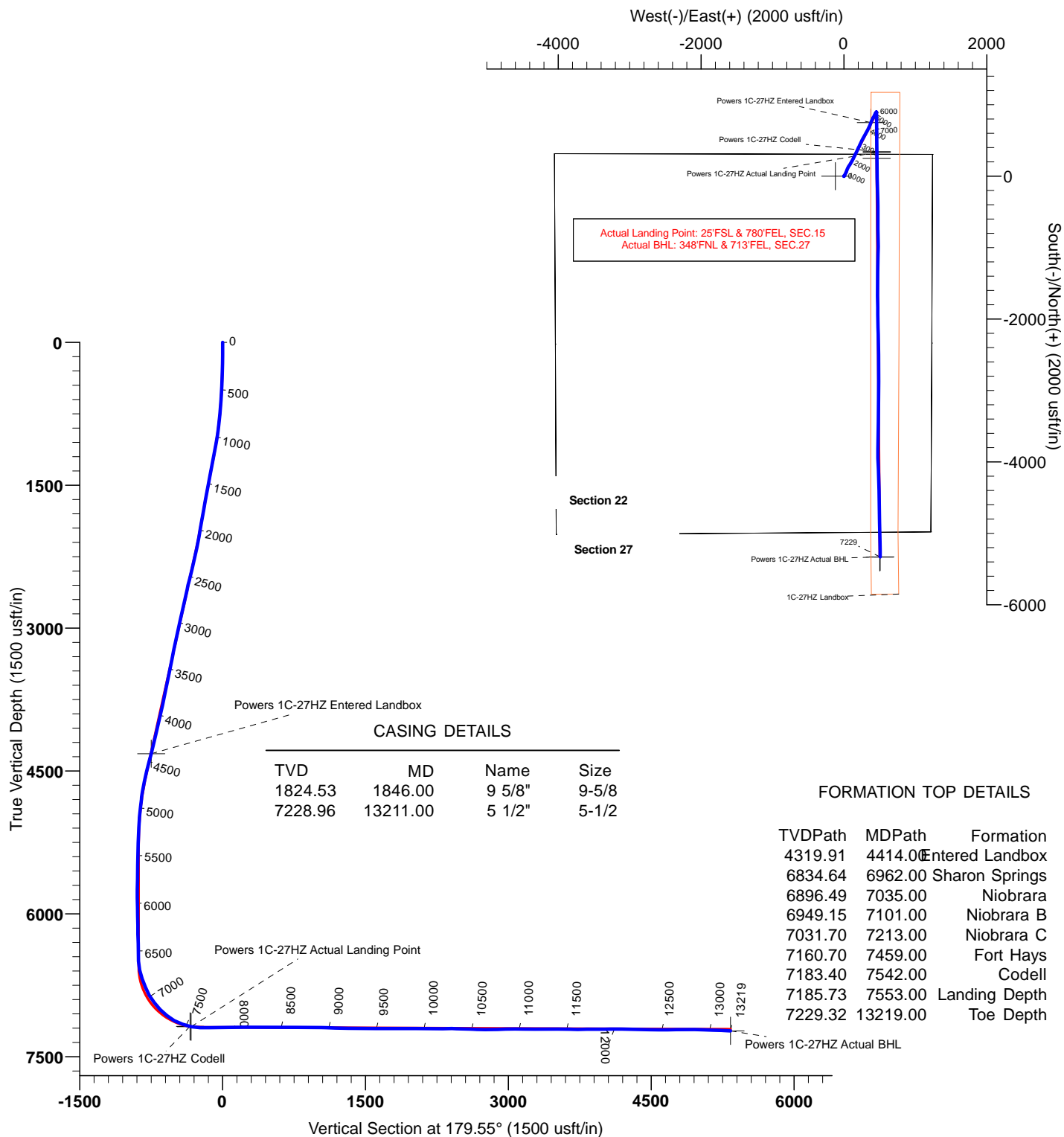


# US ROCKIES WATTENBERG PLANNING



Project: WELD-NAD83-UTMFT13N  
 Site: 2N-65W-22 Powers 2-22 Pad  
 Well: POWERS 1C-27HZ  
 Wellbore: POWERS 1C-27HZ  
 Design: PDD Actual Surveys



## CASING DETAILS

| TVD     | MD       | Name   | Size  |
|---------|----------|--------|-------|
| 1824.53 | 1846.00  | 9 5/8" | 9-5/8 |
| 7228.96 | 13211.00 | 5 1/2" | 5-1/2 |

## FORMATION TOP DETAILS

| TVDPath | MDPath   | Formation       |
|---------|----------|-----------------|
| 4319.91 | 4414.00  | Entered Landbox |
| 6834.64 | 6962.00  | Sharon Springs  |
| 6896.49 | 7035.00  | Niobrara        |
| 6949.15 | 7101.00  | Niobrara B      |
| 7031.70 | 7213.00  | Niobrara C      |
| 7160.70 | 7459.00  | Fort Hays       |
| 7183.40 | 7542.00  | Codell          |
| 7185.73 | 7553.00  | Landing Depth   |
| 7229.32 | 13219.00 | Toe Depth       |

## TARGET DETAILS

| Name                                | TVD     | +N/-S    | +E/-W  | Northing    | Easting    | Latitude  | Longitude   | Shape |
|-------------------------------------|---------|----------|--------|-------------|------------|-----------|-------------|-------|
| Powers 1C-27HZ Entered Landbox      | 4319.91 | 751.81   | 379.45 | 14575216.62 | 1739999.38 | 40.132595 | -104.643722 | Point |
| Powers 1C-27HZ Codell               | 7183.40 | 345.27   | 460.88 | 14574810.42 | 1740082.44 | 40.131478 | -104.643431 | Point |
| Powers 1C-27HZ Actual Landing Point | 7185.73 | 334.53   | 460.59 | 14574799.67 | 1740082.19 | 40.131449 | -104.643432 | Point |
| Powers 1C-27HZ Actual BHL           | 7229.32 | -5328.67 | 509.47 | 14569136.71 | 1740153.69 | 40.115897 | -104.643258 | Point |

