

**GyroTracer Directional:**

Date: 11/28/2018  
 Operator : Adrian Bruner  
 API: 05-123-30892  
 Well Name: **Lockman C 14-30**  
 Field : Noble Energy Inc  
 Tool Type And Number: 1719  
 Bottom Depth : 6700.00  
 Total Well Depth: 6963.00  
 Latitude : 40.320651 N  
 Longitude : 104.528093 W  
 Grid Offset : 0.63

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

Northing: 0.00      Easting: 0.00      Altitude: 4636.00

**Description:**

*Azimuth measured in degrees and referenced to local grid*

*Inclination measured from Vertical*

*Length measured in US survey feet*

Start Time: 11/28/2018 12:58

End Time: 11/28/2018 14:01

| Depth    | Inclination | Azimuth | Closure<br>Direction | True Depth | Coordinates |        | Dogleg<br>Severity | Closure<br>Distance |
|----------|-------------|---------|----------------------|------------|-------------|--------|--------------------|---------------------|
|          |             |         |                      |            | +N/-S       | +E/-W  |                    |                     |
| 0.000    | 0.000       | 0.000   | 0.000                | 0.000      | 0.000       | 0.000  | 0.000              | 0.000               |
| 100.000  | 0.540       | 334.602 | 298.996              | 100.530    | 0.460       | -0.830 | 0.537              | 0.949               |
| 200.000  | 0.205       | 167.406 | 325.351              | 199.997    | 0.927       | -0.641 | 0.746              | 1.127               |
| 300.000  | 0.303       | 117.784 | 336.773              | 299.995    | 1.087       | -0.466 | 0.194              | 1.182               |
| 400.000  | 0.282       | 353.596 | 344.521              | 399.994    | 1.188       | -0.329 | 0.550              | 1.233               |
| 500.000  | 0.496       | 317.014 | 340.119              | 499.991    | 1.775       | -0.642 | 0.285              | 1.887               |
| 600.000  | 0.575       | 276.340 | 333.864              | 599.985    | 2.534       | -1.243 | 0.276              | 2.822               |
| 700.000  | 0.372       | 210.503 | 318.468              | 699.980    | 2.321       | -2.056 | 0.503              | 3.101               |
| 800.000  | 0.554       | 248.187 | 301.029              | 799.973    | 1.760       | -2.926 | 0.359              | 3.414               |
| 900.000  | 1.125       | 210.065 | 281.314              | 899.963    | 0.757       | -3.783 | 0.753              | 3.858               |
| 1000.000 | 0.813       | 204.867 | 262.959              | 999.950    | -0.583      | -4.718 | 0.494              | 4.753               |
| 1100.000 | 0.748       | 204.827 | 252.234              | 1099.937   | -1.795      | -5.603 | 0.197              | 5.883               |
| 1200.000 | 0.545       | 262.270 | 248.518              | 1199.927   | -2.592      | -6.586 | 0.887              | 7.078               |
| 1300.000 | 0.431       | 262.109 | 246.713              | 1299.921   | -3.179      | -7.386 | 0.046              | 8.041               |
| 1400.000 | 0.829       | 221.156 | 243.466              | 1399.916   | -3.932      | -7.875 | 0.783              | 8.802               |
| 1500.000 | 0.776       | 217.184 | 241.498              | 1499.911   | -4.609      | -8.489 | 0.311              | 9.659               |
| 1600.000 | 0.483       | 243.041 | 239.990              | 1599.906   | -5.246      | -9.083 | 0.379              | 10.490              |
| 1700.000 | 0.499       | 50.462  | 240.003              | 1699.906   | -5.280      | -9.146 | 0.983              | 10.561              |
| 1800.000 | 0.080       | 79.928  | 240.390              | 1799.903   | -4.984      | -8.771 | 0.426              | 10.088              |
| 1900.000 | 0.497       | 341.992 | 244.093              | 1899.899   | -4.301      | -8.855 | 0.503              | 9.845               |
| 2000.000 | 0.391       | 338.552 | 250.108              | 1999.893   | -3.322      | -9.182 | 0.075              | 9.765               |
| 2100.000 | 0.498       | 346.707 | 256.440              | 2099.887   | -2.294      | -9.512 | 0.127              | 9.784               |
| 2200.000 | 0.750       | 341.361 | 263.477              | 2199.878   | -1.111      | -9.713 | 0.155              | 9.777               |
| 2300.000 | 1.228       | 23.381  | 272.886              | 2299.862   | 0.456       | -9.049 | 0.819              | 9.060               |

