



Company: Noble Energy
Well: Devotie 2-6
API #: 05-123-14919
Rig Name: Production/Lightning
State/County: Colorado/Weld
Latitude: 40.336, 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: devotie2-6-01_ed.ut
Minimum Curvature Method
Report Date/Time: 12/8/2011 / 19:55

Vaughn Energy Services
Henderson, Colorado
866-835-8333
James Proulx

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	0.283	356.989	100.000	0.247	-0.013	0.247	0.247	356.989	0.283
200.000	0.164	34.932	199.999	0.611	0.056	0.611	0.614	5.211	0.184
300.000	0.189	33.060	299.998	0.866	0.228	0.866	0.896	14.713	0.026
400.000	0.102	38.505	399.998	1.074	0.373	1.074	1.137	19.139	0.089
500.000	0.070	25.411	499.998	1.199	0.454	1.199	1.282	20.752	0.037
600.000	0.117	34.846	599.998	1.338	0.539	1.338	1.442	21.934	0.049
700.000	0.121	52.622	699.998	1.485	0.681	1.485	1.634	24.622	0.037
800.000	0.123	33.746	799.997	1.638	0.824	1.638	1.834	26.702	0.040
900.000	0.263	301.852	899.997	1.848	0.689	1.848	1.972	20.436	0.294
1000.000	0.411	294.109	999.995	2.116	0.167	2.116	2.122	4.506	0.154
1100.000	0.397	291.681	1099.993	2.390	-0.482	2.390	2.438	348.599	0.022
1200.000	0.480	280.975	1199.990	2.598	-1.215	2.598	2.868	334.938	0.117
1300.000	0.586	307.198	1299.986	2.987	-2.033	2.987	3.613	325.752	0.263
1400.000	0.635	286.930	1399.980	3.457	-2.971	3.457	4.558	319.328	0.220
1500.000	0.485	289.061	1499.975	3.756	-3.900	3.756	5.415	313.925	0.152
1600.000	0.386	298.635	1599.972	4.056	-4.595	4.056	6.129	311.432	0.122
1700.000	0.350	325.423	1699.970	4.468	-5.064	4.468	6.754	311.425	0.174
1800.000	0.388	0.349	1799.968	5.059	-5.235	5.059	7.280	314.018	0.225
1900.000	0.582	23.860	1899.965	5.862	-5.028	5.862	7.723	319.382	0.274
2000.000	0.820	34.158	1999.957	6.919	-4.420	6.919	8.210	327.424	0.268
2100.000	0.961	21.506	2099.945	8.290	-3.712	8.290	9.083	335.882	0.241
2200.000	0.879	357.556	2199.933	9.837	-3.437	9.837	10.420	340.740	0.390
2300.000	1.028	340.807	2299.919	11.451	-3.765	11.451	12.054	341.800	0.314
2400.000	1.095	328.974	2399.902	13.116	-4.552	13.116	13.884	340.861	0.229
2500.000	1.212	321.562	2499.882	14.763	-5.702	14.763	15.826	338.883	0.190
2600.000	1.039	323.505	2599.863	16.321	-6.899	16.321	17.719	337.086	0.177
2700.000	1.050	323.873	2699.846	17.790	-7.979	17.790	19.498	335.845	0.013
2800.000	0.953	326.903	2799.831	19.227	-8.973	19.227	21.218	334.982	0.111
2900.000	0.781	327.325	2899.819	20.497	-9.795	20.497	22.717	334.459	0.172
3000.000	0.833	315.169	2999.809	21.586	-10.675	21.586	24.081	333.686	0.179
3100.000	0.668	311.443	3099.801	22.487	-11.624	22.487	25.314	332.664	0.173
3200.000	0.482	299.715	3199.796	23.081	-12.426	23.081	26.214	331.703	0.218
3300.000	0.675	290.331	3299.791	23.495	-13.345	23.495	27.020	330.404	0.214
3400.000	0.731	284.356	3399.783	23.858	-14.516	23.858	27.927	328.683	0.092