## PREMIER DIRECTIONAL DRILLING

12941 North Freeway Suite 400, Houston, TX, 77060  
 Phone: 281-673-4000



# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
2N-65W-22 Powers 2-22 Pad  
POWERS 1C-27HZ**

**POWERS 1C-27HZ**

**Design: PDD Actual Surveys**

## **Standard Survey Report**

**09 November, 2015**

# PDD

## Survey Report

|                  |                                |                                     |                                   |
|------------------|--------------------------------|-------------------------------------|-----------------------------------|
| <b>Company:</b>  | US ROCKIES WATTENBERG PLANNING | <b>Local Co-ordinate Reference:</b> | Well POWERS 1C-27HZ               |
| <b>Project:</b>  | WELD-NAD83-UTMFT13N            | <b>TVD Reference:</b>               | 4894'+25' @ 4919.00usft (H&P 307) |
| <b>Site:</b>     | 2N-65W-22 Powers 2-22 Pad      | <b>MD Reference:</b>                | 4894'+25' @ 4919.00usft (H&P 307) |
| <b>Well:</b>     | POWERS 1C-27HZ                 | <b>North Reference:</b>             | True                              |
| <b>Wellbore:</b> | POWERS 1C-27HZ                 | <b>Survey Calculation Method:</b>   | Minimum Curvature                 |
| <b>Design:</b>   | PDD Actual Surveys             | <b>Database:</b>                    | EDM 5000.1 Single User Db         |

|                    |  |                      |                |
|--------------------|--|----------------------|----------------|
| <b>Project</b>     | WELD-NAD83-UTMFT13N                            |                      |                |
| <b>Map System:</b> | Universal Transverse Mercator (US Survey Feet) | <b>System Datum:</b> | Mean Sea Level |
| <b>Geo Datum:</b>  | North American Datum 1983                      |                      |                |
| <b>Map Zone:</b>   | Zone 13N (108 W to 102 W)                      |                      |                |

|                       |  |              |                    |                   |             |
|-----------------------|--|--------------|--------------------|-------------------|-------------|
| Site                  | 2N-65W-22 Powers 2-22 Pad, centered on 2N-27HZ |              |                    |                   |             |
| Site Position:        |  | Northing:    | 14,574,462.82 usft | Latitude:         | 40.130530   |
| From:                 | Lat/Long                                       | Easting:     | 1,739,503.03 usft  | Longitude:        | -104.645509 |
| Position Uncertainty: | 0.00 usft                                      | Slot Radius: | 13-3/16 "          | Grid Convergence: | 0.23 °      |

| Well                 |       | POWERS 1C-27HZ |                     |                    |               |               |
|----------------------|-------|----------------|---------------------|--------------------|---------------|---------------|
| Well Position        | +N/-S | 0.00 usft      | Northing:           | 14,574,463.30 usft | Latitude:     | 40.130530     |
|                      | +E/-W | 0.00 usft      | Easting:            | 1,739,622.94 usft  | Longitude:    | -104.645080   |
| Position Uncertainty |       | 3.28 usft      | Wellhead Elevation: | 0.00 usft          | Ground Level: | 4,894.00 usft |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | POWERS 1C-27HZ    |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF2010          | 1/12/2015          | 8.30                   | 66.73                | 52,625                     |

|                          |                                |                     |                     |                      |      |
|--------------------------|--------------------------------|---------------------|---------------------|----------------------|------|
| <b>Design</b>            | PDD Actual Surveys             |                     |                     |                      |      |
| <b>Audit Notes:</b>      |                                |                     |                     |                      |      |
| <b>Version:</b>          | 1.0                            | <b>Phase:</b>       | ACTUAL              | <b>Tie On Depth:</b> | 0.00 |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b> | <b>Direction (°)</b> |      |
|                          | 0.00                           | 0.00                | 0.00                | 179.55               |      |

|                       |                  |                                  |                       |                                    |  |
|-----------------------|------------------|----------------------------------|-----------------------|------------------------------------|--|
| <b>Survey Program</b> | <b>Date</b>      | 11/9/2015                        |                       |                                    |  |
| <b>From (usft)</b>    | <b>To (usft)</b> | <b>Survey (Wellbore)</b>         | <b>Tool Name</b>      | <b>Description</b>                 |  |
| 133.00                | 1,786.00         | SDI MWD Surveys (POWERS 1C-27HZ) | APC_ISCWSA REV 2 MWD  | Fixed:v2:standard declination      |  |
| 1,883.00              | 13,146.00        | PDD MWD+IFR Surveys (POWERS 1C-2 | APC_ISCWSA REV 2 MWD+ | Fixed:v2:crustal field declination |  |

