



Company: Noble Energy
 Rig: Production/VES
 API # 05-123-25525
 Date: 9/22/13
 Surveyor: Levi Sheldon
 VS: 0.000
 Lat : 40.349
 Long: -104.626

Well: Tool G02-29
 Location: Weld County, Colorado
 North Reference: GRID
 Convergence: GRID North is 0.560 Degrees East
 Declination: 8.48
 Depth Reference: Ground Level
 Elevation: 4,684 Feet
 Total Depth as Drilled: 7,655 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	0.075	298.597	0.031	-0.058	100.000	0.075	0.031	0.066	298.597
200.000	1.077	269.659	0.057	-1.055	199.994	1.012	0.057	1.056	273.105
300.000	3.631	256.584	-0.683	-5.075	299.902	2.594	-0.683	5.121	262.333
400.000	6.114	260.793	-2.270	-13.413	399.533	2.507	-2.270	13.604	260.394
500.000	10.868	267.802	-3.485	-28.099	498.411	4.857	-3.485	28.314	262.931
600.000	13.269	266.078	-4.631	-48.972	596.194	2.427	-4.631	49.191	264.598
700.000	16.128	266.142	-6.351	-74.284	692.911	2.859	-6.351	74.555	265.113
800.000	18.759	266.893	-8.157	-104.203	788.304	2.641	-8.157	104.522	265.524
900.000	22.098	265.381	-10.545	-139.018	882.002	3.379	-10.545	139.417	265.662
1000.000	25.093	265.243	-13.819	-178.907	973.631	2.996	-13.819	179.439	265.583
1100.000	25.880	264.771	-17.566	-221.772	1063.900	0.812	-17.566	222.467	265.471
1200.000	26.202	265.255	-21.382	-265.507	1153.748	0.386	-21.382	266.366	265.396
1300.000	26.496	264.138	-25.486	-309.698	1243.359	0.576	-25.486	310.745	265.296
1400.000	26.358	263.604	-30.237	-353.949	1332.909	0.275	-30.237	355.238	265.117
1500.000	25.178	262.761	-35.391	-397.113	1422.964	1.235	-35.391	398.687	264.907
1600.000	24.439	262.220	-40.872	-438.712	1513.735	0.773	-40.872	440.612	264.678
1700.000	24.301	261.204	-46.818	-479.543	1604.825	0.441	-46.818	481.823	264.424
1800.000	24.279	262.734	-52.565	-520.272	1695.974	0.630	-52.565	522.921	264.231
1900.000	24.356	264.273	-57.223	-561.184	1787.102	0.638	-57.223	564.094	264.178
2000.000	24.196	265.288	-60.965	-602.126	1878.260	0.447	-60.965	605.204	264.219
2100.000	23.364	263.945	-64.740	-642.268	1969.770	0.993	-64.740	645.523	264.244
2200.000	24.415	265.745	-68.365	-682.598	2061.203	1.279	-68.365	686.013	264.281
2300.000	24.762	265.812	-71.428	-724.095	2152.134	0.348	-71.428	727.610	264.366
2400.000	24.543	264.534	-74.936	-765.657	2243.020	0.576	-74.936	769.315	264.410
2500.000	25.249	262.518	-79.691	-807.478	2333.729	1.104	-79.691	811.401	264.364
2600.000	25.317	263.838	-84.764	-849.882	2424.151	0.568	-84.764	854.098	264.304
2700.000	26.521	263.797	-89.471	-893.337	2514.090	1.204	-89.471	897.806	264.281
2800.000	27.520	262.062	-95.074	-938.415	2603.175	1.272	-95.074	943.219	264.215
2900.000	28.541	252.997	-105.256	-984.164	2691.485	4.377	-105.256	989.777	263.895
3000.000	28.228	263.670	-114.856	-1030.540	2779.519	5.078	-114.856	1036.925	263.641
3100.000	27.119	261.888	-120.680	-1076.620	2868.080	1.384	-120.680	1083.358	263.604
3200.000	26.445	262.144	-126.939	-1121.240	2957.353	0.684	-126.939	1128.400	263.541
3300.000	25.296	262.878	-132.632	-1164.500	3047.330	1.192	-132.632	1172.026	263.502
3400.000	23.365	262.355	-137.919	-1205.350	3138.444	1.943	-137.919	1213.218	263.472
3500.000	21.979	263.281	-142.747	-1243.590	3230.715	1.431	-142.747	1251.759	263.452

