

Company: Anadarko Petroleum
 Well: Rocky MTN Fuel Co Unit G #2
 API: 05-123-10062
 Rig Name: Production/ Canary
 State/County: Colorado/Weld
 Latitude: 40.069, Longitude: -104.901
 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: 7/29/2013 / 15:14

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	0.291	57.650	100.000	0.136	0.215	0.136	0.254	57.650	0.291
200.000	0.104	329.224	199.999	0.350	0.383	0.350	0.519	47.554	0.307
300.000	0.532	333.389	299.997	0.844	0.128	0.844	0.853	8.640	0.429
400.000	0.794	342.585	399.991	1.920	-0.287	1.920	1.942	351.492	0.281
500.000	0.832	335.076	499.981	3.240	-0.801	3.240	3.337	346.118	0.113
600.000	1.191	341.887	599.965	4.887	-1.430	4.887	5.092	343.689	0.378
700.000	1.569	341.006	699.936	7.169	-2.199	7.169	7.499	342.950	0.378
800.000	1.479	343.894	799.900	9.703	-3.002	9.703	10.157	342.808	0.118
900.000	1.740	346.176	899.861	12.418	-3.723	12.418	12.964	343.310	0.269
1000.000	1.522	343.682	999.820	15.167	-4.459	15.167	15.809	343.617	0.230
1100.000	1.722	345.799	1099.780	17.898	-5.201	17.898	18.638	343.797	0.209
1200.000	1.490	350.085	1199.741	20.635	-5.793	20.635	21.433	344.318	0.261
1300.000	1.072	9.107	1299.716	22.841	-5.869	22.841	23.583	345.589	0.591
1400.000	1.223	2.602	1399.696	24.831	-5.672	24.831	25.471	347.132	0.199
1500.000	0.899	6.129	1499.679	26.677	-5.540	26.677	27.247	348.268	0.331
1600.000	0.762	14.841	1599.668	28.099	-5.286	28.099	28.592	349.346	0.186
1700.000	0.557	28.402	1699.661	29.170	-4.885	29.170	29.576	350.494	0.256
1800.000	0.492	72.184	1799.658	29.729	-4.245	29.729	30.030	351.874	0.396
1900.000	0.261	121.384	1899.656	29.742	-3.642	29.742	29.964	353.018	0.377
2000.000	0.281	107.105	1999.655	29.551	-3.214	29.551	29.725	353.793	0.070
2100.000	0.357	132.738	2099.653	29.267	-2.751	29.267	29.396	354.631	0.160
2200.000	0.311	109.102	2199.651	28.967	-2.265	28.967	29.056	355.528	0.144
2300.000	0.332	103.018	2299.650	28.813	-1.726	28.813	28.865	356.571	0.040
2400.000	0.409	91.481	2399.648	28.738	-1.087	28.738	28.759	357.834	0.107
2500.000	0.449	84.838	2499.645	28.765	-0.340	28.765	28.767	359.324	0.064
2600.000	0.339	73.335	2599.643	28.885	0.334	28.885	28.887	0.663	0.135
2700.000	0.348	81.657	2699.641	29.014	0.918	29.014	29.028	1.813	0.051
2800.000	0.302	107.814	2799.639	28.977	1.470	28.977	29.014	2.904	0.154
2900.000	0.530	100.318	2899.637	28.813	2.176	28.813	28.896	4.320	0.234
3000.000	0.428	78.668	2999.633	28.804	2.998	28.804	28.960	5.942	0.206
3100.000	0.347	83.750	3099.631	28.910	3.665	28.910	29.142	7.226	0.088
3200.000	0.564	87.152	3199.628	28.968	4.458	28.968	29.309	8.749	0.219
3300.000	0.324	100.525	3299.625	28.941	5.228	28.941	29.409	10.239	0.260
3400.000	0.434	105.790	3399.622	28.786	5.869	28.786	29.378	11.525	0.115
3500.000	0.461	151.427	3499.620	28.330	6.426	28.330	29.049	12.780	0.348

