



Company: Noble Energy
 Rig: Production / V.E.S.
 API # 05-123-23973
 Date: 11/18/2013
 Surveyor: Norman Cowan
 VS: 0.000
 Lat : 40.060
 Long: -104.698

Well: Steward 44-07
 Location: Weld County, Colorado
 North Reference: GRID
 Convergence: Grid north is 0.52 Deg East of Tru
 Declination: 8.47 Degrees
 Depth Reference: Ground Level
 Elevation: 4973 Feet
 Total Depth as Drilled: 8147 Feet

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
100.000	0.796	163.492	-0.666	0.197	99.997	0.796	-0.666	0.695	163.492
200.000	0.885	142.013	-1.941	0.870	199.986	0.325	-1.941	2.128	155.853
300.000	0.798	118.002	-2.877	1.961	299.976	0.360	-2.877	3.482	145.726
400.000	0.744	129.757	-3.620	3.075	399.967	0.167	-3.620	4.749	139.650
500.000	0.577	134.095	-4.385	3.936	499.960	0.174	-4.385	5.892	138.091
600.000	0.420	156.872	-5.072	4.441	599.956	0.250	-5.072	6.742	138.795
700.000	0.584	145.469	-5.829	4.874	699.953	0.191	-5.829	7.598	140.098
800.000	0.551	121.543	-6.500	5.572	799.948	0.237	-6.500	8.562	139.393
900.000	0.388	108.636	-6.860	6.303	899.944	0.193	-6.860	9.316	137.422
1000.000	0.211	101.216	-7.004	6.805	999.943	0.180	-7.004	9.765	135.826
1100.000	0.237	212.546	-7.214	6.874	1099.943	0.371	-7.214	9.965	136.382
1200.000	0.435	248.224	-7.529	6.411	1199.941	0.279	-7.529	9.889	139.589
1300.000	0.513	266.977	-7.694	5.612	1299.938	0.173	-7.694	9.523	143.894
1400.000	0.458	277.824	-7.663	4.769	1399.934	0.107	-7.663	9.026	148.105
1500.000	0.543	282.190	-7.508	3.909	1499.930	0.094	-7.508	8.465	152.496
1600.000	0.474	266.390	-7.434	3.033	1599.926	0.156	-7.434	8.029	157.804
1700.000	0.385	242.627	-7.615	2.322	1699.924	0.197	-7.615	7.961	163.042
1800.000	0.272	244.666	-7.871	1.809	1799.922	0.114	-7.871	8.076	167.054
1900.000	0.146	281.495	-7.947	1.470	1899.921	0.178	-7.947	8.082	169.519
2000.000	0.408	281.973	-7.848	0.997	1999.920	0.262	-7.848	7.911	172.760
2100.000	0.431	326.566	-7.460	0.442	2099.918	0.319	-7.460	7.473	176.612
2200.000	0.568	337.558	-6.688	0.045	2199.914	0.166	-6.688	6.688	179.613
2300.000	0.639	0.512	-5.672	-0.139	2299.908	0.250	-5.672	5.674	181.404
2400.000	1.078	52.486	-4.542	0.612	2399.898	0.849	-4.542	4.583	172.327
2500.000	1.493	74.677	-3.625	2.614	2499.873	0.641	-3.625	4.469	144.200
2600.000	1.773	62.828	-2.574	5.247	2599.833	0.438	-2.574	5.845	116.130
2700.000	1.766	52.299	-0.925	7.843	2699.786	0.325	-0.925	7.898	96.725
2800.000	1.495	37.460	1.053	9.856	2799.745	0.500	1.053	9.912	83.902
2900.000	1.460	31.290	3.177	11.311	2899.712	0.163	3.177	11.749	74.310
3000.000	1.347	32.043	5.263	12.597	2999.682	0.114	5.263	13.652	67.326
3100.000	1.066	14.771	7.158	13.458	3099.660	0.457	7.158	15.243	61.990
3200.000	1.184	2.943	9.089	13.748	3199.641	0.260	9.089	16.481	56.530
3300.000	1.038	9.039	11.015	13.943	3299.622	0.187	11.015	17.769	51.691
3400.000	0.891	7.525	12.681	14.187	3399.608	0.149	12.681	19.028	48.210
3500.000	1.285	22.359	14.489	14.716	3499.590	0.481	14.489	20.651	45.445

