



Company: Noble Energy
 Rig: Production/VES
 API # 05-123-11124
 Date: 5/21/2013
 Surveyor: Nick Kula
 VS: 0.000
 Lat : 40.32082
 Long: -104.803

Well: Monfort Gilcrest K #8-14
 Location: Weld County, Colorado
 North Reference: GRID
 Convergence: Grid north is -0.45 of Tr
 Declination: 8.62
 Depth Reference: Ground Level
 Elevation: 4701'
 Total Depth as Drilled: 7410'

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	0.542	208.030	-0.418	-0.222	99.999	0.542	-0.418	0.473	208.030
200.000	0.462	132.064	-1.106	-0.145	199.996	0.621	-1.106	1.115	187.493
300.000	0.331	133.430	-1.574	0.364	299.993	0.132	-1.574	1.616	166.997
400.000	0.399	180.204	-2.121	0.572	399.991	0.296	-2.121	2.197	164.909
500.000	0.303	226.595	-2.651	0.378	499.990	0.290	-2.651	2.678	171.877
600.000	0.352	199.224	-3.122	0.085	599.988	0.162	-3.122	3.124	178.441
700.000	0.365	192.938	-3.723	-0.087	699.986	0.041	-3.723	3.724	181.346
800.000	0.393	205.263	-4.344	-0.305	799.984	0.086	-4.344	4.354	184.019
900.000	0.313	246.790	-4.761	-0.702	899.982	0.261	-4.761	4.813	188.392
1000.000	0.290	204.949	-5.098	-1.060	999.981	0.216	-5.098	5.207	191.745
1100.000	0.186	179.044	-5.489	-1.164	1099.980	0.147	-5.489	5.611	191.971
1200.000	0.320	202.677	-5.909	-1.269	1199.979	0.168	-5.909	6.043	192.120
1300.000	0.201	237.933	-6.259	-1.525	1299.978	0.195	-6.259	6.443	193.692
1400.000	0.160	238.912	-6.424	-1.793	1399.978	0.041	-6.424	6.670	195.592
1500.000	0.173	263.122	-6.515	-2.062	1499.977	0.071	-6.515	6.833	197.564
1600.000	0.207	259.409	-6.566	-2.389	1599.977	0.037	-6.566	6.987	199.996
1700.000	0.163	235.124	-6.680	-2.683	1699.976	0.089	-6.680	7.199	201.885
1800.000	0.215	301.008	-6.665	-2.961	1799.976	0.210	-6.665	7.293	203.953
1900.000	0.206	304.615	-6.466	-3.270	1899.975	0.016	-6.466	7.245	206.824
2000.000	0.232	295.408	-6.277	-3.600	1999.974	0.044	-6.277	7.236	209.834
2100.000	0.305	326.696	-5.968	-3.928	2099.973	0.161	-5.968	7.145	213.355
2200.000	0.347	290.236	-5.641	-4.359	2199.972	0.208	-5.641	7.129	217.692
2300.000	0.383	302.147	-5.358	-4.926	2299.970	0.084	-5.358	7.278	222.591
2400.000	0.443	293.987	-5.023	-5.562	2399.967	0.084	-5.023	7.495	227.916
2500.000	0.593	292.265	-4.670	-6.395	2499.963	0.151	-4.670	7.919	233.863
2600.000	0.700	260.218	-4.577	-7.476	2599.957	0.371	-4.577	8.766	238.522
2700.000	0.641	270.013	-4.681	-8.637	2699.950	0.129	-4.681	9.824	241.544
2800.000	0.798	271.311	-4.665	-9.892	2799.942	0.157	-4.665	10.937	244.752
2900.000	0.916	259.375	-4.796	-11.373	2899.931	0.214	-4.796	12.343	247.134
3000.000	1.186	282.035	-4.728	-13.171	2999.915	0.491	-4.728	13.994	250.254
3100.000	1.379	273.375	-4.441	-15.385	3099.890	0.273	-4.441	16.013	253.898
3200.000	1.425	277.885	-4.200	-17.818	3199.860	0.119	-4.200	18.306	256.737
3300.000	1.448	303.361	-3.334	-20.104	3299.829	0.634	-3.334	20.379	260.583
3400.000	1.670	302.594	-1.854	-22.388	3399.792	0.223	-1.854	22.465	265.265
3500.000	1.446	331.494	0.040	-24.218	3499.757	0.807	0.040	24.218	270.095

