



Company: Noble Energy
Well: Schmidt No. 30-11G
API: 05-123-16052
Rig Name: Production/Lightning Wireline
State/County: Colorado/ Weld
Latitude: 40.281, Longitude: -104.708
GRID North is 0.510 Degrees East of True North
VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = Ground Level

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01_ed.ut

Minimum Curvature Method

Report Date/Time: 3/23/2012 / 18:27

Vaughn Energy Services
Henderson, Colorado
866-835-8333
Jason Kinchelow

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	0.620	113.071	99.998	-0.212	0.498	-0.212	0.541	113.071	0.620
200.000	0.135	86.865	199.996	-0.417	1.113	-0.417	1.188	110.562	0.502
300.000	0.292	315.370	299.995	-0.229	1.051	-0.229	1.076	102.308	0.395
400.000	0.621	313.901	399.992	0.328	0.481	0.328	0.583	55.728	0.329
500.000	0.417	303.033	499.988	0.902	-0.214	0.902	0.928	346.632	0.225
600.000	0.319	332.326	599.986	1.347	-0.649	1.347	1.495	334.279	0.209
700.000	0.466	349.347	699.983	1.993	-0.853	1.993	2.168	336.826	0.187
800.000	0.735	325.359	799.978	2.921	-1.293	2.921	3.194	336.123	0.362
900.000	0.357	307.222	899.973	3.637	-1.905	3.637	4.105	332.351	0.411
1000.000	0.783	318.442	999.968	4.336	-2.606	4.336	5.059	328.992	0.439
1100.000	0.742	331.913	1099.959	5.418	-3.364	5.418	6.378	328.165	0.183
1200.000	0.644	354.587	1199.952	6.549	-3.722	6.549	7.533	330.388	0.289
1300.000	0.578	4.894	1299.947	7.610	-3.732	7.610	8.476	333.876	0.128
1400.000	0.378	6.672	1399.943	8.440	-3.651	8.440	9.196	336.609	0.200
1500.000	0.347	4.922	1499.941	9.070	-3.586	9.070	9.753	338.425	0.033
1600.000	0.302	16.929	1599.940	9.624	-3.484	9.624	10.235	340.101	0.082
1700.000	0.521	2.248	1699.937	10.330	-3.389	10.330	10.872	341.836	0.241
1800.000	0.296	19.840	1799.934	11.027	-3.284	11.027	11.506	343.418	0.255
1900.000	0.404	333.940	1899.933	11.587	-3.351	11.587	12.062	343.871	0.291
2000.000	0.731	345.122	1999.928	12.520	-3.669	12.520	13.046	343.665	0.343
2100.000	1.337	334.394	2099.911	14.188	-4.337	14.188	14.836	343.002	0.634
2200.000	1.607	331.085	2199.878	16.468	-5.520	16.468	17.369	341.470	0.283
2300.000	1.691	350.094	2299.837	19.149	-6.452	19.149	20.207	341.381	0.551
2400.000	1.672	348.038	2399.794	22.030	-7.008	22.030	23.118	342.354	0.063
2500.000	2.240	347.521	2499.735	25.366	-7.733	25.366	26.518	343.046	0.568
2600.000	1.914	345.981	2599.670	28.894	-8.559	28.894	30.135	343.499	0.331
2700.000	1.936	347.227	2699.613	32.161	-9.337	32.161	33.489	343.810	0.047
2800.000	2.465	1.097	2799.540	35.959	-9.670	35.959	37.236	344.949	0.747
2900.000	2.454	343.075	2899.449	40.158	-10.252	40.158	41.446	345.679	0.770
3000.000	2.708	2.966	2999.350	44.566	-10.753	44.566	45.845	346.435	0.926
3100.000	2.367	5.954	3099.251	48.979	-10.417	48.979	50.074	347.994	0.366
3200.000	2.283	1.662	3199.169	53.024	-10.145	53.024	53.985	349.169	0.193
3300.000	2.143	10.685	3299.095	56.852	-9.740	56.852	57.680	350.278	0.375
3400.000	2.412	32.667	3399.018	60.460	-8.258	60.460	61.021	352.222	0.907

