



Company: Noble Energy  
 Lease / Well: Meyer B / 2-1  
 API#: 05-123-13449  
 Rig Name: Production / Lightning Wireline  
 State / County: Colorado / Weld County  
 Latitude: 40.434, Longitude: -104.510  
 GRID North is 0.640 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: outrun\_ed.ut  
 Minimum Curvature Method  
 Report Date/Time: 8/25/2011 / 09:34

Vaughn Energy Services  
 Henderson, CO  
 303-853-4976  
 Robert Davis

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	0.166	173.458	100.000	-0.144	0.017	-0.144	0.145	173.458	0.166
200.000	0.442	177.651	199.998	-0.674	0.049	-0.674	0.675	175.853	0.277
300.000	0.135	200.021	299.997	-1.170	0.024	-1.170	1.170	178.808	0.322
400.000	0.272	233.222	399.996	-1.423	-0.206	-1.423	1.438	188.248	0.176
500.000	0.078	261.346	499.996	-1.575	-0.464	-1.575	1.642	196.404	0.207
600.000	0.131	197.429	599.996	-1.695	-0.565	-1.695	1.786	198.445	0.119
700.000	0.191	213.482	699.995	-1.942	-0.691	-1.942	2.062	199.588	0.074
800.000	0.174	188.781	799.995	-2.231	-0.806	-2.231	2.372	199.864	0.080
900.000	0.150	90.461	899.995	-2.383	-0.698	-2.383	2.483	196.332	0.246
1000.000	0.180	97.227	999.994	-2.403	-0.412	-2.403	2.438	189.718	0.035
1100.000	0.178	317.026	1099.994	-2.310	-0.362	-2.310	2.338	188.905	0.336
1200.000	0.248	13.995	1199.993	-1.986	-0.415	-1.986	2.029	191.809	0.213
1300.000	0.231	333.998	1299.993	-1.595	-0.451	-1.595	1.657	195.794	0.165
1400.000	0.199	349.773	1399.992	-1.243	-0.570	-1.243	1.367	204.641	0.067
1500.000	0.328	13.428	1499.991	-0.794	-0.534	-0.794	0.957	213.952	0.166
1600.000	0.264	62.062	1599.990	-0.408	-0.265	-0.408	0.486	212.998	0.251
1700.000	0.394	72.145	1699.988	-0.194	0.266	-0.194	0.330	126.126	0.143
1800.000	0.369	49.160	1799.986	0.122	0.837	0.122	0.846	81.737	0.154
1900.000	0.119	82.316	1899.985	0.346	1.184	0.346	1.233	73.712	0.277
2000.000	0.324	129.806	1999.984	0.179	1.504	0.179	1.515	83.225	0.259
2100.000	0.194	215.246	2099.983	-0.141	1.624	-0.141	1.630	94.955	0.364
2200.000	0.427	159.054	2199.982	-0.627	1.659	-0.627	1.774	110.705	0.357
2300.000	0.434	147.392	2299.979	-1.294	1.996	-1.294	2.379	122.953	0.088
2400.000	0.311	169.097	2399.977	-1.880	2.252	-1.880	2.933	129.856	0.185
2500.000	0.442	184.523	2499.975	-2.531	2.273	-2.531	3.401	138.072	0.164
2600.000	0.227	216.060	2599.973	-3.075	2.126	-3.075	3.738	145.343	0.275
2700.000	0.540	239.651	2699.971	-3.473	1.602	-3.473	3.825	155.233	0.344
2800.000	0.423	260.104	2799.968	-3.775	0.833	-3.775	3.865	167.562	0.206
2900.000	0.562	245.942	2899.964	-4.038	0.021	-4.038	4.038	179.696	0.184
3000.000	0.639	268.608	2999.958	-4.252	-0.984	-4.252	4.364	193.034	0.248
3100.000	0.523	296.257	3099.954	-4.063	-1.951	-4.063	4.507	205.654	0.300
3200.000	0.492	309.402	3199.950	-3.589	-2.693	-3.589	4.486	216.883	0.120
3300.000	0.811	0.909	3299.944	-2.608	-3.013	-2.608	3.985	229.121	0.635
3400.000	0.958	0.479	3399.932	-1.064	-2.995	-1.064	3.179	250.437	0.147

