 | 0.38 | -0.11 | |
| 1,575.0 | 16.20 | 353.90 | 1,539.3 | 297.7 | -23.2 | 298.5 | 0.33 | 0.22 | |
| 1,665.0 | 15.70 | 353.80 | 1,625.8 | 322.2 | -25.8 | 323.3 | 0.56 | -0.56 | |
| 1,756.0 | 15.20 | 353.20 | 1,713.5 | 346.3 | -28.6 | 347.5 | 0.58 | -0.55 | |
| 1,847.0 | 14.50 | 352.60 | 1,801.5 | 369.5 | -31.4 | 370.8 | 0.79 | -0.77 | |
| 1,937.0 | 14.90 | 359.10 | 1,888.5 | 392.2 | -33.1 | 393.6 | 1.88 | 0.44 | |
| 2,028.0 | 15.70 | 357.80 | 1,976.3 | 416.2 | -33.7 | 417.6 | 0.96 | 0.88 | |
| 2,119.0 | 14.90 | 357.30 | 2,064.1 | 440.2 | -34.7 | 441.6 | 0.89 | -0.88 | |
| 2,210.0 | 15.60 | 354.10 | 2,151.9 | 464.1 | -36.6 | 465.5 | 1.20 | 0.77 | |
| 2,300.0 | 14.80 | 351.50 | 2,238.7 | 487.5 | -39.5 | 489.1 | 1.17 | -0.89 | |
| 2,391.0 | 13.50 | 350.20 | 2,327.0 | 509.4 | -43.0 | 511.2 | 1.47 | -1.43 | |
| 2,482.0 | 14.60 | 354.20 | 2,415.2 | 531.3 | -46.0 | 533.3 | 1.61 | 1.21 | |
| 2,573.0 | 14.50 | 354.60 | 2,503.3 | 554.1 | -48.2 | 556.2 | 0.16 | -0.11 | |
| 2,663.0 | 13.10 | 352.90 | 2,590.7 | 575.4 | -50.5 | 577.6 | 1.62 | -1.56 | |
| 2,754.0 | 13.40 | 353.60 | 2,679.3 | 596.1 | -53.0 | 598.5 | 0.37 | 0.33 | |
| 2,845.0 | 14.20 | 354.90 | 2,767.7 | 617.7 | -55.2 | 620.2 | 0.94 | 0.88 | |
| 2,935.0 | 13.60 | 0.10 | 2,855.0 | 639.3 | -56.1 | 641.8 | 1.54 | -0.67 | |
| 3,026.0 | 15.90 | 359.50 | 2,943.0 | 662.5 | -56.2 | 664.8 | 2.53 | 2.53 | |
| 3,117.0 | 14.20 | 358.00 | 3,030.9 | 686.1 | -56.7 | 688.4 | 1.92 | -1.87 | |
| 3,208.0 | 14.90 | 352.70 | 3,119.0 | 708.8 | -58.6 | 711.3 | 1.65 | 0.77 | |
| 3,298.0 | 14.00 | 355.80 | 3,206.1 | 731.2 | -60.9 | 733.7 | 1.32 | -1.00 | |
| 3,389.0 | 15.40 | 350.50 | 3,294.2 | 754.1 | -63.7 | 756.8 | 2.13 | 1.54 | |
| 3,480.0 | 14.90 | 353.30 | 3,382.0 | 777.6 | -67.0 | 780.5 | 0.97 | -0.55 | |
| 3,570.0 | 13.40 | 354.30 | 3,469.3 | 799.5 | -69.4 | 802.5 | 1.69 | -1.67 | |
| 3,661.0 | 13.60 | 352.60 | 3,557.8 | 820.6 | -71.8 | 823.7 | 0.49 | 0.22 | |
| 3,752.0 | 15.90 | 354.80 | 3,645.8 | 843.6 | -74.3 | 846.9 | 2.60 | 2.53 | |