|                              |                        |                    |                              |                     |                     |                                |                                |                               |                              |  |
|------------------------------|------------------------|--------------------|------------------------------|---------------------|---------------------|--------------------------------|--------------------------------|-------------------------------|------------------------------|--|
| <b>Survey</b>                |                        |                    |                              |                     |                     |                                |                                |                               |                              |  |
| <b>Measured Depth (usft)</b> | <b>Inclination (°)</b> | <b>Azimuth (°)</b> | <b>Vertical Depth (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b> | <b>Vertical Section (usft)</b> | <b>Dogleg Rate (°/100usft)</b> | <b>Build Rate (°/100usft)</b> | <b>Turn Rate (°/100usft)</b> |  |
| 0.00                         | 0.00                   | 0.00               | 0.00                         | 0.00                | 0.00                | 0.00                           | 0.00                           | 0.00                          | 0.00                         |  |
| 133.00                       | 0.64                   | 122.41             | 133.00                       | -0.40               | 0.63                | 0.40                           | 0.48                           | 0.48                          | 0.00                         |  |
| 223.00                       | 1.29                   | 17.58              | 222.99                       | 0.30                | 1.36                | -0.29                          | 1.76                           | 0.72                          | -116.48                      |  |
| 312.00                       | 1.77                   | 8.91               | 311.96                       | 2.61                | 1.87                | -2.60                          | 0.60                           | 0.54                          | -9.74                        |  |
| 390.00                       | 2.40                   | 31.34              | 389.91                       | 5.20                | 2.91                | -5.17                          | 1.31                           | 0.81                          | 28.76                        |  |
| 480.00                       | 3.24                   | 31.38              | 479.80                       | 8.98                | 5.21                | -8.94                          | 0.93                           | 0.93                          | 0.04                         |  |
| 570.00                       | 4.11                   | 33.11              | 569.61                       | 13.85               | 8.30                | -13.78                         | 0.97                           | 0.97                          | 1.92                         |  |
| 660.00                       | 5.25                   | 34.84              | 659.31                       | 19.93               | 12.41               | -19.83                         | 1.28                           | 1.27                          | 1.92                         |  |
| 750.00                       | 5.83                   | 32.15              | 748.89                       | 27.18               | 17.20               | -27.04                         | 0.71                           | 0.64                          | -2.99                        |  |
| 840.00                       | 7.36                   | 27.20              | 838.29                       | 36.18               | 22.27               | -36.00                         | 1.81                           | 1.70                          | -5.50                        |  |

# PDD

## Survey Report

|                  |                                |                                     |                                   |
|------------------|--------------------------------|-------------------------------------|-----------------------------------|
| <b>Company:</b>  | US ROCKIES WATTENBERG PLANNING | <b>Local Co-ordinate Reference:</b> | Well POWERS 1C-27HZ               |
| <b>Project:</b>  | WELD-NAD83-UTMFT13N            | <b>TVD Reference:</b>               | 4894'+25' @ 4919.00usft (H&P 307) |
| <b>Site:</b>     | 2N-65W-22 Powers 2-22 Pad      | <b>MD Reference:</b>                | 4894'+25' @ 4919.00usft (H&P 307) |
| <b>Well:</b>     | POWERS 1C-27HZ                 | <b>North Reference:</b>             | True                              |
| <b>Wellbore:</b> | POWERS 1C-27HZ                 | <b>Survey Calculation Method:</b>   | Minimum Curvature                 |
| <b>Design:</b>   | PDD Actual Surveys             | <b>Database:</b>                    | EDM 5000.1 Single User Db         |