3600.000	21.337	264.644	-146.635	-1280.290	3323.655	0.816	-146.635	1288.662	263.466
3700.000	21.317	263.016	-150.543	-1316.450	3416.808	0.592	-150.543	1325.027	263.476
3800.000	19.430	262.433	-154.944	-1350.980	3510.548	1.898	-154.944	1359.837	263.457
3900.000	20.787	263.943	-159.007	-1385.120	3604.451	1.453	-159.007	1394.213	263.451
4000.000	22.867	263.737	-162.999	-1422.080	3697.277	2.082	-162.999	1431.391	263.461
4100.000	24.689	262.244	-167.938	-1462.090	3788.785	1.918	-167.938	1471.704	263.448
4200.000	24.504	262.934	-173.307	-1503.360	3879.712	0.342	-173.307	1513.321	263.424
4300.000	22.687	263.420	-178.068	-1543.110	3971.347	1.827	-178.068	1553.346	263.417
4400.000	22.551	263.547	-182.433	-1581.320	4063.655	0.145	-182.433	1591.807	263.419
4500.000	24.877	262.222	-187.436	-1621.220	4155.206	2.386	-187.436	1632.017	263.405
4600.000	22.919	260.755	-193.411	-1661.280	4246.629	2.046	-193.411	1672.502	263.359
4700.000	23.759	261.623	-199.474	-1700.430	4338.446	0.907	-199.474	1712.090	263.309
4800.000	25.409	263.430	-204.864	-1741.680	4429.380	1.813	-204.864	1753.683	263.291
4900.000	25.171	262.287	-210.173	-1784.060	4519.796	0.543	-210.173	1796.400	263.281
5000.000	23.216	263.404	-215.292	-1824.720	4611.009	2.008	-215.292	1837.377	263.271
5100.000	21.462	263.069	-219.764	-1862.460	4703.500	1.758	-219.764	1875.383	263.270
5200.000	19.823	264.841	-223.496	-1897.510	4797.078	1.754	-223.496	1910.630	263.282
5300.000	18.752	263.013	-226.976	-1930.360	4891.465	1.229	-226.976	1943.655	263.294
5400.000	18.159	262.806	-230.883	-1961.770	4986.321	0.597	-230.883	1975.310	263.288
5500.000	14.501	260.357	-234.933	-1989.580	5082.272	3.721	-234.933	2003.405	263.266
5600.000	13.370	260.219	-238.995	-2013.320	5179.327	1.131	-238.995	2027.456	263.230
5700.000	11.724	264.300	-241.968	-2034.830	5276.938	1.869	-241.968	2049.162	263.219
5800.000	11.332	262.719	-244.223	-2054.680	5374.920	0.504	-244.223	2069.144	263.222
5900.000	10.946	264.435	-246.388	-2073.880	5473.037	0.509	-246.388	2088.460	263.225
6000.000	10.428	266.198	-247.909	-2092.360	5571.302	0.612	-247.909	2106.991	263.243
6100.000	10.186	259.203	-250.166	-2110.070	5669.692	1.274	-250.166	2124.850	263.239
6200.000	9.978	263.441	-252.812	-2127.370	5768.149	0.770	-252.812	2142.335	263.223
6300.000	9.392	264.577	-254.573	-2144.100	5866.724	0.616	-254.573	2159.156	263.229
6400.000	10.573	265.168	-256.117	-2161.360	5965.208	1.186	-256.117	2176.483	263.242
6500.000	10.321	258.953	-258.606	-2179.300	6063.553	1.154	-258.606	2194.587	263.233
6600.000	9.127	256.278	-262.205	-2195.790	6162.115	1.276	-262.205	2211.394	263.190
6700.000	8.620	258.237	-265.614	-2210.840	6260.918	0.590	-265.614	2226.734	263.149
6800.000	7.204	274.496	-266.650	-2224.420	6359.976	2.635	-266.650	2240.350	263.164
6900.000	8.067	273.765	-265.698	-2237.680	6459.089	0.868	-265.698	2253.396	263.229
7000.000	9.004	270.718	-265.139	-2252.500	6557.981	1.040	-265.139	2268.053	263.287
7100.000	8.940	264.318	-265.810	-2268.060	6656.760	1.000	-265.810	2283.582	263.316
7200.000	8.121	260.501	-267.745	-2282.760	6755.654	0.995	-267.745	2298.405	263.310
7300.000	7.313	253.203	-270.750	-2295.820	6854.749	1.268	-270.750	2311.726	263.274
7350.000	7.711	251.657	-272.725	-2302.050	6904.320	0.893	-272.725	2318.145	263.244

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