



**Company:** Noble Energy

**Rig:** Production/Core-Tech

**API #** 05-123-26476

**Date:** 3/31/14

**Surveyor:** Mark Simmons

**VS:** 0.000

**Lat :** 40.46331

**Long:** -104.501

**Well:** Larson A 25-3X

**Location:** Weld County, Colorado

**North Reference:** Grid

**Convergence:** East To True North

**Declination:** 8.35

**Depth Reference:** RKB = Ground Level

**Elevation:** 4637

**Total Depth as Drilled:** 6975

**Lat & Long obtained by handheld GPS at wellhead**

MS 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	0.000
100.000	0.233	246.309	-0.082	-0.186	100.000	0.233	-0.082	0.203	246.309
200.000	0.259	258.487	-0.208	-0.593	199.999	0.058	-0.208	0.629	250.652
300.000	0.344	256.955	-0.321	-1.107	299.997	0.086	-0.321	1.153	253.823
400.000	0.240	234.337	-0.511	-1.570	399.996	0.154	-0.511	1.651	251.965
500.000	0.224	264.522	-0.652	-1.935	499.995	0.122	-0.652	2.042	251.378
600.000	0.636	269.036	-0.680	-2.685	599.992	0.413	-0.680	2.770	255.786
700.000	0.491	267.832	-0.706	-3.669	699.987	0.146	-0.706	3.736	259.112
800.000	0.590	322.392	-0.314	-4.411	799.984	0.503	-0.314	4.422	265.925
900.000	0.543	322.193	0.468	-5.016	899.979	0.046	0.468	5.038	275.329
1000.000	0.628	318.629	1.254	-5.669	999.973	0.092	1.254	5.806	282.472
1100.000	0.626	320.869	2.089	-6.376	1099.967	0.025	2.089	6.710	288.143
1200.000	0.745	333.349	3.094	-7.013	1199.960	0.190	3.094	7.665	293.810
1300.000	0.562	340.921	4.139	-7.465	1299.954	0.202	4.139	8.535	299.006
1400.000	0.452	348.952	4.989	-7.700	1399.950	0.131	4.989	9.175	302.938
1500.000	0.204	337.747	5.540	-7.843	1499.948	0.255	5.540	9.602	305.236
1600.000	0.452	35.784	6.025	-7.680	1599.947	0.385	6.025	9.761	308.114
1700.000	0.438	21.633	6.700	-7.308	1699.944	0.111	6.700	9.914	312.514
1800.000	0.368	104.957	6.972	-6.857	1799.942	0.538	6.972	9.779	315.478
1900.000	0.348	143.796	6.644	-6.367	1899.940	0.239	6.644	9.202	316.221
2000.000	0.421	155.230	6.065	-6.033	1999.938	0.105	6.065	8.555	315.151
2100.000	0.355	145.057	5.478	-5.702	2099.936	0.095	5.478	7.907	313.852
2200.000	0.453	134.685	4.946	-5.244	2199.933	0.122	4.946	7.208	313.327
2300.000	0.721	179.047	4.039	-4.952	2299.928	0.508	4.039	6.390	309.199
2400.000	0.743	216.756	2.890	-5.330	2399.921	0.474	2.890	6.063	298.468
2500.000	0.702	239.739	2.062	-6.247	2499.913	0.291	2.062	6.578	288.265
2600.000	0.348	212.377	1.496	-6.939	2599.909	0.424	1.496	7.098	282.168
2700.000	0.266	252.546	1.170	-7.323	2699.907	0.225	1.170	7.416	279.077
2800.000	0.326	249.636	1.001	-7.811	2799.906	0.062	1.001	7.875	277.305
2900.000	0.231	274.202	0.917	-8.279	2899.905	0.150	0.917	8.330	276.321
3000.000	0.297	264.868	0.909	-8.739	2999.904	0.078	0.909	8.786	275.937
3100.000	0.782	278.584	0.987	-9.671	3099.899	0.499	0.987	9.722	275.830
3200.000	1.362	287.515	1.447	-11.479	3199.881	0.602	1.447	11.570	277.184
3300.000	1.706	307.163	2.704	-13.799	3299.846	0.623	2.704	14.061	281.086
3400.000	1.643	317.630	4.662	-15.951	3399.804	0.312	4.662	16.618	286.291