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	3.236	43.468	3498.896	64.280	-5.181	64.280	64.488	355.392	0.977
3600.000	3.802	64.798	3598.712	67.740	-0.239	67.740	67.740	359.798	1.416
3700.000	3.174	77.832	3698.527	69.735	5.468	69.735	69.949	4.483	1.008
3800.000	2.796	92.542	3798.393	70.211	10.611	70.211	71.008	8.594	0.851
3900.000	2.518	104.865	3898.286	69.539	15.171	69.539	71.175	12.307	0.634
4000.000	2.480	121.426	3998.192	67.848	19.139	67.848	70.496	15.753	0.720
4100.000	2.682	130.986	4098.091	65.185	22.752	65.185	69.042	19.241	0.475
4200.000	2.385	143.831	4197.994	61.971	25.746	61.971	67.106	22.561	0.639
4300.000	3.283	153.673	4297.872	57.725	28.244	57.725	64.264	26.072	1.018
4400.000	2.737	169.572	4397.735	52.810	29.946	52.810	60.710	29.555	0.992
4500.000	2.192	184.602	4497.643	48.556	30.225	48.556	57.195	31.901	0.841
4600.000	1.343	168.986	4597.595	45.500	30.295	45.500	54.663	33.657	0.968
4700.000	0.990	143.156	4697.575	43.658	31.037	43.658	53.566	35.410	0.625
4800.000	0.577	150.306	4797.565	42.528	31.805	42.528	53.106	36.791	0.424
4900.000	0.442	227.800	4897.562	41.832	31.768	41.832	52.527	37.214	0.647
5000.000	0.549	195.976	4997.559	41.112	31.350	41.112	51.701	37.328	0.291
5100.000	0.112	262.840	5097.557	40.638	31.121	40.638	51.186	37.445	0.516
5200.000	0.554	272.980	5197.555	40.651	30.541	40.651	50.846	36.917	0.444
5300.000	0.477	315.690	5297.552	40.974	29.767	40.974	50.646	35.998	0.382
5400.000	0.143	265.279	5397.550	41.262	29.352	41.262	50.637	35.426	0.401
5500.000	0.599	230.903	5497.548	40.922	28.822	40.922	50.053	35.157	0.488
5600.000	0.506	277.345	5597.544	40.649	27.979	40.649	49.347	34.540	0.444
5700.000	1.180	307.078	5697.533	41.326	26.719	41.326	49.212	32.885	0.782
5800.000	0.902	344.653	5797.517	42.706	25.690	42.706	49.837	31.029	0.720
5900.000	1.128	312.343	5897.502	44.128	24.754	44.128	50.597	29.290	0.605
6000.000	0.795	313.233	5997.488	45.266	23.521	45.266	51.012	27.457	0.334
6100.000	0.717	202.100	6097.483	45.162	22.780	45.162	50.582	26.767	1.247
6200.000	1.475	164.046	6197.465	43.345	22.899	43.345	49.022	27.847	1.012
6300.000	0.806	150.572	6297.445	41.494	23.598	41.494	47.735	29.627	0.716
6400.000	0.628	196.684	6397.438	40.357	23.787	40.357	46.845	30.516	0.585
6500.000	0.916	121.370	6497.431	39.416	24.312	39.416	46.310	31.667	0.970
6600.000	0.894	89.960	6597.419	39.000	25.775	39.000	46.748	33.460	0.490
6700.000	0.994	96.971	6697.406	38.895	27.416	38.895	47.587	35.179	0.153
6800.000	1.244	122.645	6797.387	38.204	29.192	38.204	48.080	37.383	0.554
6900.000	2.538	160.960	6897.334	35.525	30.829	35.525	47.036	40.951	1.742
7000.000	3.931	168.009	6997.172	30.078	32.263	30.078	44.109	47.008	1.446
7100.000	3.494	172.808	7096.963	23.702	33.357	23.702	40.920	54.604	0.537
7200.000	1.820	175.645	7196.852	19.095	33.859	19.095	38.872	60.579	1.678

HORIZONTAL DISPLACEMENT IS
38.872 FEET AT 60.579 DEGREES