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	0.603	270.578	3499.776	24.021	-15.660	24.021	28.675	326.899	0.205
3600.000	0.198	282.210	3599.774	24.063	-16.354	24.063	29.095	325.798	0.411
3700.000	0.201	200.991	3699.773	23.936	-16.586	23.936	29.121	325.281	0.259
3800.000	0.578	215.384	3799.771	23.361	-16.941	23.361	28.857	324.051	0.387
3900.000	0.565	244.496	3899.766	22.737	-17.678	22.737	28.801	322.135	0.288
4000.000	0.341	253.654	3999.763	22.441	-18.409	22.441	29.026	320.637	0.235
4100.000	0.501	287.525	4099.760	22.489	-19.112	22.489	29.513	319.641	0.289
4200.000	0.393	276.753	4199.757	22.661	-19.870	22.661	30.138	318.755	0.137
4300.000	0.653	287.550	4299.753	22.873	-20.754	22.873	30.885	317.782	0.277
4400.000	0.439	269.816	4399.748	23.044	-21.680	23.044	31.639	316.747	0.270
4500.000	0.624	279.164	4499.744	23.129	-22.601	23.129	32.338	315.662	0.203
4600.000	0.779	305.599	4599.737	23.612	-23.691	23.612	33.448	314.904	0.355
4700.000	0.769	302.935	4699.728	24.372	-24.807	24.372	34.777	314.494	0.038
4800.000	0.706	295.585	4799.719	25.003	-25.926	25.003	36.018	313.962	0.113
4900.000	0.531	284.502	4899.714	25.385	-26.930	25.385	37.008	313.309	0.211
5000.000	0.738	296.374	4999.707	25.787	-27.956	25.787	38.033	312.689	0.243
5100.000	0.506	313.197	5099.702	26.375	-28.854	26.375	39.092	312.430	0.293
5200.000	0.336	251.368	5199.699	26.584	-29.454	26.584	39.677	312.068	0.456
5300.000	0.138	337.734	5299.699	26.602	-29.777	26.602	39.929	311.777	0.355
5400.000	0.363	263.754	5399.698	26.679	-30.137	26.679	40.250	311.516	0.351
5500.000	0.468	241.890	5499.695	26.452	-30.813	26.452	40.609	310.645	0.188
5600.000	0.591	235.073	5599.691	25.964	-31.595	25.964	40.895	309.413	0.137
5700.000	0.350	229.103	5699.688	25.470	-32.248	25.470	41.093	308.302	0.246
5800.000	0.556	234.347	5799.684	24.987	-32.873	24.987	41.292	307.238	0.211
5900.000	0.242	221.769	5899.682	24.547	-33.409	24.547	41.457	306.306	0.324
6000.000	0.417	237.644	5999.680	24.194	-33.857	24.194	41.613	305.549	0.196
6100.000	0.520	238.681	6099.677	23.763	-34.552	23.763	41.935	304.518	0.103
6200.000	0.521	223.909	6199.673	23.200	-35.255	23.200	42.204	303.348	0.134
6300.000	0.642	232.540	6299.668	22.532	-36.015	22.532	42.482	302.031	0.149
6400.000	0.559	202.330	6399.662	21.740	-36.645	21.740	42.608	300.680	0.323
6500.000	0.796	197.642	6499.655	20.628	-37.040	20.628	42.397	299.114	0.243
6600.000	0.374	221.799	6599.650	19.723	-37.468	19.723	42.342	297.762	0.479
6700.000	0.956	201.389	6699.643	18.702	-37.990	18.702	42.344	296.211	0.619
6800.000	0.881	195.438	6799.630	17.184	-38.499	17.184	42.160	294.054	0.121
6900.000	0.387	183.377	6899.624	16.105	-38.724	16.105	41.940	292.583	0.509
7000.000	0.702	194.117	6999.619	15.174	-38.893	15.174	41.749	291.313	0.329
7100.000	0.463	160.576	7099.614	14.200	-38.908	14.200	41.419	290.050	0.406
HORIZONTAL DISPLACEMENT IS 41.419 FEET AT 290.050 DEGREES									