

Noble Energy Inc.- Weld County, CO (Grid North)

Well Name: **Todd LC25-750**

Surface Location: Todd LC25-760 Pad Sec.25-T9N-R59W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

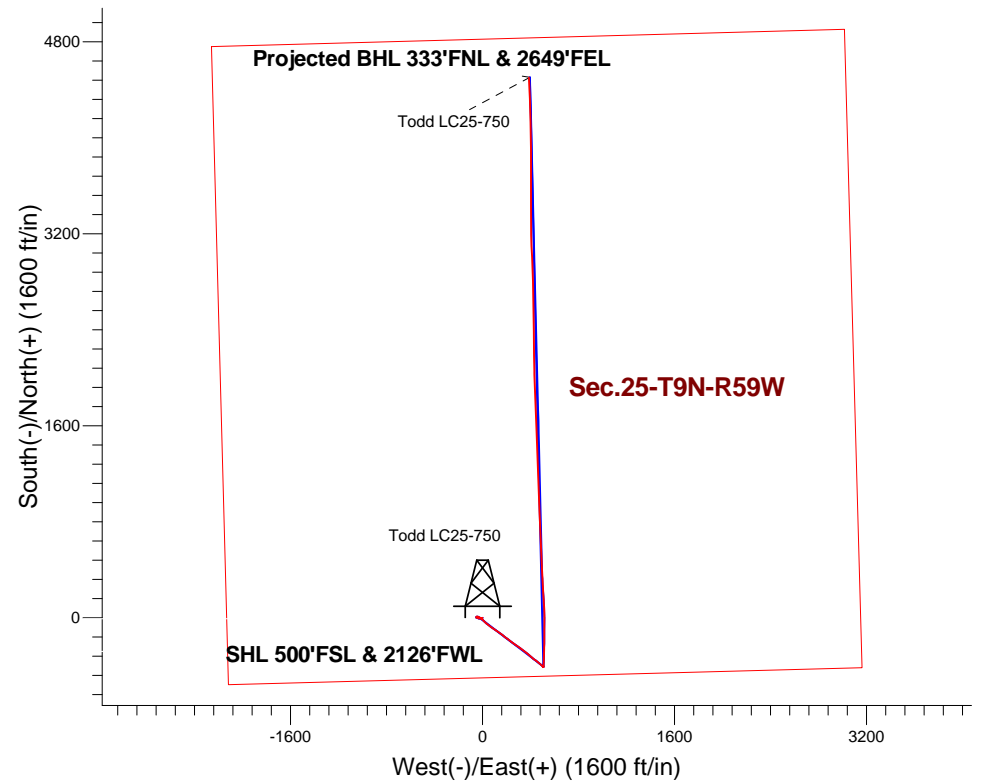
Ground Elevation: 4973.0

| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Slot |
|---|-------|------------|------------|-----------|-------------|------|
| 0.0 | 0.0 | 1507473.41 | 3435808.56 | 40.715800 | -103.927810 | |
| H&P 326 RKB - 30' WELL @ 5003.0ft (H&P 326 RKB - 30') | | | | | | |

FINAL SURVEY

Projected Bottom Hole Location
10865'MD 6100'TVD 4501'N & 385'E of SHL
90.5 degree Incl @ 357.5 degree AZM

