



**Company:** Noble Energy  
**Rig:** Production/Coretech  
**API #** 05-123-25296  
**Date:** 12-6-13  
**Surveyor:** Justin Williams  
**VS:** 0.000  
**Lat :** 40.521  
**Long:** -104.636

**Well:** Anderson E 02-04  
**Location:** Weld County, Colorado  
**North Reference:** GRID  
**Convergence:** GRID North is 0.56 Deg  
**Declination:** 8.47  
**Depth Reference:** RKB = Ground Level  
**Elevation:** 4855  
**Total Depth as Drilled:** 7342

**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	0.760	222.744	-0.487	-0.450	99.997	0.760	-0.487	0.663
200.000	0.370	251.417	-1.077	-1.206	199.992	0.470	-1.077	1.617
300.000	0.321	240.417	-1.318	-1.757	299.990	0.082	-1.318	2.196
400.000	0.237	249.974	-1.528	-2.195	399.989	0.096	-1.528	2.674
500.000	0.102	303.534	-1.549	-2.463	499.989	0.194	-1.549	2.910
600.000	0.184	202.222	-1.648	-2.598	599.989	0.227	-1.648	3.077
700.000	0.166	121.426	-1.872	-2.535	699.988	0.227	-1.872	3.151
800.000	0.156	175.663	-2.084	-2.401	799.988	0.147	-2.084	3.179
900.000	0.207	127.019	-2.329	-2.246	899.987	0.157	-2.329	3.236
1000.000	0.252	176.369	-2.658	-2.088	999.987	0.196	-2.658	3.380
1100.000	0.206	127.644	-2.987	-1.931	1099.986	0.194	-2.987	3.557
1200.000	0.318	110.765	-3.196	-1.529	1199.985	0.135	-3.196	3.543
1300.000	0.318	103.789	-3.361	-1.000	1299.983	0.039	-3.361	3.506
1400.000	0.381	108.968	-3.534	-0.417	1399.982	0.070	-3.534	3.559
1500.000	0.392	106.929	-3.742	0.225	1499.979	0.018	-3.742	3.749
1600.000	0.286	143.022	-4.041	0.702	1599.978	0.233	-4.041	4.102
1700.000	0.278	49.817	-4.084	1.038	1699.977	0.410	-4.084	4.214
1800.000	0.397	123.368	-4.118	1.512	1799.976	0.415	-4.118	4.387
1900.000	0.089	213.833	-4.373	1.758	1899.975	0.407	-4.373	4.713
2000.000	0.477	195.291	-4.839	1.605	1999.973	0.394	-4.839	5.098
2100.000	0.568	219.150	-5.626	1.182	2099.969	0.234	-5.626	5.748
2200.000	0.636	239.415	-6.293	0.391	2199.964	0.222	-6.293	6.305
2300.000	0.806	241.220	-6.914	-0.703	2299.956	0.171	-6.914	6.949
2400.000	1.116	236.896	-7.784	-2.135	2399.942	0.318	-7.784	8.072
2500.000	1.315	227.554	-9.090	-3.798	2499.919	0.281	-9.090	9.852
2600.000	1.485	225.275	-10.777	-5.565	2599.889	0.179	-10.777	12.129
2700.000	1.251	227.485	-12.427	-7.291	2699.861	0.240	-12.427	14.408
2800.000	1.154	225.357	-13.872	-8.812	2799.839	0.107	-13.872	16.435
2900.000	1.053	227.467	-15.201	-10.206	2899.820	0.109	-15.201	18.309
3000.000	0.847	233.700	-16.259	-11.478	2999.806	0.230	-16.259	19.902
3100.000	0.554	244.931	-16.901	-12.511	3099.799	0.322	-16.901	21.028
3200.000	0.580	249.001	-17.287	-13.421	3199.794	0.048	-17.287	21.886
3300.000	0.538	296.822	-17.257	-14.312	3299.790	0.455	-17.257	22.420
3400.000	0.520	344.538	-16.608	-14.852	3399.786	0.428	-16.608	22.280
3500.000	1.321	19.732	-15.085	-14.584	3499.773	0.944	-15.085	20.983

