



**Company:** Noble Energy  
**Rig:** Production/VES  
**API #** 05-123-15626

**Date:** 10/21/2013

**Surveyor:** Nick Kula

**VS:** 0.000

**Lat :** 40.280

**Long:** -104.607

**Well:** OCOMA G25-23

**Location:** Weld County, Colorado

**North Reference:** GRID

**Convergence:** GRID North is 0.580 Degrees East

**Declination:** 8.46

**Depth Reference:** Ground Level

**Elevation:** 4826'

**Total Depth as Drilled:** 7255'

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

HA Gyro Survey Calculations

Depth	Inc	AzG	N/-S	E/-W	TVD	DL	VS	CD	Cbrg
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100.000	0.203	32.706	0.149	0.096	100.000	0.203	0.149	0.177	32.706
200.000	0.211	353.416	0.481	0.170	199.999	0.139	0.481	0.510	19.465
300.000	0.210	336.937	0.833	0.077	299.999	0.060	0.833	0.836	5.271
400.000	0.276	333.566	1.218	-0.102	399.998	0.067	1.218	1.222	355.190
500.000	0.293	325.118	1.643	-0.356	499.996	0.045	1.643	1.681	347.778
600.000	0.168	261.959	1.832	-0.647	599.996	0.264	1.832	1.943	340.556
700.000	0.272	316.268	1.984	-0.956	699.995	0.221	1.984	2.202	334.271
800.000	0.223	343.610	2.342	-1.175	799.994	0.127	2.342	2.620	333.354
900.000	0.256	270.333	2.529	-1.454	899.993	0.287	2.529	2.917	330.115
1000.000	0.220	291.728	2.601	-1.855	999.993	0.095	2.601	3.195	324.506
1100.000	0.279	312.641	2.837	-2.212	1099.992	0.108	2.837	3.598	322.056
1200.000	0.349	320.859	3.239	-2.584	1199.990	0.083	3.239	4.143	321.417
1300.000	0.490	308.054	3.739	-3.113	1299.988	0.169	3.739	4.865	320.218
1400.000	0.605	297.446	4.246	-3.918	1399.983	0.152	4.246	5.777	317.297
1500.000	0.669	311.282	4.874	-4.825	1499.977	0.166	4.874	6.858	315.289
1600.000	0.713	308.841	5.650	-5.749	1599.970	0.053	5.650	8.060	314.501
1700.000	0.743	322.313	6.553	-6.630	1699.962	0.173	6.553	9.322	314.666
1800.000	0.653	326.738	7.543	-7.339	1799.954	0.105	7.543	10.524	315.784
1900.000	0.508	328.465	8.397	-7.883	1899.949	0.146	8.397	11.517	316.807
2000.000	0.558	331.212	9.201	-8.349	1999.945	0.056	9.201	12.425	317.778
2100.000	0.811	358.497	10.335	-8.602	2099.938	0.406	10.335	13.446	320.227
2200.000	0.851	351.213	11.776	-8.734	2199.927	0.113	11.776	14.661	323.434
2300.000	1.170	343.887	13.490	-9.131	2299.912	0.344	13.490	16.290	325.907
2400.000	1.181	320.008	15.261	-10.077	2399.891	0.487	15.261	18.288	326.563
2500.000	1.146	342.250	17.003	-11.044	2499.871	0.450	17.003	20.275	326.994
2600.000	1.220	6.765	19.013	-11.224	2599.850	0.508	19.013	22.079	329.446
2700.000	1.361	358.649	21.257	-11.126	2699.825	0.230	21.257	23.993	332.372
2800.000	1.388	339.343	23.578	-11.582	2799.797	0.462	23.578	26.268	333.839
2900.000	1.403	6.672	25.927	-11.867	2899.768	0.660	25.927	28.514	335.407
3000.000	1.563	346.320	28.468	-12.047	2999.735	0.547	28.468	30.912	337.063
3100.000	2.326	357.410	31.820	-12.461	3099.677	0.847	31.820	34.173	338.614
3200.000	2.257	358.056	35.815	-12.620	3199.597	0.073	35.815	37.974	340.590
3300.000	1.581	359.434	39.163	-12.700	3299.541	0.677	39.163	41.171	342.033
3400.000	1.178	20.018	41.508	-12.362	3399.512	0.633	41.508	43.310	343.415
3500.000	0.732	47.137	42.908	-11.542	3499.499	0.623	42.908	44.434	344.944