05-123-40676



ENSIGN
Directional

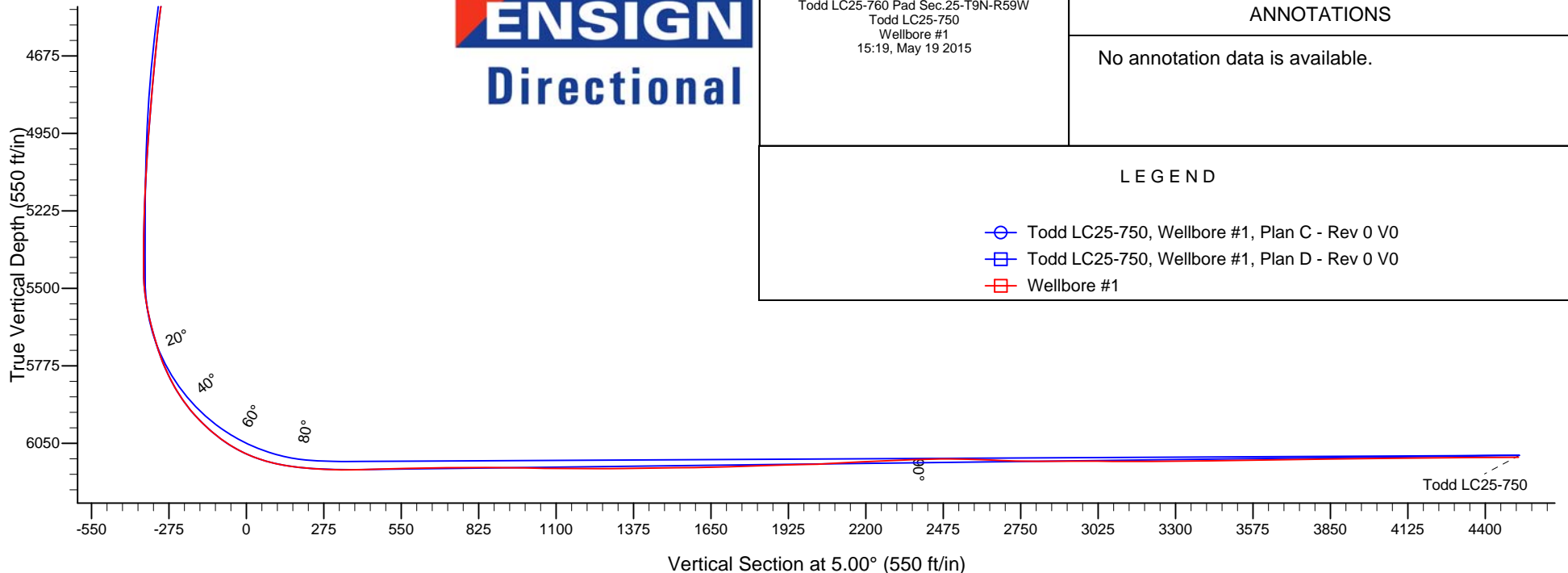
Todd LC25-760 Pad Sec.25-T9N-R59W
Todd LC25-750
Wellbore #1
15:19, May 19 2015

ANNOTATIONS

No annotation data is available.

LEGEND

- Todd LC25-750, Wellbore #1, Plan C - Rev 0 V0
- Todd LC25-750, Wellbore #1, Plan D - Rev 0 V0
- Wellbore #1





Noble Energy Inc.- Weld County, CO (Grid North)

Sec.25-T9N-R59W

Todd LC25-760 Pad Sec.25-T9N-R59W

Todd LC25-750

Wellbore #1

Design: Wellbore #1

Standard Survey Report

19 May, 2015

| | | | |
|------------------|---|-------------------------------------|-------------------------------------|
| Company: | Noble Energy Inc.- Weld County, CO (Grid North) | Local Co-ordinate Reference: | Well Todd LC25-750 |
| Project: | Sec.25-T9N-R59W | TVD Reference: | WELL @ 5003.0ft (H&P 326 RKB - 30') |
| Site: | Todd LC25-760 Pad Sec.25-T9N-R59W | MD Reference: | WELL @ 5003.0ft (H&P 326 RKB - 30') |
| Well: | Todd LC25-750 | North Reference: | Grid |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | Landmark |

