



Company: Anadarko Petroleum  
 Well: Berig-UPRR #42-35  
 API: 05-123-12700  
 Rig Name: Production/ Canary  
 State/County: Colorado/Weld  
 Latitude: 40.270, Longitude: -104.737  
 Directions are relative to 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-de\_01.ut

Minimum Curvature Method

Report Date/Time: 9/26/2013 / 14:56

VAUGHN ENERGY SERVICES

HENDERSON, COLORADO

303-853-4976

SEAN BRATT

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	0.407	139.483	99.999	-0.270	0.231	-0.270	0.355	139.483	0.407
200.000	0.504	127.411	199.996	-0.807	0.811	-0.807	1.144	134.870	0.136
300.000	0.270	160.617	299.994	-1.296	1.238	-1.296	1.793	136.315	0.315
400.000	0.504	93.380	399.992	-1.544	1.756	-1.544	2.338	131.340	0.471
500.000	0.550	99.603	499.988	-1.650	2.668	-1.650	3.137	121.744	0.073
600.000	0.498	92.593	599.983	-1.750	3.575	-1.750	3.980	116.084	0.082
700.000	0.522	110.436	699.980	-1.929	4.436	-1.929	4.837	113.499	0.160
800.000	0.594	96.628	799.975	-2.148	5.378	-2.148	5.791	111.769	0.152
900.000	0.557	110.536	899.970	-2.378	6.349	-2.378	6.779	110.535	0.144
1000.000	0.564	124.726	999.965	-2.829	7.208	-2.829	7.743	111.428	0.139
1100.000	0.554	125.139	1099.960	-3.387	8.008	-3.387	8.694	112.928	0.011
1200.000	0.634	106.617	1199.955	-3.824	8.933	-3.824	9.717	113.172	0.207
1300.000	0.607	111.329	1299.949	-4.175	9.957	-4.175	10.796	112.747	0.058
1400.000	0.557	114.458	1399.944	-4.568	10.892	-4.568	11.811	112.754	0.059
1500.000	0.095	106.850	1499.942	-4.794	11.414	-4.794	12.380	112.781	0.463
1600.000	0.288	141.633	1599.942	-5.014	11.649	-5.014	12.682	113.290	0.217
1700.000	0.515	175.610	1699.939	-5.659	11.839	-5.659	13.122	115.548	0.320
1800.000	0.476	240.973	1799.936	-6.309	11.510	-6.309	13.126	118.727	0.536
1900.000	0.934	231.632	1899.928	-7.017	10.508	-7.017	12.635	123.733	0.471
2000.000	1.096	235.552	1999.913	-8.063	9.080	-8.063	12.144	131.606	0.176
2100.000	1.255	237.961	2099.892	-9.185	7.364	-9.185	11.772	141.281	0.166
2200.000	1.226	249.002	2199.868	-10.149	5.437	-10.149	11.514	151.823	0.240
2300.000	1.302	252.012	2299.844	-10.884	3.357	-10.884	11.390	162.857	0.101
2400.000	1.431	255.819	2399.816	-11.540	1.065	-11.540	11.590	174.726	0.158
2500.000	1.435	255.591	2499.784	-12.158	-1.358	-12.158	12.234	186.375	0.007
2600.000	1.342	260.196	2599.755	-12.669	-3.725	-12.669	13.205	196.384	0.145
2700.000	1.306	264.929	2699.728	-12.969	-6.013	-12.969	14.295	204.875	0.115
2800.000	1.334	264.059	2799.702	-13.190	-8.306	-13.190	15.588	212.198	0.035
2900.000	1.238	264.424	2899.677	-13.416	-10.539	-13.416	17.060	218.153	0.096
3000.000	1.114	264.769	2999.655	-13.609	-12.582	-13.609	18.535	222.754	0.125
3100.000	1.166	256.771	3099.636	-13.931	-14.541	-13.931	20.137	226.227	0.167
3200.000	1.398	261.600	3199.611	-14.342	-16.738	-14.342	22.042	229.409	0.255
3300.000	1.261	267.661	3299.584	-14.565	-19.044	-14.565	23.975	232.591	0.196
3400.000	1.589	268.653	3399.553	-14.643	-21.530	-14.643	26.037	235.781	0.329
3500.000	2.176	280.156	3499.499	-14.340	-24.785	-14.340	28.635	239.946	0.695

