



Company: Noble Energy
Rig: Production/VES
API # 05-123-25174

Date: 6/26/2013

Surveyor: Nick Kula

VS: 0.000

Lat : 40.57875

Long: -104.509

Well: Shable 14-11

Location: Weld County, Colorado

North Reference: GRID

Convergence: Grid north is -0.64 of Tru

Declination: 8.48

Depth Reference: Ground Level

Elevation: 4826'

Total Depth as Drilled: 7203

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	0.359	23.439	0.287	0.125	99.999	0.359	0.287	0.313	23.439
200.000	0.347	347.565	0.870	0.184	199.998	0.218	0.870	0.889	11.940
300.000	0.027	28.398	1.187	0.130	299.997	0.327	1.187	1.194	6.259
400.000	0.174	38.827	1.326	0.237	399.997	0.148	1.326	1.347	10.127
500.000	0.243	78.503	1.487	0.540	499.996	0.156	1.487	1.582	19.971
600.000	0.099	68.355	1.561	0.828	599.996	0.147	1.561	1.767	27.955
700.000	0.218	223.566	1.455	0.777	699.995	0.311	1.455	1.649	28.112
800.000	0.361	214.834	1.058	0.466	799.994	0.148	1.058	1.156	23.766
900.000	0.530	240.519	0.573	-0.116	899.991	0.258	0.573	0.584	348.545
1000.000	0.668	186.807	-0.234	-0.587	999.986	0.555	-0.234	0.632	248.299
1100.000	0.790	215.177	-1.376	-1.054	1099.979	0.376	-1.376	1.733	217.440
1200.000	0.920	207.562	-2.651	-1.822	1199.968	0.172	-2.651	3.217	214.502
1300.000	0.717	222.662	-3.823	-2.618	1299.957	0.294	-3.823	4.633	214.401
1400.000	0.980	215.513	-4.979	-3.538	1399.946	0.282	-4.979	6.108	215.400
1500.000	1.004	224.136	-6.303	-4.645	1499.931	0.151	-6.303	7.830	216.386
1600.000	0.622	209.381	-7.404	-5.521	1599.921	0.433	-7.404	9.236	216.709
1700.000	0.948	211.037	-8.586	-6.214	1699.912	0.327	-8.586	10.598	215.893
1800.000	0.835	224.805	-9.812	-7.153	1799.900	0.242	-9.812	12.143	216.095
1900.000	0.545	228.307	-10.645	-8.022	1899.892	0.292	-10.645	13.329	217.001
2000.000	0.361	222.283	-11.194	-8.589	1999.889	0.190	-11.194	14.110	217.498
2100.000	0.398	194.393	-11.764	-8.887	2099.887	0.187	-11.764	14.744	217.070
2200.000	0.192	283.944	-12.060	-9.137	2199.886	0.441	-12.060	15.130	217.147
2300.000	0.353	314.772	-11.803	-9.518	2299.885	0.212	-11.803	15.162	218.884
2400.000	0.885	327.718	-10.933	-10.149	2399.879	0.546	-10.933	14.918	222.872
2500.000	1.570	340.826	-8.986	-11.012	2499.856	0.736	-8.986	14.213	230.783
2600.000	2.013	350.577	-5.960	-11.749	2599.807	0.537	-5.960	13.174	243.104
2700.000	1.984	346.718	-2.542	-12.434	2699.746	0.138	-2.542	12.692	258.448
2800.000	1.623	327.993	0.345	-13.583	2799.697	0.687	0.345	13.587	271.453
2900.000	1.724	350.077	3.027	-14.593	2899.655	0.648	3.027	14.903	281.719
3000.000	1.280	335.987	5.529	-15.307	2999.621	0.574	5.529	16.275	289.860
3100.000	1.211	337.639	7.527	-16.163	3099.597	0.078	7.527	17.830	294.970
3200.000	1.126	337.088	9.409	-16.948	3199.577	0.086	9.409	19.385	299.039
3300.000	1.054	344.012	11.199	-17.584	3299.559	0.150	11.199	20.847	302.492
3400.000	0.975	9.644	12.921	-17.695	3399.543	0.457	12.921	21.910	306.139
3500.000	1.034	50.963	14.329	-16.851	3499.529	0.711	14.329	22.119	310.375

