



Company: Noble Energy
Well: Schmier 19-7G
API #: 05-123-14897
Rig Name: Production/Lightning
State/County: Colorado/Weld
Latitude: 40.299, Longitude: -104.704
GRID North is 0.510 Degrees East of True North
VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : Ground Level

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01_ed.ut

Minimum Curvature Method

Report Date/Time: 11/6/2012 / 10:40

Vaughn Energy Services

Henderson, Colorado

866-835-8333

Randy Holcomb

RKB=Ground Level

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	****
100.000	0.523	188.386	99.999	-0.451	-0.067	-0.451	0.456	188.386	0.523
200.000	0.431	188.649	199.995	-1.275	-0.190	-1.275	1.289	188.463	0.091
300.000	0.249	96.392	299.994	-1.671	-0.031	-1.671	1.671	181.050	0.506
400.000	0.268	255.408	399.994	-1.754	-0.042	-1.754	1.755	181.363	0.509
500.000	0.079	336.944	499.993	-1.749	-0.296	-1.749	1.774	189.591	0.269
600.000	0.876	24.805	599.989	-0.992	-0.002	-0.992	0.992	180.109	0.825
700.000	0.867	46.650	699.978	0.222	0.869	0.222	0.897	75.676	0.330
800.000	0.598	62.425	799.969	0.983	1.881	0.983	2.123	62.424	0.334
900.000	0.927	40.611	899.961	1.838	2.870	1.838	3.408	57.365	0.433
1000.000	0.597	81.341	999.952	2.531	3.912	2.531	4.659	57.100	0.614
1100.000	0.565	87.026	1099.947	2.635	4.919	2.635	5.580	61.825	0.066
1200.000	0.471	106.416	1199.943	2.544	5.805	2.544	6.338	66.333	0.198
1300.000	0.249	86.135	1299.941	2.443	6.415	2.443	6.864	69.154	0.252
1400.000	0.438	353.904	1399.940	2.838	6.591	2.838	7.176	66.706	0.512
1500.000	0.363	130.018	1499.939	3.014	6.793	3.014	7.432	66.070	0.744
1600.000	0.385	151.053	1599.937	2.517	7.198	2.517	7.625	70.728	0.138
1700.000	0.599	113.116	1699.933	2.018	7.841	2.018	8.096	75.570	0.378
1800.000	0.649	171.418	1799.928	1.253	8.406	1.253	8.499	81.524	0.609
1900.000	0.733	176.106	1899.921	0.055	8.534	0.055	8.534	89.631	0.101
2000.000	0.839	192.883	1999.912	-1.296	8.414	-1.296	8.513	98.759	0.252
2100.000	1.036	209.786	2099.899	-2.795	7.802	-2.795	8.287	109.711	0.338
2200.000	1.467	199.411	2199.875	-4.787	6.927	-4.787	8.420	124.649	0.485
2300.000	0.724	181.608	2299.856	-6.626	6.484	-6.626	9.270	135.621	0.809
2400.000	0.592	135.683	2399.850	-7.627	6.827	-7.627	10.236	138.168	0.527
2500.000	0.461	114.534	2499.846	-8.164	7.554	-8.164	11.122	137.222	0.232
2600.000	0.448	126.385	2599.843	-8.562	8.234	-8.562	11.879	136.119	0.095
2700.000	0.300	116.948	2699.841	-8.913	8.782	-8.913	12.512	135.423	0.160
2800.000	0.237	45.725	2799.840	-8.887	9.163	-8.887	12.765	134.123	0.317
2900.000	0.255	311.740	2899.839	-8.595	9.145	-8.595	12.550	133.222	0.360
3000.000	0.437	318.073	2999.837	-8.163	8.725	-8.163	11.948	133.095	0.185
3100.000	0.346	323.282	3099.835	-7.637	8.290	-7.637	11.272	132.655	0.097
3200.000	0.783	283.402	3199.830	-7.237	7.445	-7.237	10.383	134.189	0.563
3300.000	0.842	277.871	3299.820	-6.978	6.053	-6.978	9.238	139.061	0.098
3400.000	0.809	278.376	3399.810	-6.775	4.627	-6.775	8.204	145.668	0.033

