



Company: Noble Energy
Rig: Producton / V.E.S.
API # 05-123-23196
Date: 1/1/2014
Surveyor: Norman Cowan
VS: 0.000
Lat : 40.176
Long: -104.646

Well: Moser H34-15
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid north is 0.55 Deg East of Tru
Declination: 8.44 Degrees
Depth Reference: Ground Level
Elevation: 4836 Feet
Total Depth as Drilled: 7303 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	0.374	337.459	0.302	-0.125	99.999	0.374	0.302	0.327	337.459
200.000	0.173	335.568	0.741	-0.313	199.998	0.201	0.741	0.804	337.103
300.000	0.179	341.095	1.026	-0.426	299.998	0.018	1.026	1.111	337.456
400.000	0.151	307.160	1.254	-0.582	399.997	0.100	1.254	1.382	335.117
500.000	0.195	329.086	1.479	-0.774	499.997	0.079	1.479	1.669	332.387
600.000	0.225	308.967	1.748	-1.014	599.996	0.079	1.748	2.021	329.900
700.000	0.271	292.827	1.963	-1.384	699.995	0.083	1.963	2.402	324.825
800.000	0.118	269.180	2.054	-1.704	799.995	0.170	2.054	2.669	320.308
900.000	0.177	321.582	2.173	-1.903	899.994	0.140	2.173	2.889	318.788
1000.000	0.160	272.554	2.300	-2.138	999.994	0.141	2.300	3.141	317.087
1100.000	0.111	233.737	2.249	-2.356	1099.994	0.101	2.249	3.257	313.671
1200.000	0.094	262.168	2.181	-2.516	1199.994	0.053	2.181	3.329	310.921
1300.000	0.111	231.270	2.109	-2.672	1299.993	0.057	2.109	3.404	308.279
1400.000	0.121	227.365	1.977	-2.826	1399.993	0.013	1.977	3.448	304.973
1500.000	0.142	277.100	1.920	-3.027	1499.993	0.113	1.920	3.585	302.389
1600.000	0.140	240.117	1.875	-3.257	1599.993	0.090	1.875	3.758	299.926
1700.000	0.175	351.024	1.965	-3.387	1699.992	0.261	1.965	3.915	300.120
1800.000	0.361	19.075	2.413	-3.308	1799.991	0.222	2.413	4.094	306.115
1900.000	0.959	55.680	3.182	-2.514	1899.985	0.703	3.182	4.056	321.693
2000.000	1.437	51.767	4.430	-0.838	1999.962	0.485	4.430	4.508	349.283
2100.000	1.977	42.587	6.475	1.313	2099.918	0.604	6.475	6.607	11.465
2200.000	2.265	18.187	9.622	3.097	2199.851	0.939	9.622	10.108	17.841
2300.000	2.401	355.025	13.586	3.532	2299.771	0.946	13.586	14.038	14.573
2400.000	1.901	333.486	17.157	2.610	2399.702	0.942	17.157	17.355	8.650
2500.000	1.907	309.619	19.702	0.588	2499.648	0.787	19.702	19.711	1.710
2600.000	1.815	305.674	21.686	-1.979	2599.595	0.158	21.686	21.777	354.785
2700.000	1.843	303.608	23.500	-4.605	2699.544	0.072	23.500	23.947	348.913
2800.000	1.961	298.144	25.197	-7.452	2799.489	0.216	25.197	26.276	343.524
2900.000	1.910	299.579	26.826	-10.410	2899.432	0.070	26.826	28.775	338.791
3000.000	1.853	289.161	28.179	-13.386	2999.379	0.346	28.179	31.197	334.590
3100.000	1.745	286.792	29.150	-16.372	3099.329	0.131	29.150	33.433	330.680
3200.000	1.704	278.733	29.816	-19.300	3199.284	0.246	29.816	35.517	327.085
3300.000	1.650	275.001	30.167	-22.204	3299.241	0.122	30.167	37.458	323.646
3400.000	1.836	259.908	30.012	-25.216	3399.196	0.493	30.012	39.199	319.964
3500.000	2.122	233.771	28.637	-28.286	3499.138	0.937	28.637	40.252	315.353

