



Company: Anadarko Petroleum
 Well: Gordon Turkey Farms Pool 1
 API: 05-123-07219
 Rig Name: Production/ VES
 State/County: Colorado/Weld
 Latitude: 40.147, Longitude: -104.869
 Directions are relative to True North
 VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB= Ground Level

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: h gyro-de_01.ut
 Minimum Curvature Method
 Report Date/Time: 4/7/2014 / 09:37

Vaughn Energy Services
 Henderson, CO 80640
 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	0.402	173.609	99.999	-0.349	0.039	-0.349	0.351	173.609	0.402
200.000	0.193	158.186	199.998	-0.853	0.141	-0.853	0.865	170.643	0.222
300.000	0.209	168.863	299.997	-1.189	0.238	-1.189	1.212	168.659	0.041
400.000	0.270	160.293	399.996	-1.589	0.353	-1.589	1.628	167.476	0.070
500.000	0.276	164.391	499.995	-2.043	0.497	-2.043	2.103	166.321	0.021
600.000	0.273	165.846	599.994	-2.506	0.620	-2.506	2.582	166.097	0.008
700.000	0.194	152.869	699.993	-2.888	0.756	-2.888	2.986	165.333	0.095
800.000	0.161	150.099	799.993	-3.161	0.903	-3.161	3.287	164.054	0.034
900.000	0.088	161.779	899.992	-3.355	0.997	-3.355	3.500	163.450	0.077
1000.000	0.191	183.461	999.992	-3.594	1.011	-3.594	3.734	164.290	0.114
1100.000	0.135	207.144	1099.992	-3.865	0.947	-3.865	3.980	166.230	0.087
1200.000	0.141	281.005	1199.992	-3.946	0.773	-3.946	4.021	168.920	0.166
1300.000	0.182	267.253	1299.991	-3.931	0.493	-3.931	3.961	172.851	0.057
1400.000	0.096	266.585	1399.991	-3.943	0.250	-3.943	3.951	176.367	0.087
1500.000	0.140	276.104	1499.991	-3.935	0.046	-3.935	3.935	179.336	0.048
1600.000	0.159	291.156	1599.990	-3.872	-0.205	-3.872	3.878	183.029	0.043
1700.000	0.165	303.313	1699.990	-3.743	-0.454	-3.743	3.771	186.919	0.035
1800.000	0.203	291.929	1799.989	-3.598	-0.739	-3.598	3.673	191.606	0.053
1900.000	0.246	258.011	1899.989	-3.576	-1.114	-3.576	3.746	197.297	0.137
2000.000	0.207	282.928	1999.988	-3.581	-1.500	-3.581	3.882	202.734	0.105
2100.000	0.232	278.519	2099.987	-3.510	-1.877	-3.510	3.980	208.132	0.030
2200.000	0.239	274.145	2199.986	-3.465	-2.285	-3.465	4.151	213.402	0.019
2300.000	0.408	258.925	2299.985	-3.518	-2.842	-3.518	4.523	218.934	0.188
2400.000	0.242	261.437	2399.983	-3.618	-3.401	-3.618	4.965	223.224	0.167
2500.000	0.199	252.899	2499.982	-3.701	-3.775	-3.701	5.287	225.571	0.054
2600.000	0.245	246.109	2599.982	-3.838	-4.137	-3.838	5.643	227.142	0.053
2700.000	0.188	235.937	2699.981	-4.017	-4.468	-4.017	6.009	228.044	0.068
2800.000	0.209	243.713	2799.980	-4.190	-4.768	-4.190	6.348	228.693	0.034
2900.000	0.240	254.890	2899.979	-4.325	-5.134	-4.325	6.713	229.887	0.054
3000.000	0.331	247.839	2999.978	-4.489	-5.604	-4.489	7.180	231.304	0.097
3100.000	0.335	252.589	3099.977	-4.686	-6.151	-4.686	7.732	232.701	0.028
3200.000	0.443	289.408	3199.974	-4.645	-6.794	-4.645	8.230	235.643	0.266
3300.000	0.503	303.122	3299.971	-4.277	-7.526	-4.277	8.657	240.394	0.128
3400.000	0.555	328.733	3399.967	-3.623	-8.145	-3.623	8.915	246.020	0.240
3500.000	0.480	321.492	3499.963	-2.882	-8.657	-2.882	9.124	251.588	0.099