3600.000	1.846	56.694	15.781	-14.804	3599.497	0.823	15.781	21.638	316.830
3700.000	1.980	68.179	17.308	-11.854	3699.442	0.405	17.308	20.978	325.594
3800.000	2.172	47.705	19.226	-8.848	3799.377	0.762	19.226	21.164	335.287
3900.000	1.795	37.728	21.739	-6.488	3899.317	0.510	21.739	22.687	343.382
4000.000	1.958	55.158	23.954	-4.128	3999.265	0.591	23.954	24.307	350.222
4100.000	2.181	43.270	26.315	-1.422	4099.200	0.482	26.315	26.354	356.907
4200.000	2.095	40.887	29.082	1.079	4199.130	0.123	29.082	29.102	2.124
4300.000	1.981	37.659	31.832	3.331	4299.067	0.162	31.832	32.006	5.974
4400.000	2.264	42.303	34.661	5.716	4398.998	0.331	34.661	35.129	9.364
4500.000	1.877	27.462	37.575	7.800	4498.934	0.658	37.575	38.376	11.728
4600.000	1.874	38.315	40.311	9.570	4598.880	0.355	40.311	41.431	13.354
4700.000	1.046	20.300	42.450	10.900	4698.848	0.938	42.450	43.827	14.401
4800.000	1.293	9.836	44.417	11.409	4798.827	0.326	44.417	45.859	14.406
4900.000	0.598	30.414	45.978	11.866	4898.813	0.763	45.978	47.485	14.471
5000.000	0.632	29.554	46.908	12.402	4998.807	0.035	46.908	48.520	14.810
5100.000	0.216	206.600	47.219	12.590	5098.805	0.847	47.219	48.869	14.929
5200.000	0.197	255.643	47.008	12.339	5198.805	0.172	47.008	48.601	14.708
5300.000	0.519	18.763	47.395	12.319	5298.804	0.648	47.395	48.970	14.570
5400.000	1.167	65.769	48.241	13.393	5398.793	0.897	48.241	50.066	15.516
5500.000	1.420	47.810	49.491	15.239	5498.768	0.475	49.491	51.784	17.114
5600.000	0.676	15.318	50.892	16.313	5598.751	0.924	50.892	53.442	17.773
5700.000	0.976	8.792	52.302	16.599	5698.741	0.314	52.302	54.873	17.607
5800.000	0.736	11.246	53.773	16.854	5798.730	0.243	53.773	56.352	17.402
5900.000	0.542	325.801	54.793	16.713	5898.724	0.525	54.793	57.286	16.963
6000.000	0.446	274.250	55.213	16.059	5998.721	0.438	55.213	57.501	16.218
6100.000	0.993	237.761	54.780	14.938	6098.713	0.687	54.780	56.780	15.254
6200.000	1.180	248.397	53.939	13.249	6198.695	0.274	53.939	55.542	13.800
6300.000	1.111	244.678	53.145	11.415	6298.675	0.101	53.145	54.357	12.122
6400.000	0.758	257.016	52.582	9.894	6398.662	0.405	52.582	53.505	10.657
6500.000	0.595	261.422	52.356	8.737	6498.655	0.171	52.356	53.080	9.474
6600.000	0.272	308.587	52.427	8.038	6598.652	0.456	52.427	53.039	8.717
6700.000	0.208	314.378	52.702	7.723	6698.651	0.068	52.702	53.264	8.336
6800.000	0.985	339.971	53.636	7.298	6798.645	0.803	53.636	54.131	7.749
6900.000	0.660	322.943	54.904	6.657	6898.635	0.403	54.904	55.306	6.913
7000.000	0.921	249.110	55.077	5.558	6998.627	0.973	55.077	55.357	5.763
7100.000	0.986	242.805	54.397	4.042	7098.614	0.123	54.397	54.547	4.249

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