3600.000	1.610	6.043	2.546	-24.673	3599.723	0.921	2.546	24.804	275.891
3700.000	1.184	334.881	4.878	-24.964	3699.695	0.855	4.878	25.436	281.057
3800.000	1.111	314.129	6.489	-26.098	3799.675	0.420	6.489	26.893	283.963
3900.000	0.980	329.022	7.898	-27.235	3899.659	0.301	7.898	28.357	286.172
4000.000	0.813	320.528	9.179	-28.126	3999.646	0.213	9.179	29.586	288.075
4100.000	0.665	342.492	10.281	-28.752	4099.638	0.317	10.281	30.535	289.675
4200.000	0.766	307.743	11.243	-29.455	4199.631	0.438	11.243	31.528	290.892
4300.000	0.848	320.991	12.227	-30.449	4299.621	0.203	12.227	32.812	291.878
4400.000	0.701	317.163	13.250	-31.331	4399.612	0.155	13.250	34.017	292.925
4500.000	0.530	291.037	13.865	-32.178	4499.606	0.324	13.865	35.038	293.310
4600.000	0.898	249.232	13.753	-33.342	4599.599	0.615	13.753	36.067	292.415
4700.000	1.221	247.488	13.067	-35.059	4699.582	0.324	13.067	37.415	290.441
4800.000	1.436	256.256	12.362	-37.260	4799.555	0.295	12.362	39.257	288.354
4900.000	0.801	231.709	11.631	-39.025	4899.536	0.781	11.631	40.722	286.596
5000.000	0.899	282.450	11.367	-40.340	4999.526	0.734	11.367	41.911	285.737
5100.000	0.866	240.604	11.165	-41.764	5099.515	0.631	11.165	43.231	284.967
5200.000	0.647	247.014	10.574	-42.943	5199.506	0.234	10.574	44.225	283.833
5300.000	0.723	254.856	10.188	-44.072	5299.499	0.120	10.188	45.234	283.017
5400.000	0.312	257.213	9.963	-44.947	5399.495	0.411	9.963	46.038	282.498
5500.000	0.399	249.908	9.783	-45.540	5499.493	0.097	9.783	46.579	282.125
5600.000	0.659	342.476	10.212	-46.040	5599.490	0.786	10.212	47.159	282.507
5700.000	0.467	333.546	11.126	-46.394	5699.485	0.211	11.126	47.710	283.486
5800.000	0.803	326.570	12.075	-46.962	5799.479	0.344	12.075	48.489	284.420
5900.000	0.716	347.724	13.270	-47.480	5899.470	0.292	13.270	49.300	285.615
6000.000	1.114	295.770	14.303	-48.489	5999.459	0.878	14.303	50.554	286.435
6100.000	1.251	319.450	15.556	-50.074	6099.438	0.504	15.556	52.435	287.257
6200.000	1.008	309.319	16.943	-51.465	6199.419	0.314	16.943	54.182	288.222
6300.000	1.318	293.581	17.960	-53.199	6299.398	0.442	17.960	56.149	288.655
6400.000	1.434	286.028	18.766	-55.455	6399.370	0.215	18.766	58.544	288.695
6500.000	1.572	311.913	20.027	-57.678	6499.336	0.687	20.027	61.056	289.148
6600.000	1.360	314.335	21.773	-59.548	6599.304	0.221	21.773	63.404	290.084
6700.000	1.035	330.853	23.391	-60.836	6699.282	0.471	23.391	65.178	291.031
6800.000	1.144	282.263	24.391	-62.252	6799.266	0.902	24.391	66.860	291.396
6900.000	1.220	261.955	24.454	-64.282	6899.245	0.424	24.454	68.776	290.828
7000.000	1.199	260.979	24.141	-66.370	6999.223	0.030	24.141	70.624	289.988
7100.000	1.301	262.839	23.836	-68.530	7099.199	0.110	23.836	72.557	289.178

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