| 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) |
| 1,000.0 | 3.16 | 269.38 | 999.6 | -5.7 | -21.6 | -7.6 | 0.51 | 0.43 | 5.43 |
| 1,100.0 | 3.45 | 273.72 | 1,099.4 | -5.5 | -27.4 | -7.9 | 0.38 | 0.29 | 4.34 |
| 1,200.0 | 3.48 | 282.02 | 1,199.3 | -4.7 | -33.3 | -7.6 | 0.50 | 0.03 | 8.30 |
| 1,300.0 | 2.93 | 284.36 | 1,299.1 | -3.4 | -38.8 | -6.8 | 0.57 | -0.55 | 2.34 |
| 1,357.0 | 2.78 | 289.19 | 1,356.0 | -2.6 | -41.5 | -6.2 | 0.50 | -0.26 | 8.47 |
| 1,583.0 | 1.67 | 296.84 | 1,581.9 | 0.7 | -49.6 | -3.7 | 0.51 | -0.49 | 3.38 |
| 1,676.0 | 1.19 | 294.29 | 1,674.8 | 1.7 | -51.7 | -2.8 | 0.52 | -0.52 | -2.74 |
| 1,768.0 | 0.92 | 292.79 | 1,766.8 | 2.4 | -53.2 | -2.3 | 0.29 | -0.29 | -1.63 |
| 1,860.0 | 2.42 | 3.55 | 1,858.8 | 4.6 | -53.8 | -0.1 | 2.49 | 1.63 | 76.91 |
| 1,952.0 | 2.68 | 48.11 | 1,950.7 | 8.0 | -52.1 | 3.4 | 2.12 | 0.28 | 48.43 |
| 2,045.0 | 3.74 | 77.38 | 2,043.6 | 10.1 | -47.5 | 5.9 | 2.06 | 1.14 | 31.47 |
| 2,137.0 | 3.95 | 102.60 | 2,135.4 | 10.0 | -41.5 | 6.4 | 1.84 | 0.23 | 27.41 |
| 2,230.0 | 5.27 | 117.98 | 2,228.1 | 7.3 | -34.6 | 4.3 | 1.93 | 1.42 | 16.54 |
| 2,322.0 | 7.69 | 118.35 | 2,319.5 | 2.4 | -25.4 | 0.2 | 2.63 | 2.63 | 0.40 |
| 2,413.0 | 9.40 | 124.80 | 2,409.4 | -4.7 | -14.0 | -5.9 | 2.15 | 1.88 | 7.09 |
| 2,506.0 | 11.10 | 132.00 | 2,501.0 | -15.0 | -1.1 | -15.1 | 2.29 | 1.83 | 7.74 |
| 2,600.0 | 13.01 | 136.29 | 2,592.9 | -28.7 | 12.9 | -27.5 | 2.24 | 2.03 | 4.56 |
| 2,692.0 | 14.64 | 132.31 | 2,682.2 | -44.1 | 28.7 | -41.4 | 2.05 | 1.77 | -4.33 |
| 2,785.0 | 14.59 | 129.76 | 2,772.2 | -59.5 | 46.4 | -55.2 | 0.69 | -0.05 | -2.74 |
| 2,877.0 | 16.00 | 126.86 | 2,861.0 | -74.5 | 65.5 | -68.5 | 1.74 | 1.53 | -3.15 |
| 2,972.0 | 15.43 | 124.22 | 2,952.4 | -89.4 | 86.4 | -81.6 | 0.96 | -0.60 | -2.78 |
| 3,067.0 | 14.72 | 122.37 | 3,044.1 | -103.0 | 107.0 | -93.3 | 0.90 | -0.75 | -1.95 |
| 3,162.0 | 15.60 | 122.82 | 3,135.8 | -116.4 | 128.0 | -104.8 | 0.93 | 0.93 | 0.47 |
| 3,256.0 | 16.04 | 126.89 | 3,226.3 | -131.0 | 149.0 | -117.6 | 1.27 | 0.47 | 4.33 |
| 3,350.0 | 15.69 | 128.71 | 3,316.7 | -146.8 | 169.3 | -131.5 | 0.65 | -0.37 | 1.94 |
| 3,445.0 | 15.69 | 127.82 | 3,408.2 | -162.7 | 189.4 | -145.6 | 0.25 | 0.00 | -0.94 |
| 3,539.0 | 16.00 | 127.39 | 3,498.6 | -178.4 | 209.8 | -159.4 | 0.35 | 0.33 | -0.46 |
