



Company: Noble Energy
Rig: Producton / V.E.S.
API # 05-123-18867

Date: 4/14/2014
Surveyor: Norman Cowan

VS: 0.000
Lat : 40.445

Long: -104.486

Well: UPV 31-05(G3

Location: Weld County, Colorado

North Reference: GRID

Convergence: Grid north is 0.66 Deg East of True

Declination: 8.34 Degrees

Depth Reference: Ground Level

Elevation: 4627 Feet

Total Depth as Drilled: 6920 Feet

Lat & Long obtained by handheld GPS at wellhead

Drillog 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	0.187	233.970	-0.096	-0.132	100.000	0.187	-0.096	0.163	233.970
200.000	0.254	278.360	-0.159	-0.483	199.999	0.178	-0.159	0.508	251.726
300.000	0.155	48.855	-0.038	-0.600	299.999	0.374	-0.038	0.601	266.382
400.000	0.150	77.775	0.079	-0.370	399.998	0.076	0.079	0.378	282.057
500.000	0.271	18.180	0.331	-0.168	499.998	0.234	0.331	0.372	333.082
600.000	0.235	16.297	0.753	-0.037	599.997	0.036	0.753	0.754	357.204
700.000	0.277	58.037	1.079	0.226	699.996	0.187	1.079	1.102	11.834
800.000	0.437	354.408	1.586	0.394	799.994	0.400	1.586	1.634	13.947
900.000	0.273	63.493	2.072	0.570	899.993	0.425	2.072	2.149	15.377
1000.000	0.396	20.879	2.501	0.906	999.991	0.269	2.501	2.660	19.914
1100.000	0.013	108.465	2.820	1.040	1099.990	0.395	2.820	3.006	20.238
1200.000	0.285	38.082	3.012	1.204	1199.990	0.281	3.012	3.244	21.780
1300.000	0.370	83.261	3.245	1.677	1299.989	0.263	3.245	3.653	27.328
1400.000	0.125	49.036	3.355	2.080	1399.988	0.275	3.355	3.947	31.799
1500.000	0.335	94.765	3.402	2.454	1499.987	0.263	3.402	4.195	35.802
1600.000	0.530	124.173	3.118	3.128	1599.984	0.289	3.118	4.417	45.086
1700.000	0.185	75.686	2.899	3.667	1699.982	0.430	2.899	4.674	51.672
1800.000	0.267	140.000	2.761	3.973	1799.981	0.250	2.761	4.838	55.207
1900.000	0.520	98.383	2.516	4.572	1899.979	0.366	2.516	5.218	61.170
2000.000	0.825	47.548	2.936	5.552	1999.973	0.640	2.936	6.280	62.127
2100.000	0.678	118.800	3.137	6.601	2099.966	0.884	3.137	7.309	64.581
2200.000	0.608	123.655	2.558	7.561	2199.960	0.089	2.558	7.982	71.307
2300.000	0.474	134.779	1.973	8.297	2299.955	0.169	1.973	8.528	76.623
2400.000	0.888	136.857	1.116	9.120	2399.948	0.415	1.116	9.188	83.022
2500.000	0.569	148.039	0.129	9.913	2499.940	0.348	0.129	9.914	89.252
2600.000	0.519	92.439	-0.311	10.628	2599.936	0.509	-0.311	10.632	91.677
2700.000	0.295	154.131	-0.562	11.193	2699.934	0.459	-0.562	11.207	92.876
2800.000	0.425	151.758	-1.121	11.480	2799.932	0.131	-1.121	11.535	95.576
2900.000	0.645	161.246	-1.981	11.837	2899.928	0.236	-1.981	12.001	99.499
3000.000	0.523	48.246	-2.210	12.358	2999.925	0.976	-2.210	12.554	100.137
3100.000	0.415	49.229	-1.669	12.973	3099.921	0.108	-1.669	13.080	97.332
3200.000	0.865	33.394	-0.802	13.663	3199.915	0.480	-0.802	13.686	93.361
3300.000	1.070	19.393	0.709	14.389	3299.901	0.311	0.709	14.406	87.179
3400.000	0.700	17.121	2.174	14.879	3399.889	0.372	2.174	15.037	81.688

3500.000	0.808	10.456	3.451	15.187	3499.880	0.139	3.451	15.574	77.196
3600.000	1.019	1.015	5.034	15.330	3599.867	0.258	5.034	16.136	71.822
3700.000	1.374	342.642	7.067	14.988	3699.846	0.519	7.067	16.571	64.755
3800.000	1.522	355.665	9.536	14.530	3799.814	0.360	9.536	17.380	56.724
3900.000	2.363	353.954	12.910	14.213	3899.756	0.843	12.910	19.201	47.750
4000.000	2.260	344.344	16.858	13.463	3999.675	0.400	16.858	21.575	38.611
4100.000	2.648	338.996	20.913	12.103	4099.583	0.450	20.913	24.163	30.060
4200.000	2.411	356.702	25.170	11.155	4199.487	0.813	25.170	27.531	23.901
4300.000	2.556	338.752	29.349	10.225	4299.395	0.788	29.349	31.079	19.209
4400.000	3.031	326.729	33.638	7.967	4399.276	0.752	33.638	34.568	13.325
4500.000	3.244	343.042	38.554	5.691	4499.128	0.914	38.554	38.972	8.397
4600.000	4.010	347.642	44.677	4.118	4598.927	0.819	44.677	44.866	5.266
4700.000	4.365	335.381	51.552	1.784	4698.662	0.961	51.552	51.583	1.982
4800.000	4.603	323.493	58.237	-2.189	4798.358	0.957	58.237	58.279	357.848
4900.000	4.577	323.094	64.653	-6.972	4898.038	0.041	64.653	65.028	353.845
5000.000	5.098	330.127	71.696	-11.581	4997.682	0.789	71.696	72.626	350.824
5100.000	5.080	319.154	78.898	-16.690	5097.290	0.972	78.898	80.644	348.056
5200.000	4.566	312.875	84.956	-22.502	5196.936	0.736	84.956	87.886	345.165
5300.000	3.760	311.090	89.819	-27.891	5296.672	0.817	89.819	94.050	342.749
5400.000	4.303	309.247	94.348	-33.267	5396.424	0.559	94.348	100.041	340.577
5500.000	4.392	305.690	98.955	-39.283	5496.136	0.284	98.955	106.467	338.348
5600.000	4.974	313.623	104.181	-45.531	5595.803	0.869	104.181	113.696	336.393
5700.000	4.276	318.526	109.965	-51.139	5695.477	0.802	109.965	121.275	335.059
5800.000	4.817	316.329	115.796	-56.508	5795.162	0.568	115.796	128.849	333.988
5900.000	4.173	323.130	121.745	-61.591	5894.855	0.835	121.745	136.437	333.165
6000.000	3.629	335.385	127.532	-65.092	5994.624	0.993	127.532	143.183	332.960
6100.000	2.129	336.182	132.109	-67.160	6094.495	1.500	132.109	148.200	333.052
6200.000	0.703	45.238	134.240	-67.475	6194.467	1.989	134.240	150.244	333.314
6300.000	1.966	84.234	134.844	-65.333	6294.440	1.486	134.844	149.837	334.149
6400.000	2.922	90.844	134.979	-61.078	6394.348	0.995	134.979	148.155	335.653
6500.000	3.457	102.197	134.304	-55.583	6494.194	0.825	134.304	145.352	337.517
6600.000	3.488	114.832	132.390	-49.875	6594.011	0.764	132.390	141.473	339.357
6700.000	4.128	124.047	129.097	-44.132	6693.791	0.883	129.097	136.431	341.127

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