

**GyroTracer Directional:**

Date: 7/21/2017  
 Operator : Brandon  
 Crew :  
 Well Number : HALL 31-12  
 Field : Noble  
 Tool Type And Number: 1613



Bottom Depth : 6900.00  
 Latitude : 40.45  
 Longitude : 104.82  
 Grid Offset : 0.44

**Starting Point Coordinates (in local grid):**

Northing: 0.00 Easting: 0.00 Altitude: 0.00

**Description:**

*Azimuth measured in degrees and referenced to local grid*

*Inclination measured from Vertical*

*Length measured in feet*

*Temperature measured in Fahrenheit degrees*

Start Time: 7/21/2017 10:46

End Time: 7/21/2017 12:37

| Depth   | Inclination | Azimuth | Closure<br>Direction | True Depth | Coordinates |        | Dogleg<br>Severity | Closure<br>Distance | Temp   |
|---------|-------------|---------|----------------------|------------|-------------|--------|--------------------|---------------------|--------|
|         |             |         |                      |            | +N/-S       | +E/-W  |                    |                     |        |
| 0.00    | 0.00        | 0.00    | 0.00                 | 0.00       | 0.00        | 0.00   | 0.00               | 0.00                | 0.00   |
| 100.00  | 0.15        | 330.80  | 220.92               | 100.00     | -0.10       | -0.08  | 0.38               | 0.13                | 103.49 |
| 200.00  | 0.04        | 289.80  | 294.22               | 200.00     | 0.12        | -0.26  | 0.12               | 0.28                | 101.16 |
| 300.00  | 0.10        | 25.17   | 295.22               | 300.00     | 0.23        | -0.50  | 0.12               | 0.55                | 98.81  |
| 400.00  | 0.33        | 229.68  | 287.77               | 400.00     | 0.26        | -0.80  | 0.40               | 0.84                | 96.48  |
| 500.00  | 0.32        | 220.70  | 270.68               | 500.00     | 0.01        | -1.20  | 0.09               | 1.20                | 94.26  |
| 600.00  | 0.27        | 196.81  | 255.78               | 600.00     | -0.38       | -1.50  | 0.13               | 1.54                | 91.99  |
| 700.00  | 0.46        | 182.60  | 241.33               | 699.99     | -0.88       | -1.60  | 0.23               | 1.82                | 83.91  |
| 800.00  | 0.46        | 181.25  | 227.96               | 799.99     | -1.41       | -1.56  | 0.04               | 2.10                | 82.93  |
| 900.00  | 0.28        | 163.29  | 216.07               | 899.99     | -1.92       | -1.40  | 0.14               | 2.37                | 82.06  |
| 1000.00 | 0.27        | 142.77  | 206.55               | 999.99     | -2.37       | -1.18  | 0.11               | 2.65                | 81.40  |
| 1100.00 | 0.26        | 143.95  | 197.96               | 1099.99    | -2.83       | -0.92  | 0.10               | 2.98                | 81.01  |
| 1200.00 | 0.26        | 147.42  | 190.95               | 1199.99    | -3.27       | -0.63  | 0.19               | 3.34                | 80.73  |
| 1300.00 | 0.26        | 199.73  | 185.86               | 1299.98    | -3.74       | -0.38  | 0.23               | 3.76                | 81.27  |
| 1400.00 | 0.28        | 246.48  | 186.88               | 1399.98    | -4.21       | -0.51  | 0.20               | 4.24                | 81.47  |
| 1500.00 | 0.41        | 252.77  | 192.41               | 1499.98    | -4.62       | -1.02  | 0.17               | 4.73                | 81.84  |
| 1600.00 | 0.74        | 240.91  | 199.16               | 1599.98    | -4.91       | -1.71  | 0.36               | 5.20                | 82.43  |
| 1700.00 | 0.73        | 248.41  | 207.05               | 1699.97    | -5.19       | -2.65  | 0.15               | 5.82                | 83.23  |
| 1800.00 | 0.76        | 263.37  | 215.58               | 1799.96    | -5.37       | -3.84  | 0.20               | 6.60                | 84.13  |
| 1900.00 | 0.86        | 277.40  | 222.96               | 1899.95    | -5.56       | -5.17  | 0.25               | 7.59                | 89.70  |
| 2000.00 | 0.84        | 280.58  | 229.95               | 1999.94    | -5.58       | -6.64  | 0.05               | 8.68                | 90.60  |
| 2100.00 | 0.95        | 253.32  | 235.18               | 2099.93    | -5.70       | -8.19  | 0.38               | 9.98                | 91.66  |
| 2200.00 | 1.05        | 257.28  | 239.31               | 2199.92    | -5.79       | -9.75  | 0.11               | 11.34               | 92.89  |
| 2300.00 | 1.04        | 266.59  | 242.62               | 2299.90    | -5.98       | -11.54 | 0.07               | 13.00               | 94.32  |

