



Company: Noble Energy
Rig: Production/VES
API # 05-123-24288

Date: 10/23/2013

Surveyor: Nick Kula

VS: 0.000

Lat : 40.514

Long: -104.477

Well: Foss #6-42

Location: Weld County, Colorado

North Reference: GRID

Convergence: GRID North is 0.660 Degrees East

Declination: 8.41

Depth Reference: Ground Level

Elevation: 4696'

Total Depth as Drilled: 6984'

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	0.347	306.807	0.181	-0.243	99.999	0.347	0.181	0.303	306.807
200.000	0.385	291.190	0.484	-0.798	199.997	0.106	0.484	0.934	301.250
300.000	0.095	341.208	0.685	-1.138	299.996	0.332	0.685	1.328	301.025
400.000	0.431	151.955	0.431	-0.988	399.996	0.525	0.431	1.078	293.586
500.000	0.839	118.892	-0.254	-0.171	499.990	0.532	-0.254	0.306	213.888
600.000	0.794	143.036	-1.161	0.887	599.980	0.344	-1.161	1.461	142.636
700.000	1.057	119.595	-2.171	2.106	699.967	0.456	-2.171	3.024	135.872
800.000	1.136	149.089	-3.477	3.417	799.949	0.563	-3.477	4.875	135.496
900.000	0.986	154.252	-5.102	4.300	899.932	0.177	-5.102	6.672	139.877
1000.000	1.134	138.704	-6.621	5.327	999.915	0.322	-6.621	8.497	141.181
1100.000	1.014	137.261	-8.014	6.580	1099.898	0.122	-8.014	10.369	140.611
1200.000	0.963	128.355	-9.185	7.839	1199.883	0.162	-9.185	12.075	139.519
1300.000	0.901	135.959	-10.271	9.045	1299.870	0.138	-10.271	13.686	138.634
1400.000	0.965	116.711	-11.215	10.344	1399.857	0.318	-11.215	15.257	137.315
1500.000	1.020	127.525	-12.136	11.802	1499.842	0.195	-12.136	16.929	135.799
1600.000	1.178	138.582	-13.450	13.189	1599.823	0.264	-13.450	18.837	135.561
1700.000	1.089	129.767	-14.829	14.599	1699.804	0.196	-14.829	20.809	135.446
1800.000	0.684	122.334	-15.756	15.834	1799.792	0.421	-15.756	22.337	134.858
1900.000	0.497	164.734	-16.493	16.452	1899.787	0.461	-16.493	23.296	135.071
2000.000	0.383	152.557	-17.208	16.721	1999.784	0.147	-17.208	23.994	135.824
2100.000	0.412	165.628	-17.853	16.964	2099.782	0.095	-17.853	24.628	136.463
2200.000	0.358	174.496	-18.512	17.083	2199.779	0.080	-18.512	25.190	137.299
2300.000	0.680	120.797	-19.127	17.623	2299.776	0.549	-19.127	26.008	137.345
2400.000	0.656	104.382	-19.573	18.687	2399.769	0.192	-19.573	27.061	136.327
2500.000	0.404	91.155	-19.722	19.593	2499.765	0.279	-19.722	27.801	135.188
2600.000	0.201	80.779	-19.701	20.119	2599.763	0.209	-19.701	28.159	134.400
2700.000	0.074	75.202	-19.657	20.354	2699.763	0.128	-19.657	28.296	134.001
2800.000	0.089	153.839	-19.710	20.451	2799.763	0.104	-19.710	28.403	133.944
2900.000	0.260	232.410	-19.918	20.306	2899.762	0.257	-19.918	28.444	134.449
3000.000	0.426	234.292	-20.274	19.824	2999.761	0.167	-20.274	28.355	135.643
3100.000	0.635	256.505	-20.620	18.983	3099.756	0.290	-20.620	28.028	137.367
3200.000	0.732	264.986	-20.805	17.808	3199.749	0.140	-20.805	27.386	139.439
3300.000	1.078	257.962	-21.057	16.252	3299.737	0.363	-21.057	26.600	142.339
3400.000	1.351	278.513	-21.079	14.166	3399.715	0.510	-21.079	25.397	146.098
3500.000	1.679	282.364	-20.591	11.568	3499.679	0.343	-20.591	23.618	150.672