| 3,634.0 | 16.10 | 126.90 | 3,589.9 | -194.2 | 230.7 | -173.4 | 0.18 | 0.11 | -0.52 |
| 3,728.0 | 16.26 | 126.59 | 3,680.2 | -209.9 | 251.7 | -187.1 | 0.19 | 0.17 | -0.33 |
| 3,823.0 | 16.22 | 125.36 | 3,771.4 | -225.5 | 273.2 | -200.8 | 0.36 | -0.04 | -1.29 |
| 4,012.0 | 15.07 | 124.00 | 3,953.4 | -254.5 | 315.1 | -226.1 | 0.64 | -0.61 | -0.72 |
| 4,107.0 | 13.80 | 125.50 | 4,045.4 | -268.0 | 334.6 | -237.8 | 1.39 | -1.34 | 1.58 |
| 4,201.0 | 14.10 | 130.90 | 4,136.6 | -282.0 | 352.3 | -250.2 | 1.42 | 0.32 | 5.74 |
| 4,296.0 | 15.20 | 129.80 | 4,228.5 | -297.5 | 370.7 | -264.1 | 1.19 | 1.16 | -1.16 |
| 4,391.0 | 13.80 | 128.00 | 4,320.5 | -312.5 | 389.2 | -277.4 | 1.55 | -1.47 | -1.89 |
| 4,486.0 | 14.90 | 131.70 | 4,412.5 | -327.6 | 407.2 | -290.9 | 1.51 | 1.16 | 3.89 |
| 4,580.0 | 13.41 | 130.02 | 4,503.7 | -342.6 | 424.6 | -304.3 | 1.64 | -1.59 | -1.79 |
| 4,675.0 | 11.78 | 126.77 | 4,596.4 | -355.5 | 440.8 | -315.8 | 1.87 | -1.72 | -3.42 |
| 4,770.0 | 11.08 | 123.17 | 4,689.5 | -366.3 | 456.2 | -325.2 | 1.05 | -0.74 | -3.79 |
| 4,864.0 | 8.48 | 128.88 | 4,782.1 | -375.6 | 469.1 | -333.3 | 2.95 | -2.77 | 6.07 |
| 4,959.0 | 7.34 | 139.60 | 4,876.2 | -384.6 | 478.5 | -341.5 | 1.96 | -1.20 | 11.28 |
| 5,053.0 | 6.29 | 133.98 | 4,969.5 | -392.8 | 486.1 | -348.9 | 1.32 | -1.12 | -5.98 |
| 5,148.0 | 5.58 | 130.29 | 5,064.0 | -399.4 | 493.4 | -354.9 | 0.85 | -0.75 | -3.88 |
| 5,242.0 | 4.84 | 127.83 | 5,157.6 | -404.8 | 500.0 | -359.7 | 0.82 | -0.79 | -2.62 |
| 5,337.0 | 2.51 | 134.33 | 5,252.4 | -408.7 | 504.7 | -363.2 | 2.49 | -2.45 | 6.84 |
| 5,432.0 | 0.75 | 127.12 | 5,347.4 | -410.5 | 506.7 | -364.8 | 1.86 | -1.85 | -7.59 |
| 5,527.0 | 0.09 | 98.03 | 5,442.4 | -410.9 | 507.2 | -365.1 | 0.71 | -0.69 | -30.62 |
| 5,621.0 | 8.79 | 6.97 | 5,536.0 | -403.8 | 508.2 | -358.0 | 9.35 | 9.26 | -96.87 |
| 5,715.0 | 14.07 | 0.83 | 5,628.1 | -385.2 | 509.2 | -339.4 | 5.76 | 5.62 | -6.53 |
| 5,810.0 | 18.20 | 3.90 | 5,719.4 | -358.9 | 510.4 | -313.0 | 4.44 | 4.35 | 3.23 |
| 5,905.0 | 25.58 | 0.30 | 5,807.5 | -323.5 | 511.5 | -277.7 | 7.89 | 7.77 | -3.79 |
| 5,999.0 | 33.98 | 0.74 | 5,889.0 | -276.8 | 512.0 | -231.2 | 8.94 | 8.94 | 0.47 |
| 6,094.0 | 43.90 | 1.60 | 5,962.8 | -217.2 | 513.2 | -171.7 | 10.46 | 10.44 | 0.91 |
| 6,188.0 | 51.64 | 359.33 | 6,025.9 | -147.7 | 513.7 | -102.4 | 8.42 | 8.23 | -2.41 |