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
3600.000	2.464	280.389	3599.417	-13.618	-28.768	-13.618	31.828	244.668	0.289
3700.000	2.569	286.602	3699.320	-12.590	-33.031	-12.590	35.349	249.135	0.292
3800.000	2.771	288.476	3799.212	-11.183	-37.471	-11.183	39.105	253.382	0.219
3900.000	2.803	288.788	3899.093	-9.630	-42.078	-9.630	43.166	257.109	0.035
4000.000	2.868	280.528	3998.971	-8.386	-46.852	-8.386	47.597	259.853	0.413
4100.000	2.221	282.544	4098.872	-7.508	-51.203	-7.508	51.750	261.658	0.653
4200.000	1.802	272.935	4198.811	-7.006	-54.664	-7.006	55.112	262.696	0.536
4300.000	1.695	261.303	4298.764	-7.149	-57.697	-7.149	58.138	262.936	0.370
4400.000	2.064	244.898	4398.711	-8.137	-60.789	-8.137	61.331	262.376	0.649
4500.000	2.297	241.378	4498.639	-9.861	-64.179	-9.861	64.932	261.265	0.269
4600.000	2.320	250.569	4598.558	-11.494	-67.847	-11.494	68.814	260.384	0.371
4700.000	1.505	260.021	4698.502	-12.395	-71.050	-12.395	72.123	260.104	0.871
4800.000	1.201	284.903	4798.475	-12.354	-73.356	-12.354	74.389	260.441	0.654
4900.000	0.972	302.570	4898.457	-11.628	-75.083	-11.628	75.978	261.197	0.403
5000.000	0.954	307.431	4998.443	-10.666	-76.458	-10.666	77.199	262.059	0.084
5100.000	0.681	308.244	5098.432	-9.792	-77.586	-9.792	78.201	262.807	0.273
5200.000	0.217	326.567	5198.429	-9.266	-78.157	-9.266	78.704	263.239	0.480
5300.000	0.227	288.519	5298.428	-9.045	-78.449	-9.045	78.969	263.423	0.145
5400.000	0.629	290.146	5398.425	-8.793	-79.152	-8.793	79.639	263.661	0.402
5500.000	0.722	286.140	5498.418	-8.429	-80.272	-8.429	80.714	264.006	0.104
5600.000	0.632	309.075	5598.412	-7.906	-81.306	-7.906	81.689	264.446	0.283
5700.000	0.708	297.265	5698.405	-7.275	-82.284	-7.275	82.605	264.947	0.157
5800.000	0.515	316.475	5798.399	-6.666	-83.143	-6.666	83.409	265.416	0.279
5900.000	0.741	288.466	5898.393	-6.135	-84.066	-6.135	84.289	265.826	0.375
6000.000	0.611	302.540	5998.386	-5.644	-85.128	-5.644	85.315	266.207	0.210
6100.000	0.373	306.912	6098.383	-5.162	-85.838	-5.162	85.993	266.559	0.240
6200.000	0.363	307.579	6198.381	-4.773	-86.349	-4.773	86.481	266.836	0.011
6300.000	0.368	281.766	6298.379	-4.514	-86.915	-4.514	87.032	267.027	0.163
6400.000	0.330	234.674	6398.377	-4.615	-87.464	-4.615	87.586	266.979	0.281
6500.000	0.567	236.317	6498.374	-5.057	-88.112	-5.057	88.257	266.715	0.237
6600.000	0.674	212.878	6598.368	-5.825	-88.843	-5.825	89.034	266.249	0.273
6700.000	0.727	176.146	6698.361	-6.952	-89.120	-6.952	89.390	265.539	0.444
6800.000	0.808	183.045	6798.352	-8.289	-89.115	-8.289	89.499	264.686	0.123
6900.000	0.850	176.445	6898.342	-9.733	-89.106	-9.733	89.636	263.766	0.104
7000.000	0.605	177.320	6998.334	-11.001	-89.035	-11.001	89.712	262.957	0.245
7100.000	0.782	164.534	7098.326	-12.186	-88.829	-12.186	89.661	262.189	0.234
7200.000	0.961	142.691	7198.315	-13.511	-88.139	-13.511	89.168	261.285	0.374

HORIZONTAL DISPLACEMENT IS  
89.168 FEET AT 261.285 DEGREES