



**Company:** Noble Energy  
**Rig:** Production/Coretech  
**API #** 05-123-20058  
**Date:** 5-16-14  
**Surveyor:** Justin Williams  
**VS:** 0.000  
**Lat :** 40.336  
**Long:** -104.804

**Well:** Daniels K05-14X  
**Location:** Weld County, Colorado  
**North Reference:** GRID  
**Convergence:** GRID North is 0.45 De  
**Declination:** 8.49  
**Depth Reference:** RKB = Ground Level  
**Elevation:** 4699  
**Total Depth as Drilled:** 7320

**Lat & Long obtained by handheld GPS at wellhead**

MS Gyro Survey Calculations

| Depth    | Inc   | AzG     | N/-S    | E/-W   | TVD      | DL    | VS      | CD     |
|----------|-------|---------|---------|--------|----------|-------|---------|--------|
| 0.000    | 0.000 | 0.000   | 0.000   | 0.000  | 0.000    | 0.000 | 0.000   | 0.000  |
| 100.000  | 0.049 | 198.844 | -0.040  | -0.014 | 100.000  | 0.049 | -0.040  | 0.042  |
| 200.000  | 0.129 | 157.293 | -0.184  | 0.016  | 200.000  | 0.098 | -0.184  | 0.185  |
| 300.000  | 0.193 | 37.275  | -0.153  | 0.161  | 300.000  | 0.280 | -0.153  | 0.223  |
| 400.000  | 0.301 | 30.564  | 0.207   | 0.397  | 399.999  | 0.112 | 0.207   | 0.448  |
| 500.000  | 0.305 | 26.672  | 0.671   | 0.650  | 499.997  | 0.021 | 0.671   | 0.934  |
| 600.000  | 0.289 | 33.027  | 1.120   | 0.907  | 599.996  | 0.036 | 1.120   | 1.441  |
| 700.000  | 0.319 | 48.775  | 1.515   | 1.254  | 699.995  | 0.088 | 1.515   | 1.967  |
| 800.000  | 0.294 | 43.738  | 1.884   | 1.640  | 799.993  | 0.037 | 1.884   | 2.498  |
| 900.000  | 0.327 | 47.405  | 2.262   | 2.027  | 899.992  | 0.039 | 2.262   | 3.037  |
| 1000.000 | 0.340 | 16.326  | 2.740   | 2.321  | 999.990  | 0.179 | 2.740   | 3.591  |
| 1100.000 | 0.370 | 32.620  | 3.297   | 2.578  | 1099.988 | 0.105 | 3.297   | 4.186  |
| 1200.000 | 0.369 | 66.667  | 3.697   | 3.048  | 1199.986 | 0.216 | 3.697   | 4.792  |
| 1300.000 | 0.247 | 310.180 | 3.963   | 3.180  | 1299.985 | 0.528 | 3.963   | 5.081  |
| 1400.000 | 0.253 | 262.034 | 4.072   | 2.796  | 1399.985 | 0.204 | 4.072   | 4.939  |
| 1500.000 | 0.277 | 188.200 | 3.801   | 2.543  | 1499.984 | 0.319 | 3.801   | 4.573  |
| 1600.000 | 0.379 | 269.018 | 3.556   | 2.178  | 1599.983 | 0.432 | 3.556   | 4.170  |
| 1700.000 | 0.288 | 288.801 | 3.631   | 1.609  | 1699.981 | 0.145 | 3.631   | 3.972  |
| 1800.000 | 0.491 | 169.091 | 3.292   | 1.452  | 1799.980 | 0.682 | 3.292   | 3.598  |
| 1900.000 | 0.552 | 184.359 | 2.390   | 1.496  | 1899.975 | 0.151 | 2.390   | 2.820  |
| 2000.000 | 0.726 | 135.018 | 1.461   | 1.908  | 1999.970 | 0.556 | 1.461   | 2.403  |
| 2100.000 | 0.840 | 163.066 | 0.312   | 2.569  | 2099.961 | 0.395 | 0.312   | 2.588  |
| 2200.000 | 0.844 | 185.178 | -1.123  | 2.716  | 2199.950 | 0.323 | -1.123  | 2.939  |
| 2300.000 | 0.999 | 194.198 | -2.702  | 2.435  | 2299.937 | 0.212 | -2.702  | 3.638  |
| 2400.000 | 0.769 | 210.876 | -4.123  | 1.877  | 2399.926 | 0.343 | -4.123  | 4.531  |
| 2500.000 | 0.775 | 215.958 | -5.246  | 1.136  | 2499.917 | 0.069 | -5.246  | 5.368  |
| 2600.000 | 0.851 | 213.884 | -6.410  | 0.325  | 2599.907 | 0.082 | -6.410  | 6.418  |
| 2700.000 | 0.674 | 215.460 | -7.506  | -0.430 | 2699.898 | 0.179 | -7.506  | 7.518  |
| 2800.000 | 0.679 | 202.560 | -8.532  | -0.999 | 2799.891 | 0.152 | -8.532  | 8.590  |
| 2900.000 | 0.618 | 194.278 | -9.602  | -1.359 | 2899.884 | 0.112 | -9.602  | 9.698  |
| 3000.000 | 0.489 | 188.452 | -10.547 | -1.555 | 2999.880 | 0.141 | -10.547 | 10.661 |
| 3100.000 | 0.605 | 168.870 | -11.486 | -1.516 | 3099.875 | 0.218 | -11.486 | 11.586 |
| 3200.000 | 0.808 | 113.633 | -12.287 | -0.768 | 3199.869 | 0.679 | -12.287 | 12.311 |
| 3300.000 | 1.174 | 87.033  | -12.517 | 0.901  | 3299.854 | 0.578 | -12.517 | 12.549 |
| 3400.000 | 1.307 | 82.419  | -12.313 | 3.054  | 3399.831 | 0.167 | -12.313 | 12.686 |
| 3500.000 | 1.223 | 58.284  | -11.601 | 5.093  | 3499.807 | 0.535 | -11.601 | 12.670 |