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| Well: | Todd LC25-750 | North Reference: | Grid |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | Landmark |

| 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) |
| 6,283.0 | 63.03 | 1.27 | 6,077.1 | -67.9 | 514.2 | -22.8 | 12.11 | 11.99 | 2.04 |
| 6,377.0 | 73.36 | 358.63 | 6,112.0 | 19.3 | 514.1 | 64.0 | 11.29 | 10.99 | -2.81 |
| 6,472.0 | 82.51 | 357.75 | 6,131.8 | 112.0 | 511.1 | 156.2 | 9.67 | 9.63 | -0.93 |
| 6,532.0 | 84.84 | 354.85 | 6,138.4 | 171.5 | 507.3 | 215.1 | 6.18 | 3.88 | -4.83 |
| 6,635.0 | 88.97 | 357.05 | 6,144.0 | 274.1 | 500.0 | 316.6 | 4.54 | 4.01 | 2.14 |
| 6,727.0 | 91.52 | 357.84 | 6,143.6 | 366.0 | 495.9 | 407.8 | 2.90 | 2.77 | 0.86 |
| 6,820.0 | 91.78 | 358.19 | 6,140.9 | 458.9 | 492.7 | 500.1 | 0.47 | 0.28 | 0.38 |
| 6,912.0 | 90.42 | 357.40 | 6,139.2 | 550.8 | 489.1 | 591.4 | 1.71 | -1.48 | -0.86 |
| 7,007.0 | 91.39 | 357.93 | 6,137.7 | 645.7 | 485.3 | 685.6 | 1.16 | 1.02 | 0.56 |
| 7,196.0 | 89.45 | 357.49 | 6,136.3 | 834.6 | 477.7 | 873.0 | 1.05 | -1.03 | -0.23 |
| 7,290.0 | 88.66 | 356.52 | 6,137.8 | 928.4 | 472.8 | 966.1 | 1.33 | -0.84 | -1.03 |
| 7,384.0 | 89.45 | 358.10 | 6,139.4 | 1,022.3 | 468.4 | 1,059.2 | 1.88 | 0.84 | 1.68 |
| 7,479.0 | 89.85 | 357.93 | 6,140.0 | 1,117.3 | 465.1 | 1,153.5 | 0.46 | 0.42 | -0.18 |
| 7,573.0 | 89.71 | 357.22 | 6,140.3 | 1,211.2 | 461.1 | 1,246.7 | 0.77 | -0.15 | -0.76 |
| 7,667.0 | 90.98 | 358.63 | 6,139.7 | 1,305.1 | 457.7 | 1,340.0 | 2.02 | 1.35 | 1.50 |
| 7,762.0 | 90.90 | 358.18 | 6,138.2 | 1,400.0 | 455.1 | 1,434.4 | 0.48 | -0.08 | -0.47 |
| 7,857.0 | 90.15 | 357.31 | 6,137.3 | 1,495.0 | 451.3 | 1,528.6 | 1.21 | -0.79 | -0.92 |
| 7,951.0 | 91.38 | 357.66 | 6,136.1 | 1,588.9 | 447.2 | 1,621.8 | 1.36 | 1.31 | 0.37 |
| 8,045.0 | 92.08 | 358.97 | 6,133.2 | 1,682.8 | 444.5 | 1,715.1 | 1.58 | 0.74 | 1.39 |
| 8,140.0 | 91.64 | 358.54 | 6,130.1 | 1,777.7 | 442.4 | 1,809.5 | 0.65 | -0.46 | -0.45 |
| 8,235.0 | 91.56 | 358.19 | 6,127.5 | 1,872.6 | 439.7 | 1,903.8 | 0.38 | -0.08 | -0.37 |
| 8,329.0 | 91.30 | 356.61 | 6,125.1 | 1,966.5 | 435.4 | 1,997.0 | 1.70 | -0.28 | -1.68 |
| 8,423.0 | 93.49 | 358.37 | 6,121.2 | 2,060.3 | 431.3 | 2,090.1 | 2.99 | 2.33 | 1.87 |