| 3,843.0 | 13.20 | 352.10 | 3,733.8 | 866.3 | -76.9 | 869.7 | 3.06 | -2.97 | |
| 3,934.0 | 14.40 | 353.60 | 3,822.2 | 887.9 | -79.6 | 891.4 | 1.38 | 1.32 | |
| 4,024.0 | 14.60 | 350.70 | 3,909.3 | 910.2 | -82.7 | 913.9 | 0.84 | 0.22 | |
| 4,115.0 | 13.70 | 353.00 | 3,997.6 | 932.2 | -85.8 | 936.1 | 1.17 | -0.99 | |
| 4,206.0 | 12.00 | 355.80 | 4,086.3 | 952.3 | -87.8 | 956.4 | 1.99 | -1.87 | |
| 4,297.0 | 12.50 | 357.00 | 4,175.2 | 971.6 | -89.0 | 975.7 | 0.62 | 0.55 | |
| 4,388.0 | 12.70 | 350.20 | 4,264.0 | 991.3 | -91.3 | 995.5 | 1.64 | 0.22 | |
| 4,478.0 | 13.20 | 345.90 | 4,351.7 | 1,011.0 | -95.4 | 1,015.5 | 1.21 | 0.56 | |
| 4,569.0 | 12.40 | 351.40 | 4,440.5 | 1,030.7 | -99.4 | 1,035.5 | 1.60 | -0.88 | |
| 4,660.0 | 13.40 | 5.10 | 4,529.2 | 1,050.9 | -100.0 | 1,055.6 | 3.53 | 1.10 | |
| 4,751.0 | 13.60 | 1.30 | 4,617.7 | 1,072.1 | -98.8 | 1,076.6 | 1.00 | 0.22 | |
| 4,841.0 | 13.30 | 353.20 | 4,705.2 | 1,093.0 | -99.8 | 1,097.5 | 2.12 | -0.33 | |
| 4,932.0 | 12.90 | 357.70 | 4,793.9 | 1,113.5 | -101.4 | 1,118.1 | 1.20 | -0.44 | |
| 5,023.0 | 11.50 | 354.10 | 4,882.8 | 1,132.7 | -102.8 | 1,137.3 | 1.75 | -1.54 | |
| 5,114.0 | 13.60 | 354.60 | 4,971.6 | 1,152.4 | -104.7 | 1,157.1 | 2.31 | 2.31 | |
| 5,204.0 | 13.40 | 351.30 | 5,059.1 | 1,173.2 | -107.3 | 1,178.1 | 0.88 | -0.22 | |
| 5,295.0 | 15.60 | 355.00 | 5,147.2 | 1,195.8 | -109.9 | 1,200.8 | 2.62 | 2.42 | |
| 5,386.0 | 14.70 | 355.00 | 5,235.1 | 1,219.5 | -112.0 | 1,224.6 | 0.99 | -0.99 | |
| 5,476.0 | 15.00 | 355.70 | 5,322.1 | 1,242.5 | -113.9 | 1,247.7 | 0.39 | 0.33 | |
| 5,567.0 | 10.90 | 353.60 | 5,410.7 | 1,262.8 | -115.7 | 1,268.1 | 4.53 | -4.51 | |
| 5,658.0 | 8.60 | 353.80 | 5,500.4 | 1,278.1 | -117.4 | 1,283.5 | 2.53 | -2.53 | |
| 5,748.0 | 6.40 | 340.60 | 5,589.7 | 1,289.5 | -119.8 | 1,295.1 | 3.09 | -2.44 | |
| 5,839.0 | 3.80 | 329.90 | 5,680.3 | 1,296.9 | -123.0 | 1,302.7 | 3.03 | -2.86 | |
| 5,884.0 | 3.90 | 334.00 | 5,725.2 | 1,299.6 | -124.4 | 1,305.5 | 0.65 | 0.22 | |