|          |       |         |         |        |          |       |         |        |
|----------|-------|---------|---------|--------|----------|-------|---------|--------|
| 3600.000 | 0.944 | 89.399  | -11.031 | 6.825  | 3599.790 | 0.641 | -11.031 | 12.972 |
| 3700.000 | 0.905 | 93.605  | -11.072 | 8.437  | 3699.777 | 0.078 | -11.072 | 13.921 |
| 3800.000 | 0.994 | 97.032  | -11.228 | 10.087 | 3799.763 | 0.106 | -11.228 | 15.094 |
| 3900.000 | 1.193 | 93.756  | -11.403 | 11.986 | 3899.745 | 0.208 | -11.403 | 16.544 |
| 4000.000 | 1.879 | 102.191 | -11.817 | 14.627 | 3999.708 | 0.720 | -11.817 | 18.804 |
| 4100.000 | 2.249 | 110.220 | -12.841 | 18.070 | 4099.644 | 0.469 | -12.841 | 22.169 |
| 4200.000 | 1.952 | 106.534 | -14.004 | 21.544 | 4199.576 | 0.326 | -14.004 | 25.696 |
| 4300.000 | 1.490 | 111.547 | -14.966 | 24.386 | 4299.531 | 0.486 | -14.966 | 28.612 |
| 4400.000 | 1.147 | 114.849 | -15.864 | 26.503 | 4399.504 | 0.351 | -15.864 | 30.889 |
| 4500.000 | 1.334 | 136.406 | -17.128 | 28.214 | 4499.481 | 0.499 | -17.128 | 33.007 |
| 4600.000 | 1.341 | 145.891 | -18.940 | 29.673 | 4599.454 | 0.221 | -18.940 | 35.203 |
| 4700.000 | 1.319 | 141.518 | -20.810 | 31.046 | 4699.427 | 0.104 | -20.810 | 37.375 |
| 4800.000 | 1.187 | 140.855 | -22.514 | 32.415 | 4799.403 | 0.132 | -22.514 | 39.467 |
| 4900.000 | 1.000 | 145.314 | -24.035 | 33.566 | 4899.385 | 0.205 | -24.035 | 41.284 |
| 5000.000 | 0.695 | 130.021 | -25.142 | 34.527 | 4999.374 | 0.377 | -25.142 | 42.711 |
| 5100.000 | 0.172 | 116.412 | -25.599 | 35.126 | 5099.371 | 0.530 | -25.599 | 43.464 |
| 5200.000 | 0.409 | 46.508  | -25.420 | 35.519 | 5199.370 | 0.386 | -25.420 | 43.678 |
| 5300.000 | 0.541 | 9.379   | -24.708 | 35.855 | 5299.367 | 0.327 | -24.708 | 43.544 |
| 5400.000 | 0.581 | 46.520  | -23.894 | 36.300 | 5399.362 | 0.359 | -23.894 | 43.458 |
| 5500.000 | 0.658 | 71.671  | -23.364 | 37.212 | 5499.357 | 0.280 | -23.364 | 43.939 |
| 5600.000 | 0.845 | 107.705 | -23.408 | 38.459 | 5599.348 | 0.498 | -23.408 | 45.023 |