| 8,611.0 | 91.96 | 359.77 | 6,112.3 | 2,248.1 | 428.3 | 2,276.8 | 1.10 | -0.81 | 0.74 |
| 8,706.0 | 92.66 | 359.42 | 6,108.4 | 2,343.0 | 427.6 | 2,371.3 | 0.82 | 0.74 | -0.37 |
| 8,800.0 | 90.33 | 359.51 | 6,106.0 | 2,437.0 | 426.7 | 2,464.9 | 2.48 | -2.48 | 0.10 |
| 8,895.0 | 88.53 | 358.63 | 6,106.9 | 2,531.9 | 425.2 | 2,559.4 | 2.11 | -1.89 | -0.93 |
| 8,990.0 | 87.74 | 358.10 | 6,110.0 | 2,626.8 | 422.5 | 2,653.7 | 1.00 | -0.83 | -0.56 |
| 9,084.0 | 88.40 | 359.68 | 6,113.2 | 2,720.8 | 420.6 | 2,747.1 | 1.82 | 0.70 | 1.68 |
| 9,179.0 | 90.59 | 359.07 | 6,114.0 | 2,815.7 | 419.6 | 2,841.6 | 2.39 | 2.31 | -0.64 |
| 9,273.0 | 90.11 | 357.93 | 6,113.5 | 2,909.7 | 417.1 | 2,935.0 | 1.32 | -0.51 | -1.21 |
| 9,368.0 | 89.14 | 356.61 | 6,114.1 | 3,004.6 | 412.6 | 3,029.1 | 1.72 | -1.02 | -1.39 |
| 9,462.0 | 90.24 | 357.48 | 6,114.6 | 3,098.5 | 407.8 | 3,122.2 | 1.49 | 1.17 | 0.93 |
| 9,556.0 | 90.11 | 358.27 | 6,114.3 | 3,192.4 | 404.3 | 3,215.5 | 0.85 | -0.14 | 0.84 |
| 9,651.0 | 90.90 | 0.91 | 6,113.5 | 3,287.4 | 403.6 | 3,310.1 | 2.90 | 0.83 | 2.78 |
| 9,840.0 | 90.37 | 359.51 | 6,111.4 | 3,476.4 | 404.3 | 3,498.4 | 0.79 | -0.28 | -0.74 |
| 9,934.0 | 90.98 | 359.51 | 6,110.3 | 3,570.4 | 403.5 | 3,591.9 | 0.65 | 0.65 | 0.00 |
| 10,028.0 | 90.98 | 359.69 | 6,108.7 | 3,664.3 | 402.8 | 3,685.5 | 0.19 | 0.00 | 0.19 |
| 10,122.0 | 90.90 | 0.21 | 6,107.1 | 3,758.3 | 402.8 | 3,779.1 | 0.56 | -0.09 | 0.55 |
| 10,217.0 | 90.80 | 359.70 | 6,105.7 | 3,853.3 | 402.7 | 3,873.8 | 0.55 | -0.11 | -0.54 |
| 10,312.0 | 90.80 | 359.29 | 6,104.4 | 3,948.3 | 401.8 | 3,968.3 | 0.43 | 0.00 | -0.43 |
| 10,406.0 | 90.33 | 359.33 | 6,103.5 | 4,042.3 | 400.7 | 4,061.8 | 0.50 | -0.50 | 0.04 |
| 10,501.0 | 90.59 | 358.89 | 6,102.7 | 4,137.3 | 399.2 | 4,156.3 | 0.54 | 0.27 | -0.46 |
| 10,596.0 | 90.70 | 358.10 | 6,101.6 | 4,232.2 | 396.7 | 4,250.7 | 0.84 | 0.12 | -0.83 |
| 10,690.0 | 90.19 | 357.39 | 6,100.9 | 4,326.2 | 393.0 | 4,344.0 | 0.93 | -0.54 | -0.76 |
| 10,803.0 | 90.46 | 357.49 | 6,100.2 | 4,439.1 | 388.0 | 4,456.0 | 0.25 | 0.24 | 0.09 |
| 10,865.0 | 90.46 | 357.49 | 6,099.7 | 4,501.0 | 385.3 | 4,517.4 | 0.00 | 0.00 | 0.00 |

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| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | Landmark |

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