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N-S FT	+E-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
3500.000	0.675	275.160	3499.801	-6.619	3.341	-6.619	7.414	153.214	0.140
3600.000	0.735	252.455	3599.794	-6.759	2.143	-6.759	7.091	162.412	0.284
3700.000	0.791	244.671	3699.785	-7.248	0.907	-7.248	7.305	172.871	0.118
3800.000	0.354	290.583	3799.780	-7.435	-0.007	-7.435	7.435	180.054	0.602
3900.000	0.522	199.419	3899.778	-7.756	-0.448	-7.756	7.769	183.304	0.637
4000.000	0.624	247.818	3999.774	-8.392	-1.104	-8.392	8.464	187.492	0.479
4100.000	0.527	324.696	4099.770	-8.222	-1.874	-8.222	8.433	192.838	0.720
4200.000	0.591	336.215	4199.765	-7.375	-2.347	-7.375	7.739	197.656	0.129
4300.000	0.322	1.136	4299.762	-6.623	-2.550	-6.623	7.096	201.057	0.328
4400.000	0.103	341.442	4399.761	-6.257	-2.573	-6.257	6.765	202.350	0.228
4500.000	0.049	332.012	4499.761	-6.135	-2.621	-6.135	6.671	203.134	0.055
4600.000	0.377	318.923	4599.760	-5.849	-2.857	-5.849	6.509	206.037	0.330
4700.000	0.624	313.785	4699.757	-5.224	-3.467	-5.224	6.270	213.571	0.250
4800.000	2.044	305.570	4799.727	-3.809	-5.311	-3.809	6.536	234.348	1.429
4900.000	2.576	309.096	4899.645	-1.355	-8.506	-1.355	8.613	260.950	0.550
5000.000	2.310	310.760	4999.554	1.378	-11.776	1.378	11.857	276.675	0.275
5100.000	2.330	316.206	5099.473	4.161	-14.709	4.161	15.287	285.795	0.221
5200.000	1.856	340.517	5199.408	7.154	-16.656	7.154	18.127	293.246	0.996
5300.000	1.445	354.315	5299.366	9.935	-17.321	9.935	19.968	299.838	0.569
5400.000	1.591	355.281	5399.331	12.573	-17.560	12.573	21.597	305.602	0.148
5500.000	1.711	11.448	5499.290	15.419	-17.378	15.419	23.232	311.581	0.479
5600.000	1.709	28.719	5599.246	18.189	-16.365	18.189	24.468	318.023	0.513
5700.000	2.830	33.491	5699.166	21.556	-14.286	21.556	25.860	326.466	1.136
5800.000	2.834	32.747	5799.044	25.694	-11.587	25.694	28.186	335.727	0.037
5900.000	3.415	23.587	5898.896	30.502	-9.058	30.502	31.819	343.461	0.764
6000.000	3.625	18.953	5998.707	36.221	-6.840	36.221	36.861	349.307	0.353
6100.000	4.161	30.804	6098.478	42.327	-3.955	42.327	42.511	354.662	0.964
6200.000	4.042	37.461	6198.222	48.240	0.046	48.240	48.240	0.055	0.491
6300.000	3.375	41.061	6298.013	53.257	4.123	53.257	53.416	4.427	0.706
6400.000	3.169	47.487	6397.850	57.344	8.094	57.344	57.913	8.034	0.420
6500.000	2.436	61.342	6497.731	60.231	11.996	60.231	61.414	11.264	0.993
6600.000	2.574	83.169	6597.637	61.517	16.090	61.517	63.587	14.658	0.958
6700.000	3.564	85.685	6697.493	62.018	21.420	62.018	65.613	19.054	0.999
6800.000	2.935	99.166	6797.333	61.844	27.047	61.844	67.500	23.622	0.986
6900.000	2.018	102.721	6897.239	61.048	31.292	61.048	68.601	27.139	0.929
7000.000	1.000	103.074	6997.203	60.463	33.860	60.463	69.299	29.249	1.019
7100.000	1.630	112.654	7097.176	59.718	36.023	59.718	69.742	31.099	0.665
7150.000	1.294	111.828	7147.159	59.234	37.203	59.234	69.948	32.131	0.673

HORIZONTAL DISPLACEMENT IS 69.948 FEET AT 32.131 DEGREES									
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