|         |      |        |        |         |       |        |      |       |        |
|---------|------|--------|--------|---------|-------|--------|------|-------|--------|
| 2400.00 | 1.25 | 281.99 | 245.93 | 2399.88 | -6.05 | -13.55 | 0.43 | 14.84 | 95.88  |
| 2500.00 | 1.26 | 247.10 | 248.14 | 2499.86 | -6.25 | -15.59 | 0.78 | 16.80 | 103.32 |
| 2600.00 | 1.12 | 282.20 | 251.28 | 2599.84 | -5.97 | -17.60 | 0.71 | 18.59 | 104.40 |
| 2700.00 | 0.96 | 271.08 | 253.16 | 2699.82 | -5.92 | -19.55 | 0.22 | 20.43 | 105.64 |
| 2800.00 | 0.97 | 263.41 | 254.50 | 2799.81 | -5.87 | -21.17 | 0.10 | 21.97 | 106.94 |
| 2900.00 | 0.62 | 257.86 | 255.22 | 2899.80 | -5.93 | -22.48 | 0.25 | 23.25 | 108.35 |
| 3000.00 | 0.46 | 279.18 | 256.14 | 2999.79 | -5.82 | -23.58 | 0.24 | 24.28 | 109.92 |
| 3100.00 | 0.84 | 282.73 | 257.06 | 3099.78 | -5.65 | -24.62 | 0.40 | 25.26 | 117.56 |
| 3200.00 | 0.75 | 283.06 | 258.03 | 3199.78 | -5.44 | -25.67 | 0.08 | 26.24 | 118.72 |
| 3300.00 | 0.65 | 273.88 | 258.81 | 3299.77 | -5.29 | -26.76 | 0.15 | 27.27 | 120.09 |
| 3400.00 | 0.99 | 266.11 | 259.49 | 3399.76 | -5.21 | -28.06 | 0.36 | 28.54 | 121.64 |
| 3500.00 | 0.96 | 270.05 | 260.13 | 3499.75 | -5.18 | -29.76 | 0.12 | 30.21 | 123.24 |
| 3600.00 | 1.04 | 263.65 | 260.82 | 3599.73 | -5.10 | -31.53 | 0.13 | 31.94 | 124.91 |
| 3700.00 | 1.12 | 292.90 | 261.95 | 3699.71 | -4.72 | -33.36 | 0.69 | 33.69 | 132.71 |
| 3800.00 | 1.26 | 273.44 | 263.01 | 3799.69 | -4.33 | -35.27 | 0.43 | 35.53 | 133.92 |
| 3900.00 | 0.91 | 286.88 | 264.09 | 3899.68 | -3.84 | -37.09 | 0.39 | 37.29 | 135.21 |
| 4000.00 | 1.18 | 283.72 | 265.22 | 3999.66 | -3.25 | -38.90 | 0.27 | 39.03 | 136.55 |
| 4100.00 | 0.81 | 285.99 | 265.95 | 4099.64 | -2.87 | -40.49 | 0.36 | 40.59 | 138.08 |
| 4200.00 | 0.86 | 268.91 | 266.45 | 4199.63 | -2.60 | -41.87 | 0.21 | 41.95 | 139.64 |
| 4300.00 | 0.79 | 281.74 | 266.77 | 4299.63 | -2.43 | -43.07 | 0.13 | 43.14 | 147.27 |
| 4400.00 | 0.53 | 334.18 | 267.36 | 4399.62 | -2.02 | -43.76 | 0.42 | 43.81 | 148.48 |
| 4500.00 | 0.41 | 40.41  | 268.25 | 4499.62 | -1.33 | -43.75 | 0.47 | 43.77 | 149.77 |