3500.000	1.389	310.048	6.500	-17.844	3499.769	0.323	6.500	18.991	290.016
3600.000	1.452	323.721	8.302	-19.522	3599.738	0.344	8.302	21.214	293.038
3700.000	1.563	312.970	10.253	-21.270	3699.704	0.303	10.253	23.612	295.736
3800.000	1.494	320.888	12.194	-23.090	3799.668	0.222	12.194	26.112	297.839
3900.000	1.541	310.525	14.079	-24.934	3899.633	0.278	14.079	28.634	299.451
4000.000	1.645	294.146	15.540	-27.266	3999.595	0.465	15.540	31.383	299.680
4100.000	1.505	294.117	16.664	-29.774	4099.557	0.140	16.664	34.120	299.234
4200.000	1.683	306.551	18.075	-32.153	4199.519	0.388	18.075	36.885	299.342
4300.000	2.189	299.456	19.889	-34.996	4299.462	0.559	19.889	40.252	299.610
4400.000	2.286	282.867	21.272	-38.603	4399.386	0.652	21.272	44.076	298.857
4500.000	2.394	284.610	22.243	-42.568	4499.303	0.129	22.243	48.029	297.588
4600.000	2.575	270.206	22.778	-46.835	4599.210	0.648	22.778	52.080	295.935
4700.000	2.633	274.752	22.976	-51.370	4699.107	0.214	22.976	56.274	294.097
4800.000	2.540	274.143	23.326	-55.869	4799.005	0.097	23.326	60.543	292.661
4900.000	2.365	275.850	23.697	-60.131	4898.913	0.190	23.697	64.632	291.509
5000.000	1.909	264.530	23.748	-63.842	4998.844	0.619	23.748	68.116	290.404
5100.000	1.214	257.697	23.363	-66.535	5098.806	0.718	23.363	70.518	289.348
5200.000	0.967	216.994	22.464	-68.078	5198.790	0.793	22.464	71.689	288.262
5300.000	0.693	170.969	21.193	-68.491	5298.780	0.696	21.193	71.695	287.194
5400.000	0.623	113.949	20.376	-67.899	5398.775	0.631	20.376	70.890	286.704
5500.000	0.865	88.147	20.180	-66.648	5498.766	0.407	20.180	69.636	286.845
5600.000	0.826	89.800	20.207	-65.173	5598.755	0.045	20.207	68.234	287.226
5700.000	1.025	91.627	20.184	-63.558	5698.742	0.201	20.184	66.686	287.618
5800.000	0.984	102.924	19.966	-61.827	5798.727	0.202	19.966	64.971	287.897
5900.000	0.753	76.248	19.931	-60.352	5898.716	0.459	19.931	63.558	288.275
6000.000	0.854	82.777	20.180	-58.974	5998.706	0.136	20.180	62.331	288.891
6100.000	0.936	93.278	20.227	-57.419	6098.694	0.183	20.227	60.878	289.406
6200.000	0.772	77.472	20.327	-55.946	6198.683	0.286	20.327	59.525	289.968
6300.000	1.139	75.105	20.729	-54.328	6298.669	0.370	20.729	58.148	290.884
6400.000	0.831	100.693	20.850	-52.655	6398.654	0.530	20.850	56.632	291.602
6500.000	1.081	123.246	20.198	-51.153	6498.641	0.447	20.198	54.996	291.547
6600.000	0.773	143.878	19.136	-49.966	6598.628	0.450	19.136	53.505	290.956
6700.000	0.771	126.806	18.188	-49.030	6698.619	0.229	18.188	52.295	290.353