| 5700.000 | 0.708 | 78.867  | -23.513 | 39.768 | 5699.340 | 0.409 | -23.513 | 46.199 |
| 5800.000 | 0.699 | 30.361  | -22.868 | 40.682 | 5799.333 | 0.578 | -22.868 | 46.668 |
| 5900.000 | 1.016 | 31.445  | -21.586 | 41.452 | 5899.322 | 0.317 | -21.586 | 46.736 |
| 6000.000 | 1.319 | 44.150  | -20.004 | 42.716 | 5999.301 | 0.397 | -20.004 | 47.168 |
| 6100.000 | 1.639 | 45.000  | -18.166 | 44.529 | 6099.267 | 0.321 | -18.166 | 48.093 |
| 6200.000 | 1.721 | 36.122  | -15.942 | 46.426 | 6199.225 | 0.272 | -15.942 | 49.087 |
| 6300.000 | 1.679 | 44.267  | -13.681 | 48.333 | 6299.181 | 0.245 | -13.681 | 50.232 |
| 6400.000 | 2.178 | 23.879  | -10.894 | 50.125 | 6399.125 | 0.841 | -10.894 | 51.295 |
| 6500.000 | 2.612 | 32.647  | -7.237  | 52.124 | 6499.038 | 0.567 | -7.237  | 52.624 |
| 6600.000 | 2.695 | 46.073  | -3.688  | 55.046 | 6598.931 | 0.626 | -3.688  | 55.170 |
| 6700.000 | 3.122 | 44.045  | -0.100  | 58.632 | 6698.802 | 0.439 | -0.100  | 58.632 |
| 6800.000 | 3.391 | 49.491  | 3.779   | 62.774 | 6798.641 | 0.410 | 3.779   | 62.887 |
| 6900.000 | 3.190 | 49.941  | 7.490   | 67.152 | 6898.476 | 0.202 | 7.490   | 67.568 |
| 7000.000 | 3.100 | 48.547  | 11.071  | 71.308 | 6998.326 | 0.118 | 11.071  | 72.163 |
| 7050.000 | 3.583 | 47.045  | 13.031  | 73.465 | 7048.241 | 0.981 | 13.031  | 74.612 |

0

degrees East of True North

**Cbrg**

0.000  
198.844  
175.068  
133.572  
62.464  
44.093  
38.994  
39.606  
41.047  
41.870  
40.264  
38.025  
39.508  
38.738  
34.479  
33.778  
31.481  
23.895  
23.802  
32.050  
52.546  
83.073  
112.461  
137.971  
155.522  
167.783  
177.099  
183.282  
186.678  
188.057  
188.387  
187.517  
183.577  
175.885  
166.070  
156.299

148.255  
142.693  
138.066  
133.571  
128.935  
125.399  
123.025  
121.539  
120.904  
121.261  
122.550  
123.834  
124.781  
125.604  
126.062  
126.084  
125.590  
124.571  
123.354  
122.124  
121.327  
120.595  
119.341  
117.508  
115.093  
112.194  
108.952  
105.804  
102.262  
97.905  
93.833  
90.097  
86.555  
83.635  
81.175  
79.942