| Survey                |                 |             |                       |              |              |                         |                         |                        |                       |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 931.00                | 8.68            | 23.48       | 928.40                | 47.66        | 27.67        | -47.44                  | 1.56                    | 1.45                   | -4.09                 |
| 1,020.00              | 9.76            | 20.83       | 1,016.25              | 60.87        | 33.03        | -60.61                  | 1.30                    | 1.21                   | -2.98                 |
| 1,156.00              | 11.78           | 20.40       | 1,149.85              | 84.66        | 41.96        | -84.33                  | 1.49                    | 1.49                   | -0.32                 |
| 1,246.00              | 12.54           | 26.36       | 1,237.83              | 102.03       | 49.51        | -101.63                 | 1.63                    | 0.84                   | 6.62                  |
| 1,336.00              | 11.42           | 31.05       | 1,325.87              | 118.42       | 58.44        | -117.95                 | 1.65                    | -1.24                  | 5.21                  |
| 1,426.00              | 12.14           | 29.29       | 1,413.97              | 134.30       | 67.67        | -133.77                 | 0.89                    | 0.80                   | -1.96                 |
| 1,516.00              | 13.08           | 29.87       | 1,501.80              | 151.39       | 77.37        | -150.78                 | 1.05                    | 1.04                   | 0.64                  |
| 1,606.00              | 11.64           | 31.09       | 1,589.71              | 168.00       | 87.13        | -167.31                 | 1.63                    | -1.60                  | 1.36                  |
| 1,696.00              | 12.10           | 29.93       | 1,677.79              | 183.95       | 96.52        | -183.18                 | 0.58                    | 0.51                   | -1.29                 |
| 1,786.00              | 11.96           | 29.31       | 1,765.81              | 200.25       | 105.79       | -199.41                 | 0.21                    | -0.16                  | -0.69                 |
| 1,883.00              | 11.60           | 29.20       | 1,860.77              | 217.53       | 115.47       | -216.62                 | 0.37                    | -0.37                  | -0.11                 |
| 1,977.00              | 11.10           | 27.90       | 1,952.93              | 233.78       | 124.32       | -232.79                 | 0.60                    | -0.53                  | -1.38                 |
| 2,071.00              | 10.90           | 27.40       | 2,045.20              | 249.66       | 132.64       | -248.61                 | 0.24                    | -0.21                  | -0.53                 |
| 2,166.00              | 12.70           | 27.80       | 2,138.19              | 266.88       | 141.65       | -265.76                 | 1.90                    | 1.89                   | 0.42                  |
| 2,260.00              | 14.60           | 26.50       | 2,229.53              | 286.62       | 151.75       | -285.42                 | 2.05                    | 2.02                   | -1.38                 |
| 2,355.00              | 13.70           | 25.20       | 2,321.65              | 307.52       | 161.88       | -306.23                 | 1.00                    | -0.95                  | -1.37                 |
| 2,450.00              | 16.00           | 25.80       | 2,413.47              | 329.49       | 172.37       | -328.12                 | 2.43                    | 2.42                   | 0.63                  |
| 2,544.00              | 14.90           | 23.60       | 2,504.07              | 352.22       | 182.85       | -350.78                 | 1.33                    | -1.17                  | -2.34                 |
| 2,638.00              | 13.70           | 24.80       | 2,595.16              | 373.40       | 192.36       | -371.88                 | 1.31                    | -1.28                  | 1.28                  |
| 2,733.00              | 14.60           | 27.60       | 2,687.28              | 394.23       | 202.63       | -392.62                 | 1.19                    | 0.95                   | 2.95                  |
| 2,828.00              | 13.10           | 26.00       | 2,779.51              | 414.52       | 212.89       | -412.83                 | 1.63                    | -1.58                  | -1.68                 |
| 2,922.00              | 13.50           | 23.70       | 2,870.99              | 434.14       | 221.97       | -432.38                 | 0.71                    | 0.43                   | -2.45                 |
| 3,016.00              | 15.20           | 26.50       | 2,962.06              | 455.21       | 231.88       | -453.38                 | 1.95                    | 1.81                   | 2.98                  |
| 3,111.00              | 14.30           | 26.30       | 3,053.93              | 476.88       | 242.64       | -474.96                 | 0.95                    | -0.95                  | -0.21                 |
| 3,205.00              | 13.00           | 25.00       | 3,145.27              | 496.87       | 252.25       | -494.87                 | 1.42                    | -1.38                  | -1.38                 |
| 3,300.00              | 11.40           | 21.80       | 3,238.12              | 515.27       | 260.25       | -513.21                 | 1.83                    | -1.68                  | -3.37                 |
| 3,395.00              | 12.90           | 26.50       | 3,330.99              | 533.48       | 268.47       | -531.36                 | 1.89                    | 1.58                   | 4.95                  |
| 3,489.00              | 13.90           | 33.90       | 3,422.44              | 552.24       | 279.45       | -550.03                 | 2.11                    | 1.06                   | 7.87                  |
| 3,584.00              | 13.60           | 31.70       | 3,514.72              | 571.22       | 291.69       | -568.91                 | 0.63                    | -0.32                  | -2.32                 |
| 3,678.00              | 14.20           | 32.10       | 3,605.97              | 590.39       | 303.62       | -587.99                 | 0.65                    | 0.64                   | 0.43                  |
| 3,773.00              | 12.70           | 27.20       | 3,698.36              | 609.55       | 314.59       | -607.06                 | 1.98                    | -1.58                  | -5.16                 |
| 3,867.00              | 13.00           | 25.60       | 3,790.01              | 628.27       | 323.88       | -625.71                 | 0.50                    | 0.32                   | -1.70                 |
| 3,962.00              | 15.00           | 28.30       | 3,882.18              | 648.74       | 334.32       | -646.09                 | 2.21                    | 2.11                   | 2.84                  |
| 4,056.00              | 14.70           | 26.60       | 3,973.04              | 670.11       | 345.43       | -667.38                 | 0.56                    | -0.32                  | -1.81                 |
| 4,151.00              | 14.30           | 24.50       | 4,065.02              | 691.57       | 355.69       | -688.75                 | 0.70                    | -0.42                  | -2.21                 |
| 4,246.00              | 14.20           | 22.70       | 4,157.09              | 712.99       | 365.06       | -710.10                 | 0.48                    | -0.11                  | -1.89                 |
| 4,340.00              | 13.80           | 18.80       | 4,248.30              | 734.24       | 373.12       | -731.29                 | 1.09                    | -0.43                  | -4.15                 |
| 4,435.00              | 15.90           | 21.20       | 4,340.13              | 757.10       | 381.48       | -754.08                 | 2.30                    | 2.21                   | 2.53                  |
| 4,529.00              | 16.20           | 25.60       | 4,430.47              | 780.93       | 391.80       | -777.83                 | 1.33                    | 0.32                   | 4.68                  |
| 4,624.00              | 15.30           | 25.40       | 4,521.90              | 804.21       | 402.90       | -801.02                 | 0.95                    | -0.95                  | -0.21                 |
| 4,718.00              | 13.00           | 29.20       | 4,613.04              | 824.64       | 413.38       | -821.37                 | 2.64                    | -2.45                  | 4.04                  |
| 4,813.00              | 11.10           | 29.20       | 4,705.94              | 841.95       | 423.06       | -838.61                 | 2.00                    | -2.00                  | 0.00                  |
| 4,907.00              | 7.50            | 26.80       | 4,798.69              | 855.33       | 430.24       | -851.93                 | 3.85                    | -3.83                  | -2.55                 |

# PDD

## Survey Report

|                  |                                |                                     |                                   |
|------------------|--------------------------------|-------------------------------------|-----------------------------------|
| <b>Company:</b>  | US ROCKIES WATTENBERG PLANNING | <b>Local Co-ordinate Reference:</b> | Well POWERS 1C-27HZ               |
| <b>Project:</b>  | WELD-NAD83-UTMFT13N            | <b>TVD Reference:</b>               | 4894'+25' @ 4919.00usft (H&P 307) |
| <b>Site:</b>     | 2N-65W-22 Powers 2-22 Pad      | <b>MD Reference:</b>                | 4894'+25' @ 4919.00usft (H&P 307) |
| <b>Well:</b>     | POWERS 1C-27HZ                 | <b>North Reference:</b>             | True                              |
| <b>Wellbore:</b> | POWERS 1C-27HZ                 | <b>Survey Calculation Method:</b>   | Minimum Curvature                 |
| <b>Design:</b>   | PDD Actual Surveys             | <b>Database:</b>                    | EDM 5000.1 Single User Db         |