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	0.650	328.843	3599.958	-2.069	-9.211	-2.069	9.441	257.341	0.185
3700.000	0.562	336.776	3699.952	-1.133	-9.698	-1.133	9.764	263.339	0.121
3800.000	0.477	332.486	3799.948	-0.312	-10.084	-0.312	10.089	268.226	0.094
3900.000	0.409	332.991	3899.945	0.375	-10.438	0.375	10.445	272.057	0.068
4000.000	0.335	343.450	3999.943	0.973	-10.684	0.973	10.728	275.205	0.100
4100.000	0.319	345.578	4099.941	1.522	-10.836	1.522	10.943	277.998	0.020
4200.000	0.394	351.357	4199.940	2.131	-10.957	2.131	11.162	281.008	0.083
4300.000	0.360	331.060	4299.937	2.746	-11.161	2.746	11.494	283.823	0.137
4400.000	0.379	338.282	4399.935	3.328	-11.435	3.328	11.910	286.229	0.050
4500.000	0.372	352.919	4499.933	3.958	-11.598	3.958	12.254	288.843	0.096
4600.000	0.369	4.303	4599.931	4.601	-11.613	4.601	12.492	291.613	0.074
4700.000	0.368	7.570	4699.929	5.241	-11.547	5.241	12.681	294.411	0.021
4800.000	0.390	37.102	4799.927	5.830	-11.300	5.830	12.715	297.291	0.194
4900.000	0.475	46.935	4899.924	6.384	-10.791	6.384	12.538	300.610	0.113
5000.000	0.479	33.831	4999.921	7.015	-10.256	7.015	12.425	304.371	0.109
5100.000	0.469	49.894	5099.917	7.625	-9.710	7.625	12.346	308.141	0.133
5200.000	0.391	32.258	5199.915	8.177	-9.216	8.177	12.320	311.582	0.153
5300.000	0.352	25.449	5299.912	8.743	-8.902	8.743	12.477	314.484	0.058
5400.000	0.341	13.129	5399.911	9.310	-8.702	9.310	12.744	316.935	0.075
5500.000	0.347	12.313	5499.909	9.897	-8.570	9.897	13.091	319.111	0.008
5600.000	0.403	356.627	5599.907	10.544	-8.526	10.544	13.560	321.042	0.116
5700.000	0.338	1.833	5699.905	11.190	-8.537	11.190	14.075	322.660	0.073
5800.000	0.199	306.067	5799.904	11.587	-8.668	11.587	14.470	323.202	0.280
5900.000	0.212	248.569	5899.903	11.621	-8.979	11.621	14.686	322.308	0.198
6000.000	0.554	235.705	5999.901	11.282	-9.550	11.282	14.781	319.750	0.351
6100.000	0.545	232.955	6099.896	10.723	-10.329	10.723	14.889	316.070	0.028
6200.000	0.479	234.758	6199.892	10.195	-11.050	10.195	15.035	312.695	0.068
6300.000	0.471	239.854	6299.889	9.748	-11.747	9.748	15.265	309.685	0.043
6400.000	0.596	238.817	6399.884	9.272	-12.548	9.272	15.602	306.462	0.125
6500.000	0.618	175.996	6499.880	8.464	-12.955	8.464	15.475	303.160	0.633
6600.000	0.729	269.305	6599.875	7.919	-13.553	7.919	15.697	300.297	0.982
6700.000	1.012	268.354	6699.864	7.886	-15.071	7.886	17.009	297.620	0.283
6800.000	0.692	231.984	6799.853	7.488	-16.429	7.488	18.055	294.503	0.612
6900.000	0.505	253.584	6899.848	6.992	-17.328	6.992	18.685	291.974	0.290
7000.000	0.507	237.661	6999.844	6.630	-18.125	6.630	19.300	290.093	0.140
7100.000	0.530	329.841	7099.841	6.794	-18.732	6.794	19.926	289.935	0.748
7200.000	0.521	306.838	7199.837	7.466	-19.328	7.466	20.720	291.121	0.210
7300.000	0.554	10.379	7299.834	8.215	-19.604	8.215	21.256	292.735	0.567
7400.000	0.613	301.446	7399.829	8.970	-19.974	8.970	21.895	294.184	0.663
7500.000	0.538	3.087	7499.825	9.718	-20.405	9.718	22.601	295.466	0.593
7600.000	0.419	10.249	7599.822	10.547	-20.314	10.547	22.889	297.437	0.133
7700.000	0.538	15.631	7699.818	11.358	-20.123	11.358	23.107	299.442	0.127
7800.000	0.389	348.633	7799.815	12.143	-20.063	12.143	23.452	301.183	0.260
7900.000	0.412	348.761	7899.813	12.829	-20.200	12.829	23.930	302.418	0.023

<div> HORIZONTAL DISPLACEMENT IS 23.930 FEET AT 302.418 DEGREES </div>