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	1.064	9.832	3499.916	0.687	-2.829	0.687	2.912	283.649	0.196
3600.000	1.097	359.188	3599.899	2.560	-2.684	2.560	3.709	313.636	0.203
3700.000	0.845	348.501	3699.884	4.239	-2.845	4.239	5.105	326.134	0.310
3800.000	0.798	335.997	3799.874	5.598	-3.275	5.598	6.486	329.668	0.185
3900.000	0.682	349.458	3899.866	6.819	-3.668	6.819	7.743	331.728	0.209
4000.000	0.436	326.535	3999.861	7.722	-3.986	7.722	8.690	332.695	0.328
4100.000	0.309	288.852	4099.859	8.127	-4.452	8.127	9.266	331.287	0.269
4200.000	0.282	300.492	4199.858	8.339	-4.919	8.339	9.681	329.463	0.066
4300.000	0.519	294.680	4299.855	8.653	-5.542	8.653	10.275	327.358	0.240
4400.000	0.388	251.194	4399.852	8.732	-6.275	8.732	10.753	324.301	0.357
4500.000	0.292	272.788	4499.851	8.635	-6.850	8.635	11.023	321.576	0.159
4600.000	0.406	233.753	4599.849	8.438	-7.391	8.438	11.217	318.786	0.257
4700.000	0.406	239.531	4699.846	8.049	-7.982	8.049	11.336	315.239	0.041
4800.000	0.734	241.818	4799.841	7.567	-8.852	7.567	11.646	310.523	0.328
4900.000	0.508	230.758	4899.835	6.984	-9.761	6.984	12.002	305.583	0.254
5000.000	0.446	223.298	4999.832	6.420	-10.371	6.420	12.197	301.756	0.088
5100.000	0.451	228.457	5099.829	5.875	-10.933	5.875	12.412	298.251	0.041
5200.000	0.491	215.758	5199.825	5.266	-11.478	5.266	12.629	294.645	0.112
5300.000	0.646	216.184	5299.821	4.463	-12.062	4.463	12.861	290.306	0.155
5400.000	0.610	166.414	5399.815	3.490	-12.269	3.490	12.756	285.880	0.530
5500.000	0.790	148.675	5499.808	2.384	-11.786	2.384	12.025	281.435	0.280
5600.000	1.212	148.050	5599.792	0.898	-10.868	0.898	10.905	274.722	0.422
5700.000	1.537	164.946	5699.764	-1.294	-9.960	-1.294	10.044	262.595	0.516
5800.000	1.720	170.229	5799.723	-4.069	-9.357	-4.069	10.203	246.500	0.237
5900.000	2.075	174.795	5899.669	-7.351	-8.938	-7.351	11.573	230.564	0.385
6000.000	2.077	179.146	5999.603	-10.966	-8.747	-10.966	14.027	218.575	0.158
6100.000	1.942	178.371	6099.541	-14.472	-8.672	-14.472	16.871	210.929	0.138
6200.000	2.151	177.344	6199.478	-18.041	-8.536	-18.041	19.958	205.322	0.212
6300.000	2.119	185.641	6299.408	-21.755	-8.631	-21.755	23.405	201.640	0.310
6400.000	2.217	179.128	6399.337	-25.529	-8.783	-25.529	26.998	198.986	0.265
6500.000	2.309	171.415	6499.259	-29.455	-8.453	-29.455	30.644	196.013	0.318
6600.000	2.656	161.420	6599.166	-33.643	-7.414	-33.643	34.450	192.429	0.554
6700.000	2.523	166.620	6699.064	-37.980	-6.167	-37.980	38.477	189.223	0.270
6800.000	2.350	170.608	6798.973	-42.143	-5.323	-42.143	42.478	187.199	0.242
6850.000	2.431	166.463	6848.930	-44.186	-4.908	-44.186	44.457	186.338	0.382

<div> HORIZONTAL DISPLACEMENT IS  44.457 FEET AT 186.338 DEGREES </div>
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