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	0.502	198.317	3599.616	27.561	6.481	27.561	28.312	13.233	0.385
3700.000	0.517	205.430	3699.612	26.738	6.150	26.738	27.436	12.953	0.065
3800.000	0.555	217.614	3799.608	25.947	5.660	25.947	26.557	12.307	0.120
3900.000	0.885	236.833	3899.600	25.141	4.718	25.141	25.580	10.630	0.405
4000.000	1.130	244.640	3999.585	24.296	3.181	24.296	24.503	7.459	0.280
4100.000	1.202	246.717	4099.564	23.459	1.327	23.459	23.496	3.236	0.084
4200.000	1.589	255.937	4199.534	22.707	-0.982	22.707	22.729	357.524	0.446
4300.000	1.557	264.832	4299.497	22.248	-3.680	22.248	22.550	350.608	0.246
4400.000	1.760	279.453	4399.455	22.378	-6.548	22.378	23.316	343.691	0.467
4500.000	1.892	299.418	4499.406	23.441	-9.500	23.441	25.293	337.938	0.646
4600.000	1.929	308.976	4599.350	25.310	-12.246	25.310	28.117	334.180	0.320
4700.000	1.246	323.515	4699.312	27.243	-14.201	27.243	30.722	332.468	0.787
4800.000	1.039	316.204	4799.292	28.772	-15.475	28.772	32.670	331.726	0.253
4900.000	0.990	290.798	4899.277	29.733	-16.911	29.733	34.206	330.371	0.449
5000.000	1.052	273.152	4999.261	30.091	-18.635	30.091	35.394	328.230	0.319
5100.000	0.982	249.618	5099.246	29.843	-20.356	29.843	36.124	325.702	0.421
5200.000	1.192	247.888	5199.228	29.153	-22.123	29.153	36.596	322.807	0.212
5300.000	0.997	252.763	5299.209	28.503	-23.917	28.503	37.208	320.000	0.216
5400.000	1.018	239.785	5399.194	27.798	-25.516	27.798	37.733	317.452	0.229
5500.000	0.915	237.673	5499.180	26.924	-26.958	26.924	38.101	314.964	0.109
5600.000	0.919	240.577	5599.167	26.104	-28.331	26.104	38.523	312.657	0.047
5700.000	0.738	252.679	5699.156	25.518	-29.644	25.518	39.115	310.722	0.250
5800.000	0.665	249.375	5799.149	25.122	-30.802	25.122	39.748	309.200	0.084
5900.000	0.524	246.328	5899.144	24.734	-31.764	24.734	40.258	307.907	0.145
6000.000	0.478	237.704	5999.140	24.328	-32.535	24.328	40.624	306.787	0.088
6100.000	0.285	239.190	6099.138	23.978	-33.101	23.978	40.873	305.919	0.193
6200.000	0.411	232.794	6199.136	23.633	-33.601	23.633	41.079	305.120	0.132
6300.000	0.357	206.976	6299.133	23.138	-34.028	23.138	41.149	304.214	0.180
6400.000	0.319	182.492	6399.132	22.582	-34.182	22.582	40.968	303.451	0.148
6500.000	0.266	165.582	6499.131	22.079	-34.136	22.079	40.654	302.895	0.100
6600.000	0.114	118.834	6599.130	21.806	-33.991	21.806	40.384	302.681	0.206
6700.000	0.402	196.055	6699.129	21.421	-34.001	21.421	40.186	302.211	0.393
6800.000	0.607	184.242	6799.125	20.554	-34.137	20.554	39.848	301.053	0.229
6900.000	0.765	193.267	6899.118	19.376	-34.330	19.376	39.420	299.441	0.190
7000.000	1.085	178.881	6999.105	17.780	-34.464	17.780	38.780	297.290	0.393
7100.000	1.408	174.521	7099.081	15.611	-34.328	15.611	37.711	294.453	0.337
7200.000	1.612	188.095	7199.047	12.995	-34.409	12.995	36.781	290.690	0.410
7300.000	1.917	196.590	7298.999	9.999	-35.085	9.999	36.482	285.908	0.401
7400.000	1.529	197.948	7398.954	7.127	-35.974	7.127	36.673	281.206	0.391
7500.000	0.908	193.977	7498.931	5.089	-36.576	5.089	36.928	277.921	0.626
7600.000	0.672	192.875	7598.921	3.748	-36.898	3.748	37.088	275.801	0.237
7700.000	0.422	173.091	7698.917	2.811	-36.984	2.811	37.091	274.347	0.310
7800.000	0.339	196.321	7798.915	2.162	-37.023	2.162	37.086	273.342	0.174
7900.000	0.289	204.784	7898.913	1.649	-37.212	1.649	37.249	272.538	0.068
8000.000	0.298	250.825	7998.912	1.335	-37.563	1.335	37.587	272.035	0.230
HORIZONTAL DISPLACEMENT IS 37.587 FEET AT 272.035 DEGREES									