3600.000	1.988	224.747	26.310	-31.001	3599.074	0.350	26.310	40.661	310.321
3700.000	1.437	233.509	24.332	-33.231	3699.029	0.609	24.332	41.187	306.213
3800.000	1.407	241.640	23.003	-35.320	3798.998	0.204	23.003	42.150	303.076
3900.000	1.201	242.350	21.934	-37.329	3898.972	0.207	21.934	43.296	300.438
4000.000	1.400	246.157	20.953	-39.375	3998.946	0.217	20.953	44.603	298.020
4100.000	1.477	252.403	20.070	-41.720	4098.915	0.174	20.070	46.297	295.690
4200.000	1.489	250.868	19.255	-44.176	4198.881	0.042	19.255	48.190	293.550
4300.000	1.634	251.730	18.382	-46.757	4298.844	0.147	18.382	50.241	291.461
4400.000	1.678	256.886	17.603	-49.537	4398.803	0.155	17.603	52.571	289.563
4500.000	1.960	261.681	17.023	-52.654	4498.752	0.320	17.023	55.338	287.916
4600.000	2.058	255.879	16.338	-56.087	4598.691	0.226	16.338	58.418	286.240
4700.000	2.957	265.112	15.680	-60.398	4698.594	0.983	15.680	62.401	284.553
4800.000	2.753	260.441	15.061	-65.337	4798.470	0.309	15.061	67.050	282.981
4900.000	2.429	258.793	14.251	-69.784	4898.368	0.332	14.251	71.224	281.542
5000.000	2.314	257.482	13.401	-73.834	4998.282	0.128	13.401	75.040	280.288
5100.000	2.227	254.488	12.444	-77.676	5098.204	0.147	12.444	78.667	279.102
5200.000	1.605	253.460	11.526	-80.891	5198.147	0.623	11.526	81.708	278.109
5300.000	1.444	250.581	10.708	-83.421	5298.112	0.178	10.708	84.106	277.315
5400.000	1.096	247.817	9.928	-85.495	5398.087	0.353	9.928	86.070	276.624
5500.000	0.884	242.850	9.215	-87.067	5498.072	0.229	9.215	87.553	276.042
5600.000	0.742	236.441	8.506	-88.292	5598.062	0.168	8.506	88.701	275.503
5700.000	1.016	267.512	8.109	-89.718	5698.051	0.540	8.109	90.083	275.165
5800.000	1.083	276.157	8.172	-91.543	5798.034	0.172	8.172	91.907	275.101
5900.000	1.090	274.983	8.356	-93.429	5898.016	0.023	8.356	93.802	275.111
6000.000	0.796	265.527	8.385	-95.070	5998.003	0.331	8.385	95.439	275.040
6100.000	0.537	240.424	8.099	-96.170	6097.996	0.385	8.099	96.511	274.814
6200.000	0.465	213.335	7.529	-96.801	6197.992	0.245	7.529	97.093	274.447
6300.000	0.309	177.349	6.921	-97.011	6297.990	0.281	6.921	97.258	274.081
6400.000	0.208	158.300	6.483	-96.931	6397.989	0.131	6.483	97.148	273.826
6500.000	0.161	68.982	6.364	-96.733	6497.989	0.262	6.364	96.942	273.764
6600.000	0.651	3.292	6.982	-96.568	6597.986	0.603	6.982	96.821	274.136
6700.000	1.606	357.730	8.950	-96.591	6697.966	0.960	8.950	97.005	275.294
6800.000	1.073	34.473	11.122	-96.117	6797.940	0.984	11.122	96.758	276.601
6900.000	0.360	96.373	11.859	-95.275	6897.932	0.957	11.859	96.010	277.095
7000.000	0.808	145.247	11.245	-94.560	6997.927	0.632	11.245	95.227	276.782

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