| Survey                |                 |             |                       |              |              |                         |                         |                        |                       |  |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|--|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |  |
| 5,002.00              | 6.80            | 24.20       | 4,892.95              | 866.00       | 435.34       | -862.55                 | 0.81                    | -0.74                  | -2.74                 |  |
| 5,096.00              | 6.00            | 31.70       | 4,986.37              | 875.25       | 440.20       | -871.77                 | 1.23                    | -0.85                  | 7.98                  |  |
| 5,191.00              | 3.50            | 33.70       | 5,081.04              | 881.89       | 444.42       | -878.37                 | 2.64                    | -2.63                  | 2.11                  |  |
| 5,285.00              | 3.00            | 35.70       | 5,174.88              | 886.28       | 447.45       | -882.73                 | 0.55                    | -0.53                  | 2.13                  |  |
| 5,380.00              | 3.20            | 52.40       | 5,269.75              | 889.91       | 451.00       | -886.34                 | 0.97                    | 0.21                   | 17.58                 |  |
| 5,475.00              | 0.90            | 47.40       | 5,364.68              | 892.04       | 453.65       | -888.45                 | 2.43                    | -2.42                  | -5.26                 |  |
| 5,569.00              | 0.90            | 359.40      | 5,458.67              | 893.27       | 454.19       | -889.68                 | 0.78                    | 0.00                   | -51.06                |  |
| 5,664.00              | 1.00            | 358.50      | 5,553.66              | 894.85       | 454.16       | -891.25                 | 0.11                    | 0.11                   | -0.95                 |  |
| 5,758.00              | 1.00            | 0.30        | 5,647.64              | 896.49       | 454.14       | -892.89                 | 0.03                    | 0.00                   | 1.91                  |  |
| 5,853.00              | 1.30            | 28.60       | 5,742.62              | 898.26       | 454.66       | -894.67                 | 0.67                    | 0.32                   | 29.79                 |  |
| 5,947.00              | 0.40            | 142.50      | 5,836.62              | 898.94       | 455.37       | -895.34                 | 1.60                    | -0.96                  | 121.17                |  |
| 6,042.00              | 1.70            | 185.10      | 5,931.60              | 897.27       | 455.45       | -893.67                 | 1.51                    | 1.37                   | 44.84                 |  |
| 6,136.00              | 1.40            | 178.00      | 6,025.56              | 894.74       | 455.36       | -891.13                 | 0.38                    | -0.32                  | -7.55                 |  |
| 6,231.00              | 1.00            | 176.80      | 6,120.54              | 892.75       | 455.45       | -889.14                 | 0.42                    | -0.42                  | -1.26                 |  |
| 6,325.00              | 0.40            | 165.90      | 6,214.54              | 891.61       | 455.58       | -888.01                 | 0.65                    | -0.64                  | -11.60                |  |
| 6,420.00              | 1.80            | 149.70      | 6,309.52              | 890.00       | 456.41       | -886.39                 | 1.50                    | 1.47                   | -17.05                |  |
| 6,514.00              | 1.50            | 151.20      | 6,403.48              | 887.65       | 457.75       | -884.03                 | 0.32                    | -0.32                  | 1.60                  |  |
| 6,609.00              | 1.30            | 146.60      | 6,498.45              | 885.66       | 458.94       | -882.03                 | 0.24                    | -0.21                  | -4.84                 |  |
| 6,703.00              | 13.10           | 181.60      | 6,591.56              | 874.08       | 459.23       | -870.44                 | 12.83                   | 12.55                  | 37.23                 |  |
| 6,798.00              | 20.20           | 176.40      | 6,682.52              | 846.91       | 459.96       | -843.27                 | 7.63                    | 7.47                   | -5.47                 |  |
| 6,892.00              | 19.90           | 178.30      | 6,770.83              | 814.72       | 461.45       | -811.07                 | 0.76                    | -0.32                  | 2.02                  |  |
| 6,987.00              | 31.50           | 185.50      | 6,856.30              | 773.71       | 459.55       | -770.07                 | 12.62                   | 12.21                  | 7.58                  |  |
| 7,081.00              | 38.00           | 180.10      | 6,933.51              | 720.26       | 457.14       | -716.64                 | 7.65                    | 6.91                   | -5.74                 |  |
| 7,176.00              | 43.40           | 177.40      | 7,005.52              | 658.36       | 458.57       | -654.74                 | 5.98                    | 5.68                   | -2.84                 |  |
| 7,270.00              | 51.30           | 178.50      | 7,069.15              | 589.32       | 461.00       | -585.68                 | 8.45                    | 8.40                   | 1.17                  |  |
| 7,365.00              | 60.70           | 179.10      | 7,122.22              | 510.67       | 462.62       | -507.02                 | 9.91                    | 9.89                   | 0.63                  |  |
| 7,459.00              | 70.90           | 180.90      | 7,160.70              | 425.05       | 462.57       | -421.40                 | 10.99                   | 10.85                  | 1.91                  |  |
| 7,553.00              | 78.20           | 181.60      | 7,185.73              | 334.53       | 460.59       | -330.90                 | 7.80                    | 7.77                   | 0.74                  |  |
| 7,648.00              | 89.10           | 178.90      | 7,196.22              | 240.26       | 460.20       | -236.64                 | 11.82                   | 11.47                  | -2.84                 |  |
| 7,743.00              | 90.60           | 179.10      | 7,196.47              | 145.28       | 461.86       | -141.65                 | 1.59                    | 1.58                   | 0.21                  |  |
| 7,837.00              | 90.90           | 178.30      | 7,195.24              | 51.31        | 463.99       | -47.67                  | 0.91                    | 0.32                   | -0.85                 |  |
| 7,932.00              | 90.80           | 178.00      | 7,193.83              | -43.63       | 467.05       | 47.29                   | 0.33                    | -0.11                  | -0.32                 |  |
| 8,026.00              | 91.30           | 177.50      | 7,192.11              | -137.54      | 470.74       | 141.23                  | 0.75                    | 0.53                   | -0.53                 |  |
| 8,121.00              | 89.50           | 179.20      | 7,191.44              | -232.49      | 473.48       | 236.20                  | 2.61                    | -1.89                  | 1.79                  |  |
| 8,215.00              | 90.20           | 179.20      | 7,191.69              | -326.48      | 474.79       | 330.20                  | 0.74                    | 0.74                   | 0.00                  |  |
| 8,310.00              | 90.70           | 178.70      | 7,190.94              | -421.46      | 476.53       | 425.19                  | 0.74                    | 0.53                   | -0.53                 |  |
| 8,404.00              | 89.10           | 180.20      | 7,191.11              | -515.45      | 477.44       | 519.18                  | 2.33                    | -1.70                  | 1.60                  |  |
| 8,498.00              | 89.30           | 180.00      | 7,192.42              | -609.44      | 477.27       | 613.17                  | 0.30                    | 0.21                   | -0.21                 |  |
| 8,593.00              | 89.60           | 179.80      | 7,193.33              | -704.43      | 477.44       | 708.16                  | 0.38                    | 0.32                   | -0.21                 |  |
| 8,687.00              | 89.80           | 179.40      | 7,193.82              | -798.43      | 478.09       | 802.16                  | 0.48                    | 0.21                   | -0.43                 |  |
| 8,782.00              | 90.30           | 178.50      | 7,193.74              | -893.41      | 479.83       | 897.15                  | 1.08                    | 0.53                   | -0.95                 |  |
| 8,876.00              | 89.10           | 180.50      | 7,194.23              | -987.40      | 480.65       | 991.15                  | 2.48                    | -1.28                  | 2.13                  |  |
| 8,971.00              | 88.00           | 181.50      | 7,196.64              | -1,082.36    | 479.00       | 1,086.08                | 1.56                    | -1.16                  | 1.05                  |  |