3600.000	0.502	79.996	43.419	-10.642	3599.493	0.413	43.419	44.704	346.228
3700.000	0.493	114.419	43.317	-9.819	3699.489	0.295	43.317	44.416	347.229
3800.000	0.429	143.457	42.838	-9.204	3799.486	0.239	42.838	43.816	347.875
3900.000	0.530	148.935	42.141	-8.742	3899.483	0.110	42.141	43.038	348.281
4000.000	0.603	178.029	41.220	-8.485	3999.478	0.293	41.220	42.084	348.368
4100.000	0.403	210.316	40.390	-8.645	4099.474	0.339	40.390	41.305	347.919
4200.000	0.405	208.377	39.775	-8.991	4199.472	0.014	39.775	40.779	347.263
4300.000	0.968	274.731	39.534	-10.001	4299.466	0.887	39.534	40.779	345.804
4400.000	1.064	251.016	39.301	-11.720	4399.450	0.428	39.301	41.011	343.394
4500.000	0.978	247.232	38.669	-13.386	4499.434	0.109	38.669	40.920	340.906
4600.000	0.891	288.863	38.590	-14.908	4599.422	0.669	38.590	41.369	338.877
4700.000	1.510	326.573	39.940	-16.370	4699.401	0.972	39.940	43.165	337.713
4800.000	1.484	349.607	42.313	-17.329	4799.368	0.598	42.313	45.724	337.729
4900.000	1.872	3.400	45.217	-17.466	4899.325	0.557	45.217	48.473	338.880
5000.000	2.136	28.232	48.489	-16.487	4999.266	0.899	48.489	51.215	341.221
5100.000	2.029	28.717	51.683	-14.755	5099.200	0.109	51.683	53.748	344.066
5200.000	2.305	33.741	54.907	-12.788	5199.128	0.335	54.907	56.377	346.889
5300.000	1.780	36.753	57.823	-10.742	5299.065	0.536	57.823	58.813	349.476
5400.000	2.349	54.333	60.262	-8.148	5399.000	0.845	60.262	60.811	352.300
5500.000	2.231	74.167	61.988	-4.610	5498.922	0.797	61.988	62.159	355.747
5600.000	1.808	93.941	62.411	-1.164	5598.861	0.809	62.411	62.422	358.932
5700.000	1.300	118.447	61.762	1.407	5698.825	0.825	61.762	61.778	1.305
5800.000	0.843	156.819	60.545	2.694	5798.808	0.826	60.545	60.605	2.548
5900.000	0.123	177.982	59.761	2.988	5898.804	0.730	59.761	59.836	2.862
6000.000	0.898	195.884	58.900	2.777	5998.799	0.782	58.900	58.966	2.699
6100.000	0.193	130.005	58.038	2.692	6098.795	0.838	58.038	58.100	2.655
6200.000	0.268	238.133	57.806	2.622	6198.794	0.376	57.806	57.865	2.597
6300.000	0.487	207.423	57.305	2.227	6298.792	0.291	57.305	57.348	2.225
6400.000	0.636	212.400	56.459	1.734	6398.787	0.156	56.459	56.485	1.759
6500.000	0.573	201.430	55.525	1.254	6498.782	0.131	55.525	55.539	1.293
6600.000	0.457	203.200	54.693	0.914	6598.778	0.117	54.693	54.701	0.957
6700.000	0.489	206.964	53.947	0.564	6698.774	0.045	53.947	53.950	0.599
6800.000	0.404	175.375	53.216	0.399	6798.771	0.256	53.216	53.217	0.429
6900.000	0.347	197.645	52.576	0.335	6898.769	0.155	52.576	52.577	0.365
7000.000	0.391	168.488	51.953	0.311	6998.767	0.190	51.953	51.954	0.343

of True North