



Company: Noble Energy
 Well: Hanson Leslie E GU #1
 API #: 05-123-08594
 Rig Name: Production
 State/County: Colorado/Weld
 Latitude: 40.192, Longitude: -104.600
 GRID North is 0.580 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: hnsnlsieegu1-01_ed.ut
 Minimum Curvature Method
 Report Date/Time: 11/15/2011 / 09:58

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	1.163	190.799	99.993	-0.997	-0.190	-0.997	1.015	190.799	1.163
200.000	0.877	198.239	199.977	-2.721	-0.620	-2.721	2.791	192.835	0.314
300.000	1.018	185.629	299.964	-4.333	-0.947	-4.333	4.435	192.327	0.251
400.000	0.907	193.855	399.950	-5.985	-1.224	-5.985	6.109	191.553	0.177
500.000	0.775	201.649	499.939	-7.383	-1.663	-7.383	7.568	192.692	0.174
600.000	0.767	216.088	599.930	-8.553	-2.307	-8.553	8.859	195.094	0.194
700.000	1.078	191.667	699.917	-10.016	-2.891	-10.016	10.425	196.103	0.495
800.000	0.649	236.671	799.907	-11.248	-3.555	-11.248	11.796	197.538	0.771
900.000	0.510	245.193	899.901	-11.746	-4.432	-11.746	12.554	200.671	0.163
1000.000	0.508	265.915	999.898	-11.964	-5.278	-11.964	13.077	203.805	0.183
1100.000	0.411	258.464	1099.894	-12.068	-6.072	-12.068	13.509	206.710	0.114
1200.000	0.522	256.375	1199.891	-12.247	-6.867	-12.247	14.040	209.279	0.112
1300.000	0.335	250.335	1299.888	-12.453	-7.585	-12.453	14.581	211.346	0.192
1400.000	0.310	297.408	1399.887	-12.426	-8.101	-12.426	14.834	213.101	0.259
1500.000	0.580	285.880	1499.884	-12.163	-8.828	-12.163	15.029	215.971	0.282
1600.000	0.313	291.778	1599.881	-11.924	-9.568	-11.924	15.288	218.745	0.270
1700.000	0.473	260.472	1699.878	-11.891	-10.229	-11.891	15.685	220.704	0.262
1800.000	0.628	262.068	1799.874	-12.034	-11.178	-12.034	16.425	222.888	0.156
1900.000	0.963	283.790	1899.864	-11.910	-12.537	-11.910	17.292	226.470	0.445
2000.000	1.164	311.337	1999.847	-11.039	-14.115	-11.039	17.919	231.973	0.542
2100.000	1.240	319.304	2099.825	-9.548	-15.583	-9.548	18.276	238.505	0.184
2200.000	1.619	342.080	2199.795	-7.384	-16.724	-7.384	18.281	246.178	0.675
2300.000	2.026	357.549	2299.745	-4.274	-17.234	-4.274	17.756	256.072	0.635
2400.000	1.983	354.828	2399.684	-0.785	-17.465	-0.785	17.483	267.426	0.104
2500.000	2.191	357.342	2499.617	2.847	-17.710	2.847	17.937	279.132	0.227
2600.000	2.444	352.112	2599.536	6.868	-18.091	6.868	19.351	290.789	0.330
2700.000	2.389	355.385	2699.447	11.058	-18.551	11.058	21.597	300.797	0.149
2800.000	2.418	354.861	2799.359	15.235	-18.908	15.235	24.282	308.861	0.036
2900.000	2.259	352.889	2899.275	19.292	-19.341	19.292	27.317	314.927	0.178
3000.000	2.218	1.460	2999.199	23.182	-19.536	23.182	30.316	319.879	0.337
3100.000	1.899	12.132	3099.135	26.736	-19.138	26.736	32.880	324.405	0.497
3200.000	1.512	25.821	3199.091	29.544	-18.215	29.544	34.708	328.345	0.559
3300.000	1.421	42.781	3299.059	31.642	-16.798	31.642	35.825	332.038	0.442
3400.000	1.520	64.083	3399.027	33.132	-14.762	33.132	36.272	335.985	0.552

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	1.521	65.271	3498.991	34.268	-12.363	34.268	36.430	340.161	0.032
3600.000	0.495	67.335	3598.974	34.989	-10.759	34.989	36.606	342.908	1.027
3700.000	0.183	89.975	3698.973	35.156	-10.200	35.156	36.606	343.820	0.334
3800.000	0.412	86.961	3798.971	35.175	-9.682	35.175	36.483	344.611	0.229
3900.000	0.486	65.199	3898.968	35.372	-8.938	35.372	36.484	345.819	0.185
4000.000	0.291	99.418	3998.966	35.509	-8.302	35.509	36.466	346.841	0.295
4100.000	0.175	92.767	4098.965	35.460	-7.899	35.460	36.329	347.442	0.119
4200.000	0.396	39.863	4198.964	35.718	-7.525	35.718	36.502	348.104	0.323
4300.000	0.436	46.841	4298.961	36.244	-7.025	36.244	36.919	349.030	0.064
4400.000	0.650	24.877	4398.957	37.019	-6.509	37.019	37.587	350.028	0.295

HORIZONTAL DISPLACEMENT IS
37.587 FEET AT 350.028 DEGREES