**PDD**  
Survey Report

|                  |                                |                                     |                                   |
|------------------|--------------------------------|-------------------------------------|-----------------------------------|
| <b>Company:</b>  | US ROCKIES WATTENBERG PLANNING | <b>Local Co-ordinate Reference:</b> | Well POWERS 1C-27HZ               |
| <b>Project:</b>  | WELD-NAD83-UTMFT13N            | <b>TVD Reference:</b>               | 4894'+25' @ 4919.00usft (H&P 307) |
| <b>Site:</b>     | 2N-65W-22 Powers 2-22 Pad      | <b>MD Reference:</b>                | 4894'+25' @ 4919.00usft (H&P 307) |
| <b>Well:</b>     | POWERS 1C-27HZ                 | <b>North Reference:</b>             | True                              |
| <b>Wellbore:</b> | POWERS 1C-27HZ                 | <b>Survey Calculation Method:</b>   | Minimum Curvature                 |
| <b>Design:</b>   | PDD Actual Surveys             | <b>Database:</b>                    | EDM 5000.1 Single User Db         |

| Survey                |                 |             |                       |              |              |                         |                         |                        |                       |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 9,065.00              | 88.40           | 181.10      | 7,199.59              | -1,176.28    | 476.87       | 1,179.99                | 0.60                    | 0.43                   | -0.43                 |
| 9,160.00              | 88.80           | 180.90      | 7,201.91              | -1,271.24    | 475.21       | 1,274.93                | 0.47                    | 0.42                   | -0.21                 |
| 9,254.00              | 88.40           | 180.70      | 7,204.21              | -1,365.20    | 473.90       | 1,368.88                | 0.48                    | -0.43                  | -0.21                 |
| 9,348.00              | 90.00           | 180.90      | 7,205.52              | -1,459.18    | 472.58       | 1,462.85                | 1.72                    | 1.70                   | 0.21                  |
| 9,443.00              | 90.70           | 180.50      | 7,204.94              | -1,554.17    | 471.42       | 1,557.83                | 0.85                    | 0.74                   | -0.42                 |
| 9,538.00              | 89.50           | 179.50      | 7,204.77              | -1,649.17    | 471.42       | 1,652.82                | 1.64                    | -1.26                  | -1.05                 |
| 9,632.00              | 90.20           | 179.20      | 7,205.02              | -1,743.16    | 472.49       | 1,746.82                | 0.81                    | 0.74                   | -0.32                 |
| 9,727.00              | 90.50           | 178.70      | 7,204.44              | -1,838.14    | 474.23       | 1,841.81                | 0.61                    | 0.32                   | -0.53                 |
| 9,821.00              | 89.00           | 179.60      | 7,204.85              | -1,932.13    | 475.62       | 1,935.81                | 1.86                    | -1.60                  | 0.96                  |
| 9,915.00              | 89.20           | 179.20      | 7,206.33              | -2,026.11    | 476.61       | 2,029.79                | 0.48                    | 0.21                   | -0.43                 |
| 10,010.00             | 89.70           | 179.00      | 7,207.24              | -2,121.10    | 478.10       | 2,124.79                | 0.57                    | 0.53                   | -0.21                 |
| 10,104.00             | 90.20           | 178.30      | 7,207.32              | -2,215.07    | 480.32       | 2,218.77                | 0.92                    | 0.53                   | -0.74                 |
| 10,199.00             | 90.90           | 177.70      | 7,206.41              | -2,310.01    | 483.63       | 2,313.73                | 0.97                    | 0.74                   | -0.63                 |
| 10,293.00             | 89.80           | 179.80      | 7,205.83              | -2,403.97    | 485.68       | 2,407.72                | 2.52                    | -1.17                  | 2.23                  |
| 10,388.00             | 88.10           | 179.40      | 7,207.57              | -2,498.95    | 486.34       | 2,502.70                | 1.84                    | -1.79                  | -0.42                 |
| 10,482.00             | 87.20           | 179.30      | 7,211.43              | -2,592.87    | 487.41       | 2,596.61                | 0.96                    | -0.96                  | -0.11                 |
| 10,577.00             | 89.10           | 180.10      | 7,214.49              | -2,687.81    | 487.91       | 2,691.56                | 2.17                    | 2.00                   | 0.84                  |
| 10,671.00             | 89.70           | 179.70      | 7,215.48              | -2,781.80    | 488.07       | 2,785.55                | 0.77                    | 0.64                   | -0.43                 |
| 10,766.00             | 91.50           | 180.20      | 7,214.48              | -2,876.80    | 488.15       | 2,880.54                | 1.97                    | 1.89                   | 0.53                  |