3600.000	2.040	277.222	-20.053	8.371	3599.627	0.397	-20.053	21.730	157.342
3700.000	2.301	282.168	-19.406	4.643	3699.555	0.321	-19.406	19.954	166.546
3800.000	2.900	274.318	-18.793	0.157	3799.452	0.695	-18.793	18.793	179.520
3900.000	2.946	264.738	-18.838	-4.924	3899.322	0.490	-18.838	19.471	194.648
4000.000	2.266	254.015	-19.618	-9.383	3999.219	0.834	-19.618	21.746	205.562
4100.000	1.547	243.179	-20.771	-12.488	4099.163	0.801	-20.771	24.236	211.014
4200.000	1.545	214.809	-22.487	-14.462	4199.128	0.757	-22.487	26.736	212.745
4300.000	2.179	190.566	-25.462	-15.580	4299.076	0.998	-25.462	29.851	211.461
4400.000	2.341	170.417	-29.345	-15.588	4399.000	0.806	-29.345	33.228	207.978
4500.000	2.711	170.728	-33.692	-14.867	4498.903	0.371	-33.692	36.826	203.810
4600.000	2.880	167.320	-38.477	-13.935	4598.784	0.237	-38.477	40.922	199.909
4700.000	2.554	161.475	-43.040	-12.676	4698.672	0.427	-43.040	44.868	196.410
4800.000	2.240	154.507	-46.917	-11.127	4798.584	0.428	-46.917	48.218	193.341
4900.000	1.919	145.182	-50.056	-9.329	4898.519	0.466	-50.056	50.918	190.558
5000.000	1.253	153.287	-52.407	-7.882	4998.480	0.701	-52.407	52.996	188.553
5100.000	0.499	161.042	-53.795	-7.249	5098.467	0.761	-53.795	54.281	187.675
5200.000	0.072	56.845	-54.173	-7.055	5198.466	0.521	-54.173	54.630	187.420
5300.000	0.631	35.585	-53.691	-6.682	5298.464	0.564	-53.691	54.105	187.094
5400.000	1.273	51.021	-52.545	-5.499	5398.450	0.686	-52.545	52.832	185.974
5500.000	1.347	36.164	-50.897	-3.942	5498.424	0.346	-50.897	51.050	184.428
5600.000	1.127	29.330	-49.091	-2.767	5598.401	0.264	-49.091	49.169	183.226
5700.000	0.805	16.537	-47.561	-2.085	5698.386	0.386	-47.561	47.607	182.510
5800.000	0.522	349.159	-46.441	-1.971	5798.380	0.417	-46.441	46.483	182.430
5900.000	0.572	333.918	-45.545	-2.276	5898.375	0.153	-45.545	45.602	182.861
6000.000	0.624	317.490	-44.695	-2.864	5998.370	0.179	-44.695	44.787	183.666
6100.000	0.813	307.472	-43.862	-3.795	6098.362	0.225	-43.862	44.026	184.945
6200.000	0.769	308.194	-43.016	-4.885	6198.353	0.045	-43.016	43.292	186.479
6300.000	1.011	305.851	-42.084	-6.127	6298.340	0.245	-42.084	42.528	188.284
6400.000	0.773	309.625	-41.137	-7.362	6398.328	0.245	-41.137	41.791	190.146
6500.000	0.669	305.207	-40.371	-8.358	6498.320	0.118	-40.371	41.227	191.696
6600.000	0.500	305.303	-39.783	-9.191	6598.315	0.169	-39.783	40.830	193.008

of True North