| 4600.00 | 0.37 | 55.78  | 269.31 | 4599.61 | -0.52 | -43.23 | 0.11 | 43.24 | 151.13 |
| 4700.00 | 0.58 | 20.57  | 270.42 | 4699.61 | 0.31  | -42.69 | 0.35 | 42.69 | 152.70 |
| 4800.00 | 0.55 | 2.10   | 271.54 | 4799.60 | 1.14  | -42.13 | 0.24 | 42.15 | 160.52 |
| 4900.00 | 0.50 | 20.04  | 272.70 | 4899.60 | 1.97  | -41.81 | 0.20 | 41.86 | 161.74 |
| 5000.00 | 0.26 | 350.73 | 273.65 | 4999.60 | 2.66  | -41.78 | 0.38 | 41.86 | 163.33 |
| 5100.00 | 0.29 | 338.08 | 274.30 | 5099.59 | 3.16  | -41.96 | 0.07 | 42.08 | 165.06 |
| 5200.00 | 0.27 | 284.98 | 274.51 | 5199.59 | 3.34  | -42.41 | 0.22 | 42.54 | 166.82 |
| 5300.00 | 0.73 | 256.87 | 274.24 | 5299.59 | 3.20  | -43.15 | 0.44 | 43.27 | 168.87 |
| 5400.00 | 0.59 | 263.16 | 273.61 | 5399.58 | 2.78  | -44.11 | 0.12 | 44.20 | 178.95 |
| 5500.00 | 0.93 | 232.95 | 273.18 | 5499.58 | 2.51  | -45.18 | 0.51 | 45.25 | 180.41 |
| 5600.00 | 0.51 | 250.51 | 272.43 | 5599.57 | 1.96  | -46.08 | 0.32 | 46.12 | 182.03 |
| 5700.00 | 0.60 | 207.74 | 271.69 | 5699.57 | 1.38  | -46.62 | 0.41 | 46.64 | 183.79 |
| 5800.00 | 0.50 | 189.07 | 270.89 | 5799.56 | 0.73  | -46.78 | 0.18 | 46.78 | 185.73 |
| 5900.00 | 0.45 | 186.92 | 270.05 | 5899.56 | 0.04  | -46.73 | 0.08 | 46.73 | 187.81 |
| 6000.00 | 0.62 | 152.95 | 269.09 | 5999.56 | -0.74 | -46.57 | 0.35 | 46.58 | 198.20 |
| 6100.00 | 0.36 | 182.00 | 268.06 | 6099.55 | -1.58 | -46.48 | 0.35 | 46.51 | 199.58 |
| 6200.00 | 0.61 | 180.74 | 266.82 | 6199.55 | -2.57 | -46.32 | 0.26 | 46.39 | 201.12 |
| 6300.00 | 0.39 | 241.03 | 266.13 | 6299.55 | -3.15 | -46.48 | 0.52 | 46.58 | 202.77 |
| 6400.00 | 0.31 | 342.94 | 266.54 | 6399.54 | -2.84 | -46.95 | 0.50 | 47.04 | 204.54 |
| 6500.00 | 0.68 | 308.07 | 267.47 | 6499.54 | -2.10 | -47.51 | 0.24 | 47.56 | 206.52 |
| 6600.00 | 0.80 | 314.75 | 268.55 | 6599.53 | -1.22 | -48.12 | 0.38 | 48.13 | 216.49 |
| 6700.00 | 0.67 | 328.48 | 269.38 | 6699.53 | -0.53 | -48.86 | 0.08 | 48.86 | 217.88 |
| 6800.00 | 0.49 | 302.97 | 270.08 | 6799.52 | 0.07  | -49.46 | 0.29 | 49.46 | 219.50 |
| 6900.00 | 0.30 | 286.22 | 270.71 | 6899.52 | 0.61  | -49.70 | 0.23 | 49.70 | 221.18 |
| 6901.88 | 0.44 | 347.80 | 270.72 | 6901.40 | 0.62  | -49.71 | 0.09 | 49.71 | 221.24 |