| 10,860.00             | 92.10           | 180.10      | 7,211.53              | -2,970.75    | 487.91       | 2,974.49                | 0.65                    | 0.64                   | -0.11                 |
| 10,955.00             | 89.80           | 180.40      | 7,209.96              | -3,065.73    | 487.49       | 3,069.46                | 2.44                    | -2.42                  | 0.32                  |
| 11,049.00             | 89.50           | 180.90      | 7,210.53              | -3,159.72    | 486.43       | 3,163.44                | 0.62                    | -0.32                  | 0.53                  |
| 11,144.00             | 89.30           | 181.00      | 7,211.53              | -3,254.70    | 484.85       | 3,258.41                | 0.24                    | -0.21                  | 0.11                  |
| 11,238.00             | 90.10           | 180.80      | 7,212.02              | -3,348.69    | 483.38       | 3,352.38                | 0.88                    | 0.85                   | -0.21                 |
| 11,333.00             | 91.10           | 180.60      | 7,211.02              | -3,443.67    | 482.21       | 3,447.36                | 1.07                    | 1.05                   | -0.21                 |
| 11,427.00             | 88.80           | 180.70      | 7,211.11              | -3,537.66    | 481.15       | 3,541.33                | 2.45                    | -2.45                  | 0.11                  |
| 11,522.00             | 89.00           | 180.70      | 7,212.93              | -3,632.64    | 479.99       | 3,636.29                | 0.21                    | 0.21                   | 0.00                  |
| 11,616.00             | 89.90           | 180.80      | 7,213.83              | -3,726.62    | 478.76       | 3,730.27                | 0.96                    | 0.96                   | 0.11                  |
| 11,711.00             | 90.90           | 181.10      | 7,213.17              | -3,821.61    | 477.18       | 3,825.24                | 1.10                    | 1.05                   | 0.32                  |
| 11,805.00             | 89.80           | 180.00      | 7,212.59              | -3,915.60    | 476.28       | 3,919.22                | 1.65                    | -1.17                  | -1.17                 |
| 11,900.00             | 90.00           | 177.80      | 7,212.76              | -4,010.57    | 478.10       | 4,014.21                | 2.33                    | 0.21                   | -2.32                 |
| 11,994.00             | 91.00           | 177.80      | 7,211.94              | -4,104.50    | 481.71       | 4,108.16                | 1.06                    | 1.06                   | 0.00                  |
| 12,089.00             | 89.60           | 176.10      | 7,211.44              | -4,199.36    | 486.77       | 4,203.05                | 2.32                    | -1.47                  | -1.79                 |
| 12,183.00             | 88.80           | 178.70      | 7,212.75              | -4,293.24    | 491.03       | 4,296.97                | 2.89                    | -0.85                  | 2.77                  |
| 12,278.00             | 88.40           | 178.00      | 7,215.08              | -4,388.18    | 493.76       | 4,391.92                | 0.85                    | -0.42                  | -0.74                 |
| 12,372.00             | 88.80           | 179.50      | 7,217.37              | -4,482.12    | 495.81       | 4,485.88                | 1.65                    | 0.43                   | 1.60                  |
| 12,467.00             | 89.50           | 179.80      | 7,218.78              | -4,577.11    | 496.39       | 4,580.87                | 0.80                    | 0.74                   | 0.32                  |
| 12,561.00             | 90.90           | 179.50      | 7,218.45              | -4,671.10    | 496.97       | 4,674.86                | 1.52                    | 1.49                   | -0.32                 |
| 12,656.00             | 91.90           | 179.20      | 7,216.13              | -4,766.07    | 498.05       | 4,769.83                | 1.10                    | 1.05                   | -0.32                 |
| 12,750.00             | 89.20           | 178.80      | 7,215.23              | -4,860.04    | 499.69       | 4,863.82                | 2.90                    | -2.87                  | -0.43                 |
| 12,845.00             | 89.80           | 178.70      | 7,216.06              | -4,955.01    | 501.76       | 4,958.80                | 0.64                    | 0.63                   | -0.11                 |
| 12,939.00             | 87.70           | 178.40      | 7,218.11              | -5,048.96    | 504.14       | 5,052.76                | 2.26                    | -2.23                  | -0.32                 |
| 13,033.00             | 88.10           | 178.70      | 7,221.55              | -5,142.86    | 506.51       | 5,146.68                | 0.53                    | 0.43                   | 0.32                  |
| 13,127.00             | 87.50           | 179.10      | 7,225.16              | -5,236.78    | 508.32       | 5,240.61                | 0.77                    | -0.64                  | 0.43                  |