Cathedral Energy Services

Survey Report

| | | | |
|------------------|--------------------------------|-------------------------------------|-------------------------------|
| Company: | Anadarko Petroleum Corporation | Local Co-ordinate Reference: | Well Hein 2-1 |
| Project: | DJ Wattenberg | TVD Reference: | KB=15' @ 4908.0ft (Xtreme 11) |
| Site: | SWNE Sec1-T1N-R67W (Hein 2-1) | MD Reference: | KB=15' @ 4908.0ft (Xtreme 11) |
| Well: | Hein 2-1 | North Reference: | True |
| Wellbore: | DD | Survey Calculation Method: | Minimum Curvature |
| Design: | DD | Database: | USA EDM 5000 Multi Users DB |

| Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Formations / Comments |
| 5,975.0 | 1.30 | 314.40 | 5,816.1 | 1,303.1 | -126.5 | 1,309.2 | 2.98 | -2.86 | |
| 6,066.0 | 2.70 | 125.10 | 5,907.1 | 1,302.6 | -125.5 | 1,308.6 | 4.38 | 1.54 | |
| 6,156.0 | 2.30 | 117.00 | 5,997.0 | 1,300.6 | -122.2 | 1,306.3 | 0.59 | -0.44 | |
| 6,247.0 | 1.60 | 102.50 | 6,087.9 | 1,299.5 | -119.3 | 1,304.9 | 0.94 | -0.77 | |
| 6,337.0 | 1.30 | 81.30 | 6,177.9 | 1,299.3 | -117.1 | 1,304.6 | 0.68 | -0.33 | |
| 6,428.0 | 1.40 | 52.50 | 6,268.9 | 1,300.2 | -115.1 | 1,305.3 | 0.75 | 0.11 | |
| 6,519.0 | 1.70 | 85.90 | 6,359.8 | 1,300.9 | -112.9 | 1,305.8 | 1.03 | 0.33 | |
| 6,610.0 | 1.90 | 204.50 | 6,450.8 | 1,299.7 | -112.2 | 1,304.5 | 3.40 | 0.22 | |
| 6,700.0 | 1.50 | 208.70 | 6,540.8 | 1,297.3 | -113.4 | 1,302.2 | 0.47 | -0.44 | |
| 6,791.0 | 1.20 | 206.50 | 6,631.7 | 1,295.4 | -114.4 | 1,300.4 | 0.33 | -0.33 | |
| 6,882.0 | 1.00 | 217.00 | 6,722.7 | 1,293.9 | -115.3 | 1,299.0 | 0.31 | -0.22 | |
| 6,973.0 | 1.10 | 225.00 | 6,813.7 | 1,292.6 | -116.4 | 1,297.9 | 0.19 | 0.11 | |
| 7,063.0 | 0.80 | 193.00 | 6,903.7 | 1,291.4 | -117.1 | 1,296.7 | 0.66 | -0.33 | |
| 7,154.0 | 0.80 | 155.40 | 6,994.7 | 1,290.2 | -117.0 | 1,295.5 | 0.57 | 0.00 | |
| 7,245.0 | 0.40 | 145.90 | 7,085.7 | 1,289.4 | -116.6 | 1,294.6 | 0.45 | -0.44 | |
| 7,335.0 | 0.50 | 126.20 | 7,175.7 | 1,288.9 | -116.1 | 1,294.1 | 0.20 | 0.11 | |
| 7,426.0 | 0.90 | 93.30 | 7,266.7 | 1,288.6 | -115.0 | 1,293.7 | 0.61 | 0.44 | |
| 7,517.0 | 0.80 | 90.60 | 7,357.7 | 1,288.6 | -113.7 | 1,293.6 | 0.12 | -0.11 | |
| 7,608.0 | 1.00 | 87.00 | 7,448.7 | 1,288.6 | -112.3 | 1,293.5 | 0.23 | 0.22 | |
| 7,698.0 | 0.70 | 86.70 | 7,538.7 | 1,288.7 | -110.9 | 1,293.4 | 0.33 | -0.33 | |
| 7,789.0 | 0.70 | 80.70 | 7,629.7 | 1,288.8 | -109.8 | 1,293.5 | 0.08 | 0.00 | |
| 7,880.0 | 0.70 | 67.10 | 7,720.7 | 1,289.1 | -108.8 | 1,293.7 | 0.18 | 0.00 | |
| 7,970.0 | 0.60 | 46.00 | 7,810.6 | 1,289.6 | -107.9 | 1,294.1 | 0.29 | -0.11 | |
| 8,061.0 | 0.50 | 76.60 | 7,901.6 | 1,290.1 | -107.2 | 1,294.5 | 0.34 | -0.11 | |
| 8,152.0 | 0.10 | 123.50 | 7,992.6 | 1,290.1 | -106.7 | 1,294.5 | 0.48 | -0.44 | |
| 8,195.0 | 0.10 | 98.80 | 8,035.6 | 1,290.1 | -106.7 | 1,294.5 | 0.10 | 0.00 | Last Cathedral Survey @ 8,195' MD |
| 8,225.4 | 0.10 | 81.30 | 8,066.0 | 1,290.1 | -106.6 | 1,294.5 | 0.10 | -0.01 | Hein 2-1 PBHL |
| 8,245.0 | 0.10 | 70.08 | 8,085.6 | 1,290.1 | -106.6 | 1,294.5 | 0.10 | 0.02 | Projection to Bit @ 8,245' MD |

| Targets | | | | | | | | | |
|--|---------------|--------------|----------|------------|------------|---------------|--------------|-----------|-------------|
| Target Name | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude | Longitude |
| - hit/miss target | | | | | | | | | |
| - Shape | | | | | | | | | |
| Sec 1, Legal Box #2 | 0.00 | 0.00 | -5,000.0 | 1,261.6 | -129.3 | 1,274,729.15 | 3,185,488.62 | 40.085612 | -104.837088 |
| - actual wellpath misses target center by 5158.3ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E) | | | | | | | | | |
| - Rectangle (sides W400.0 H400.0 D0.0) | | | | | | | | | |
| Hein 2-1 PBHL | 0.00 | 0.00 | 8,066.0 | 1,261.2 | -110.0 | 1,274,728.83 | 3,185,507.99 | 40.085611 | -104.837019 |
| - actual wellpath misses target center by 29.1ft at 8225.4ft MD (8066.0 TVD, 1290.1 N, -106.6 E) | | | | | | | | | |
| - Circle (radius 50.0) | | | | | | | | | |

| Design Annotations | | | | | |
|---------------------|---------------------|-------------------|------------|-----------------------------------|--|
| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | Comment | |
| | | +N/-S (ft) | +E/-W (ft) | | |
| 8,195.0 | 8,035.6 | 1,290.1 | -106.7 | Last Cathedral Survey @ 8,195' MD | |
| 8,245.0 | 8,085.6 | 1,290.1 | -106.6 | Projection to Bit @ 8,245' MD | |

Checked By: _____ Approved By: _____ Date: _____