3600.000	1.547	56.215	-13.250	-13.073	3599.744	0.923	-13.250	18.613
3700.000	0.768	84.773	-12.438	-11.284	3699.723	0.947	-12.438	16.794
3800.000	1.299	131.538	-13.129	-9.768	3799.708	0.955	-13.129	16.364
3900.000	1.785	127.813	-14.836	-7.688	3899.672	0.496	-14.836	16.710
4000.000	1.549	140.256	-16.830	-5.594	3999.629	0.431	-16.830	17.735
4100.000	1.495	137.974	-18.839	-3.856	4099.594	0.081	-18.839	19.230
4200.000	1.568	135.216	-20.780	-2.018	4199.558	0.104	-20.780	20.877
4300.000	2.176	137.009	-23.139	0.240	4299.505	0.610	-23.139	23.141
4400.000	2.471	150.127	-26.397	2.608	4399.423	0.606	-26.397	26.526
4500.000	2.673	150.412	-30.294	4.833	4499.322	0.202	-30.294	30.677
4600.000	2.892	147.379	-34.446	7.344	4599.204	0.264	-34.446	35.220
4700.000	3.059	145.124	-38.759	10.230	4699.070	0.204	-38.759	40.087
4800.000	3.038	134.390	-42.802	13.649	4798.929	0.570	-42.802	44.926
4900.000	2.587	122.802	-45.879	17.440	4898.809	0.724	-45.879	49.082
5000.000	2.554	130.483	-48.548	21.031	4998.709	0.346	-48.548	52.907
5100.000	2.506	136.392	-51.577	24.233	5098.611	0.265	-51.577	56.986
5200.000	2.686	138.376	-54.911	27.297	5198.509	0.201	-54.911	61.322
5300.000	2.614	138.469	-58.370	30.366	5298.402	0.072	-58.370	65.796
5400.000	2.677	144.534	-61.979	33.233	5398.295	0.287	-61.979	70.327
5500.000	2.521	134.794	-65.431	36.149	5498.193	0.468	-65.431	74.752
5600.000	2.420	137.611	-68.540	39.133	5598.100	0.158	-68.540	78.924
5700.000	1.446	130.926	-70.926	41.510	5698.042	0.998	-70.926	82.180
5800.000	0.775	124.160	-72.132	43.023	5798.023	0.683	-72.132	83.988
5900.000	0.497	125.039	-72.761	43.938	5898.016	0.278	-72.761	84.998
6000.000	0.378	116.085	-73.155	44.589	5998.014	0.137	-73.155	85.673
6100.000	0.548	120.724	-73.545	45.297	6098.010	0.174	-73.545	86.375
6200.000	0.315	111.378	-73.889	45.964	6198.007	0.243	-73.889	87.019
6300.000	0.389	106.436	-74.085	46.545	6298.005	0.080	-74.085	87.493
6400.000	0.501	87.918	-74.165	47.307	6398.002	0.181	-74.165	87.968
6500.000	0.618	83.985	-74.093	48.280	6497.998	0.123	-74.093	88.435
6600.000	0.655	58.920	-73.741	49.306	6597.992	0.279	-73.741	88.707
6700.000	0.637	89.588	-73.442	50.352	6697.986	0.342	-73.442	89.045
6800.000	0.402	78.881	-73.370	51.252	6797.981	0.254	-73.370	89.499
6900.000	0.394	54.847	-73.105	51.877	6897.979	0.166	-73.105	89.641
7000.000	0.310	60.158	-72.772	52.393	6997.977	0.090	-72.772	89.671
7050.000	0.376	41.154	-72.581	52.619	7047.976	0.261	-72.581	89.648

0

degrees East of True North

**Cbrg**

0.000  
222.744  
228.244  
233.110  
235.158  
237.831  
237.604  
233.549  
229.045  
223.965  
218.153  
212.881  
205.564  
196.570  
186.723  
176.565  
170.144  
165.744  
159.836  
158.098  
161.651  
168.134  
176.445  
185.810  
195.340  
202.674  
207.313  
210.401  
212.426  
213.877  
215.220  
216.511  
217.824  
219.671  
221.806  
224.032

224.615  
222.214  
216.649  
207.395  
198.384  
191.566  
185.547  
179.405  
174.357  
170.935  
167.964  
165.215  
162.313  
159.187  
156.577  
154.834  
153.567  
152.515  
151.800  
151.081  
150.276  
149.661  
149.186  
148.874  
148.637  
148.371  
148.116  
147.861  
147.468  
146.911  
146.232  
145.565  
145.064  
144.639  
144.247  
144.059