# PDD

## Survey Report

|                  |                                |                                     |                                   |
|------------------|--------------------------------|-------------------------------------|-----------------------------------|
| <b>Company:</b>  | US ROCKIES WATTENBERG PLANNING | <b>Local Co-ordinate Reference:</b> | Well POWERS 1C-27HZ               |
| <b>Project:</b>  | WELD-NAD83-UTMFT13N            | <b>TVD Reference:</b>               | 4894'+25' @ 4919.00usft (H&P 307) |
| <b>Site:</b>     | 2N-65W-22 Powers 2-22 Pad      | <b>MD Reference:</b>                | 4894'+25' @ 4919.00usft (H&P 307) |
| <b>Well:</b>     | POWERS 1C-27HZ                 | <b>North Reference:</b>             | True                              |
| <b>Wellbore:</b> | POWERS 1C-27HZ                 | <b>Survey Calculation Method:</b>   | Minimum Curvature                 |
| <b>Design:</b>   | PDD Actual Surveys             | <b>Database:</b>                    | EDM 5000.1 Single User Db         |

| Survey                |                 |             |                       |              |              |                         |                         |                        |                       |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 13,146.00             | 87.40           | 179.30      | 7,226.01              | -5,255.76    | 508.58       | 5,259.59                | 1.18                    | -0.53                  | 1.05                  |
| 13,219.00             | 87.40           | 179.30      | 7,229.32              | -5,328.67    | 509.47       | 5,332.51                | 0.00                    | 0.00                   | 0.00                  |

| Design Targets   |               |              |            |              |              |                 |                |           |             |
|--|---------------|--------------|------------|--------------|--------------|-----------------|----------------|-----------|-------------|
| Target Name<br>- hit/miss target<br>- Shape  | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude  | Longitude   |
| Powers 1C-27HZ Entere<br>- actual wellpath hits target center<br>- Point   | 0.00          | 0.00         | 4,319.91   | 751.81       | 379.45       | 14,575,216.62   | 1,739,999.38   | 40.132595 | -104.643723 |
| Powers 1C-27HZ Codell<br>- actual wellpath misses target center by 0.01usft at 7542.01usft MD (7183.40 TVD, 345.26 N, 460.88 E)<br>- Point | 0.00          | 0.00         | 7,183.40   | 345.27       | 460.88       | 14,574,810.41   | 1,740,082.44   | 40.131478 | -104.643431 |
| Powers 1C-27HZ Actual<br>- actual wellpath hits target center<br>- Point   | 0.00          | 0.00         | 7,185.73   | 334.53       | 460.59       | 14,574,799.66   | 1,740,082.19   | 40.131449 | -104.643432 |
| Powers 1C-27HZ Actual<br>- actual wellpath hits target center<br>- Point   | 0.00          | 0.00         | 7,229.32   | -5,328.67    | 509.47       | 14,569,136.70   | 1,740,153.68   | 40.115897 | -104.643258 |

| Casing Points         |                       |        |                     |                   |  |
|-----------------------|-----------------------|--------|---------------------|-------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Name   | Casing Diameter (") | Hole Diameter (") |  |
| 1,846.00              | 1,824.53              | 9 5/8" | 9-5/8               | 13-1/2            |  |
| 13,211.00             | 7,228.96              | 5 1/2" | 5-1/2               | 8-1/2             |  |

| Formations            |                       |                 |           |         |                   |  |
|-----------------------|-----------------------|-----------------|-----------|---------|-------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Name            | Lithology | Dip (°) | Dip Direction (°) |  |
| 4,414.00              | 4,319.91              | Entered Landbox |           | 0.00    |                   |  |
| 6,962.00              | 6,834.64              | Sharon Springs  |           | 0.00    |                   |  |
| 7,035.00              | 6,896.49              | Niobrara        |           | 0.00    |                   |  |
| 7,101.00              | 6,949.15              | Niobrara B      |           | 0.00    |                   |  |
| 7,213.00              | 7,031.70              | Niobrara C      |           | 0.00    |                   |  |
| 7,459.00              | 7,160.70              | Fort Hays       |           | 0.00    |                   |  |
| 7,542.00              | 7,183.40              | Codell          |           | 0.00    |                   |  |
| 7,553.00              | 7,185.73              | Landing Depth   |           | 0.00    |                   |  |
| 13,219.00             | 7,229.32              | Toe Depth       |           | 0.00    |                   |  |

**PDD**  
Survey Report

|                  |                                |                                     |                                   |
|------------------|--------------------------------|-------------------------------------|-----------------------------------|
| <b>Company:</b>  | US ROCKIES WATTENBERG PLANNING | <b>Local Co-ordinate Reference:</b> | Well POWERS 1C-27HZ               |
| <b>Project:</b>  | WELD-NAD83-UTMFT13N            | <b>TVD Reference:</b>               | 4894'+25' @ 4919.00usft (H&P 307) |
| <b>Site:</b>     | 2N-65W-22 Powers 2-22 Pad      | <b>MD Reference:</b>                | 4894'+25' @ 4919.00usft (H&P 307) |
| <b>Well:</b>     | POWERS 1C-27HZ                 | <b>North Reference:</b>             | True                              |
| <b>Wellbore:</b> | POWERS 1C-27HZ                 | <b>Survey Calculation Method:</b>   | Minimum Curvature                 |
| <b>Design:</b>   | PDD Actual Surveys             | <b>Database:</b>                    | EDM 5000.1 Single User Db         |

| Design Annotations          |                             |                   |                 |                   |  |
|-----------------------------|-----------------------------|-------------------|-----------------|-------------------|--|
| Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Local Coordinates |                 |                   |  |
|                             |                             | +N/-S<br>(usft)   | +E/-W<br>(usft) | Comment           |  |
| 13,219.00                   | 7,229.32                    | -5,328.67         | 509.47          | Projection to Bit |  |

|                   |                    |             |
|-------------------|--------------------|-------------|
| Checked By: _____ | Approved By: _____ | Date: _____ |
|-------------------|--------------------|-------------|