|          |       |         |         |          |        |         |       |        |
|----------|-------|---------|---------|----------|--------|---------|-------|--------|
| 2400.000 | 1.281 | 16.838  | 284.836 | 2399.841 | 2.086  | -7.877  | 0.186 | 8.148  |
| 2500.000 | 0.903 | 19.582  | 294.720 | 2499.829 | 3.469  | -7.535  | 0.311 | 8.295  |
| 2600.000 | 1.091 | 337.417 | 301.794 | 2599.820 | 4.714  | -7.604  | 0.736 | 8.947  |
| 2700.000 | 1.125 | 344.122 | 306.920 | 2699.808 | 6.116  | -8.140  | 0.132 | 10.182 |
| 2800.000 | 0.873 | 0.168   | 311.466 | 2799.794 | 7.620  | -8.623  | 0.286 | 11.508 |
| 2900.000 | 0.385 | 355.500 | 315.384 | 2899.787 | 8.719  | -8.603  | 0.437 | 12.249 |
| 3000.000 | 0.581 | 340.624 | 319.789 | 2999.780 | 9.695  | -8.196  | 0.296 | 12.695 |
| 3100.000 | 0.527 | 318.607 | 322.145 | 3099.775 | 10.548 | -8.198  | 0.238 | 13.359 |
| 3200.000 | 0.659 | 304.800 | 323.336 | 3199.768 | 11.553 | -8.600  | 0.206 | 14.403 |
| 3300.000 | 0.602 | 304.019 | 323.159 | 3299.759 | 12.512 | -9.374  | 0.154 | 15.634 |
| 3400.000 | 0.688 | 267.048 | 319.275 | 3399.749 | 12.430 | -10.701 | 0.391 | 16.402 |
| 3500.000 | 1.088 | 230.138 | 313.651 | 3499.727 | 12.105 | -12.688 | 0.574 | 17.536 |
| 3600.000 | 1.267 | 231.366 | 306.819 | 3599.700 | 10.998 | -14.691 | 0.183 | 18.352 |
| 3700.000 | 1.540 | 252.708 | 300.199 | 3699.667 | 9.847  | -16.919 | 0.623 | 19.576 |
| 3800.000 | 1.686 | 233.575 | 293.839 | 3799.627 | 8.572  | -19.399 | 0.668 | 21.209 |
| 3900.000 | 1.979 | 236.738 | 288.144 | 3899.581 | 7.234  | -22.075 | 0.294 | 23.230 |
| 4000.000 | 1.993 | 250.411 | 282.614 | 3999.520 | 5.613  | -25.080 | 0.512 | 25.700 |
| 4100.000 | 2.149 | 251.048 | 278.024 | 4099.444 | 4.034  | -28.614 | 0.212 | 28.897 |
| 4200.000 | 1.998 | 300.316 | 275.837 | 4199.356 | 3.333  | -32.604 | 1.772 | 32.774 |
| 4300.000 | 1.850 | 335.361 | 280.120 | 4299.273 | 6.294  | -35.267 | 1.297 | 35.824 |
| 4400.000 | 0.942 | 185.243 | 281.464 | 4399.254 | 7.243  | -35.713 | 2.731 | 36.440 |
| 4500.000 | 1.124 | 198.045 | 278.066 | 4499.228 | 5.071  | -35.781 | 0.318 | 36.139 |
| 4600.000 | 0.366 | 198.594 | 275.403 | 4599.212 | 3.392  | -35.860 | 0.736 | 36.020 |
| 4700.000 | 0.794 | 86.691  | 274.728 | 4699.204 | 2.886  | -34.892 | 1.072 | 35.011 |
| 4800.000 | 0.527 | 121.428 | 274.451 | 4799.199 | 2.655  | -34.104 | 0.600 | 34.207 |
| 4900.000 | 0.580 | 106.545 | 274.145 | 4899.197 | 2.444  | -33.725 | 0.278 | 33.813 |
| 5000.000 | 0.364 | 160.605 | 273.623 | 4999.194 | 2.117  | -33.430 | 0.395 | 33.497 |
| 5100.000 | 0.292 | 33.513  | 273.231 | 5099.192 | 1.873  | -33.183 | 0.364 | 33.236 |
| 5200.000 | 0.216 | 218.154 | 272.552 | 5199.189 | 1.482  | -33.255 | 0.377 | 33.288 |
| 5300.000 | 0.498 | 116.676 | 272.065 | 5299.186 | 1.214  | -33.689 | 0.450 | 33.711 |
| 5400.000 | 0.860 | 160.760 | 270.690 | 5399.180 | 0.402  | -33.369 | 0.525 | 33.372 |
| 5500.000 | 0.335 | 42.438  | 269.079 | 5499.175 | -0.535 | -33.264 | 1.101 | 33.268 |
| 5600.000 | 0.409 | 162.945 | 267.446 | 5599.168 | -1.485 | -33.308 | 0.253 | 33.341 |
| 5700.000 | 0.539 | 215.485 | 266.006 | 5699.163 | -2.342 | -33.535 | 0.594 | 33.617 |
| 5800.000 | 0.644 | 184.624 | 265.039 | 5799.159 | -2.917 | -33.606 | 0.355 | 33.733 |
| 5900.000 | 0.503 | 252.292 | 264.149 | 5899.156 | -3.448 | -33.647 | 0.604 | 33.823 |
| 6000.000 | 0.580 | 233.404 | 263.396 | 5999.153 | -3.912 | -33.793 | 0.220 | 34.018 |
| 6100.000 | 0.114 | 58.348  | 262.923 | 6099.151 | -4.215 | -33.952 | 0.763 | 34.213 |
| 6200.000 | 0.559 | 194.118 | 262.476 | 6199.149 | -4.493 | -34.022 | 0.585 | 34.317 |
| 6300.000 | 0.402 | 231.412 | 262.031 | 6299.146 | -4.783 | -34.167 | 0.220 | 34.500 |
| 6400.000 | 0.217 | 302.635 | 261.431 | 6399.143 | -5.158 | -34.230 | 0.494 | 34.617 |
| 6500.000 | 0.258 | 252.374 | 260.453 | 6499.140 | -5.758 | -34.234 | 0.187 | 34.715 |
| 6600.000 | 0.149 | 208.588 | 259.455 | 6599.137 | -6.356 | -34.141 | 0.297 | 34.727 |
| 6700.000 | 0.340 | 206.690 | 258.659 | 6699.134 | -6.855 | -34.178 | 0.194 | 34.858 |