3600.000	1.492	30.697	16.646	15.807	3599.561	0.288	16.646	22.955	43.520
3700.000	1.878	42.453	18.974	17.577	3699.518	0.516	18.974	25.864	42.812
3800.000	1.990	45.210	21.406	19.915	3799.461	0.146	21.406	29.237	42.934
3900.000	1.955	59.501	23.495	22.618	3899.402	0.492	23.495	32.613	43.910
4000.000	1.878	70.971	24.895	25.637	3999.346	0.391	24.895	35.736	45.841
4100.000	2.080	95.825	25.246	28.992	4099.289	0.874	25.246	38.443	48.951
4200.000	2.238	109.408	24.413	32.638	4199.218	0.534	24.413	40.758	53.205
4300.000	1.784	116.522	23.068	35.873	4299.156	0.517	23.068	42.650	57.257
4400.000	1.389	147.887	21.347	37.910	4399.120	0.938	21.347	43.507	60.617
4500.000	1.854	178.125	18.704	38.607	4499.081	0.958	18.704	42.899	64.152
4600.000	1.362	209.649	16.054	38.073	4599.043	0.994	16.054	41.319	67.136
4700.000	1.126	240.081	14.531	36.633	4699.021	0.691	14.531	39.410	68.363
4800.000	1.046	265.312	13.966	34.872	4799.004	0.481	13.966	37.565	68.174
4900.000	1.300	293.429	14.343	32.921	4898.983	0.621	14.343	35.910	66.459
5000.000	1.706	311.283	15.776	30.761	4998.949	0.615	15.776	34.571	62.848
5100.000	2.421	329.940	18.587	28.585	5098.885	0.972	18.587	34.096	56.966
5200.000	2.844	345.835	22.821	26.919	5198.780	0.840	22.821	35.291	49.711
5300.000	2.275	356.545	27.207	26.193	5298.681	0.741	27.207	37.766	43.912
5400.000	1.931	1.984	30.872	26.131	5398.613	0.397	30.872	40.447	40.246
5500.000	1.722	8.977	34.040	26.424	5498.563	0.306	34.040	43.093	37.821
5600.000	1.351	4.158	36.701	26.744	5598.527	0.392	36.701	45.411	36.081
5700.000	1.047	353.942	38.785	26.733	5698.505	0.371	38.785	47.106	34.577
5800.000	0.906	342.386	40.448	26.398	5798.490	0.242	40.448	48.299	33.130
5900.000	0.570	305.087	41.487	25.751	5898.482	0.569	41.487	48.829	31.829
6000.000	0.762	213.065	41.216	24.982	5998.478	0.967	41.216	48.196	31.221
6100.000	0.500	172.030	40.227	24.680	6098.472	0.506	40.227	47.194	31.530
6200.000	0.418	52.127	40.019	25.028	6198.470	0.796	40.019	47.201	32.022
6300.000	0.641	31.162	40.721	25.606	6298.466	0.292	40.721	48.103	32.162
6400.000	0.766	10.427	41.858	26.016	6398.459	0.282	41.858	49.284	31.862
6500.000	0.821	342.048	43.197	25.917	6498.450	0.393	43.197	50.375	30.962
6600.000	0.662	312.591	44.270	25.270	6598.442	0.407	44.270	50.974	29.719
6700.000	0.480	255.155	44.553	24.440	6698.437	0.572	44.553	50.816	28.747
6800.000	0.514	217.029	44.088	23.764	6798.434	0.326	44.088	50.085	28.326
6900.000	0.370	197.628	43.422	23.397	6898.431	0.205	43.422	49.325	28.317
7000.000	0.545	188.374	42.644	23.230	6998.428	0.189	42.644	48.561	28.578
7100.000	0.595	179.249	41.655	23.167	7098.423	0.104	41.655	47.664	29.081
7200.000	0.642	186.816	40.580	23.108	7198.417	0.094	40.580	46.698	29.659
7300.000	0.646	183.395	39.461	23.008	7298.411	0.039	39.461	45.678	30.245
7400.000	0.865	196.116	38.173	22.765	7398.402	0.275	38.173	44.446	30.810
7500.000	0.913	196.089	36.683	22.335	7498.390	0.048	36.683	42.947	31.335
7600.000	0.646	195.947	35.376	21.959	7598.381	0.266	35.376	41.637	31.830
7700.000	0.484	264.189	34.791	21.384	7698.377	0.648	34.791	40.837	31.577
7800.000	0.519	222.571	34.414	20.658	7798.373	0.358	34.414	40.139	30.975
7900.000	0.488	209.938	33.712	20.139	7898.369	0.115	33.712	39.269	30.854

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