



Company: Noble Energy
Rig: Production/VES
API # 05-123-26816

Date: 3/27/13
Surveyor: Levi Sheldon

VS: 0.000
Lat : 40.47373

Long: -104.435

Well: Wells Ranch AA 21-08
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid North is 0.69 East of True No

Declination: 8.45
Depth Reference: Ground Level

Elevation: 4,718 Feet

Total Depth as Drilled: 6,925 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	0.545	17.635	0.453	0.144	99.998	0.545	0.453	0.476	17.635
200.000	0.305	329.405	1.136	0.153	199.996	0.411	1.136	1.146	7.653
300.000	0.458	322.642	1.682	-0.225	299.994	0.159	1.682	1.697	352.376
400.000	0.287	336.822	2.230	-0.566	399.992	0.193	2.230	2.300	345.758
500.000	0.086	25.113	2.528	-0.632	499.991	0.238	2.528	2.606	345.955
600.000	0.088	41.452	2.653	-0.550	599.991	0.025	2.653	2.710	348.292
700.000	0.127	22.358	2.813	-0.457	699.991	0.053	2.813	2.850	350.770
800.000	0.128	20.986	3.020	-0.375	799.991	0.003	3.020	3.043	352.923
900.000	0.122	42.215	3.203	-0.263	899.990	0.047	3.203	3.214	355.303
1000.000	0.221	3.778	3.475	-0.179	999.990	0.147	3.475	3.480	357.054
1100.000	0.344	359.214	3.968	-0.170	1099.989	0.125	3.968	3.972	357.544
1200.000	0.324	4.739	4.550	-0.151	1199.987	0.038	4.550	4.553	358.100
1300.000	0.316	21.976	5.088	-0.024	1299.985	0.096	5.088	5.088	359.725
1400.000	0.323	2.981	5.625	0.093	1399.984	0.106	5.625	5.626	0.952
1500.000	0.307	11.499	6.169	0.162	1499.982	0.049	6.169	6.171	1.500
1600.000	0.322	27.511	6.681	0.345	1599.981	0.089	6.681	6.690	2.955
1700.000	0.340	87.773	6.942	0.771	1699.979	0.333	6.942	6.985	6.337
1800.000	0.725	109.623	6.741	1.664	1799.975	0.429	6.741	6.943	13.862
1900.000	0.858	106.532	6.316	2.977	1899.965	0.139	6.316	6.982	25.240
2000.000	0.956	103.909	5.902	4.504	1999.953	0.106	5.902	7.425	37.350
2100.000	0.672	83.461	5.768	5.896	2099.943	0.402	5.768	8.249	45.629
2200.000	0.582	81.816	5.908	6.982	2199.937	0.092	5.908	9.146	49.764
2300.000	0.552	76.690	6.091	7.953	2299.932	0.059	6.091	10.018	52.554
2400.000	0.328	38.051	6.427	8.599	2399.929	0.360	6.427	10.735	53.224
2500.000	0.387	22.479	6.964	8.904	2499.927	0.113	6.964	11.304	51.970
2600.000	0.362	24.642	7.563	9.165	2599.925	0.028	7.563	11.883	50.469
2700.000	0.217	21.199	8.027	9.365	2699.924	0.146	8.027	12.334	49.400
2800.000	0.316	31.770	8.437	9.579	2799.923	0.110	8.437	12.765	48.624
2900.000	0.291	33.979	8.882	9.865	2899.921	0.027	8.882	13.275	48.002
3000.000	0.331	37.185	9.323	10.182	2999.920	0.043	9.323	13.805	47.522
3100.000	0.399	54.098	9.757	10.638	3099.918	0.127	9.757	14.435	47.475
3200.000	0.446	32.768	10.288	11.131	3199.915	0.163	10.288	15.157	47.253
3300.000	0.933	36.718	11.268	11.828	3299.908	0.490	11.268	16.336	46.390
3400.000	1.201	32.597	12.803	12.880	3399.890	0.278	12.803	18.161	45.170

3500.000	1.970	28.764	15.193	14.271	3499.851	0.776	15.193	20.844	43.209
3600.000	2.186	29.154	18.365	16.027	3599.786	0.217	18.365	24.375	41.112
3700.000	2.123	34.507	21.557	18.006	3699.715	0.211	21.557	28.087	39.871
3800.000	2.125	30.445	24.681	19.994	3799.646	0.150	24.681	31.764	39.011
3900.000	2.232	27.982	27.999	21.847	3899.574	0.142	27.999	35.514	37.964
4000.000	2.180	14.661	31.559	23.243	3999.501	0.514	31.559	39.195	36.371
4100.000	2.224	8.650	35.318	24.016	4099.427	0.235	35.318	42.709	34.215
4200.000	2.349	7.458	39.267	24.573	4199.347	0.134	39.267	46.322	32.038
4300.000	1.927	21.937	42.859	25.468	4299.278	0.682	42.859	49.854	30.720
4400.000	1.310	46.469	45.206	26.925	4399.239	0.914	45.206	52.617	30.778
4500.000	1.474	17.517	47.221	28.141	4499.211	0.714	47.221	54.970	30.793
4600.000	0.709	46.321	48.875	28.976	4599.192	0.919	48.875	56.819	30.662
4700.000	0.412	74.222	49.400	29.770	4699.188	0.395	49.400	57.677	31.074
4800.000	0.237	122.255	49.388	30.291	4799.186	0.309	49.388	57.937	31.522
4900.000	0.412	311.891	49.518	30.199	4899.185	0.647	49.518	58.000	31.377
5000.000	0.769	318.519	50.261	29.486	4999.180	0.363	50.261	58.272	30.399
5100.000	1.047	321.542	51.479	28.474	5099.167	0.282	51.479	58.829	28.948
5200.000	0.964	335.622	52.961	27.558	5199.152	0.260	52.961	59.702	27.490
5300.000	0.990	339.530	54.537	26.909	5299.138	0.072	54.537	60.814	26.262
5400.000	0.884	341.984	56.080	26.368	5399.124	0.113	56.080	61.970	25.182
5500.000	0.905	342.863	57.568	25.896	5499.112	0.025	57.568	63.125	24.220
5600.000	0.954	345.968	59.130	25.462	5599.099	0.070	59.130	64.379	23.297
5700.000	0.962	347.056	60.756	25.072	5699.085	0.020	60.756	65.726	22.424
5800.000	1.071	320.688	62.298	24.292	5799.070	0.476	62.298	66.866	21.302
5900.000	1.125	301.051	63.527	22.858	5899.052	0.378	63.527	67.515	19.790
6000.000	1.369	294.183	64.523	20.928	5999.028	0.285	64.523	67.832	17.970
6100.000	1.573	298.607	65.670	18.633	6098.995	0.233	65.670	68.262	15.841
6200.000	1.199	281.615	66.537	16.404	6198.966	0.551	66.537	68.529	13.849
6300.000	1.590	250.287	66.280	14.073	6298.938	0.842	66.280	67.758	11.987
6400.000	1.860	221.065	64.588	11.701	6398.894	0.909	64.588	65.639	10.268
6500.000	2.345	198.804	61.427	9.975	6498.828	0.941	61.427	62.232	9.223
6600.000	1.056	255.621	59.261	8.422	6598.788	1.976	59.261	59.856	8.088
6700.000	1.038	285.159	59.269	6.655	6698.772	0.534	59.269	59.641	6.407

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