



Company: Anadarko Petroleum
 Well: Elliot Karl Unit 1
 API #: 05-123-08066
 Rig Name: Production/Warrior
 State/County: Colorado/Weld
 Latitude: 40.229, Longitude: -104.928
 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: hgyro-de_01.ut
 Minimum Curvature Method
 Report Date/Time: 6/21/2014 / 18:22

VES Survey International
 Henderson, Colorado
 303-853-4976
 Mark Simmons

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	0.613	276.685	99.998	0.062	-0.531	0.062	0.535	276.685	0.613
200.000	0.456	259.897	199.994	0.055	-1.454	0.055	1.455	272.157	0.220
300.000	0.547	252.528	299.990	-0.158	-2.301	-0.158	2.307	266.064	0.112
400.000	0.512	247.016	399.986	-0.476	-3.168	-0.476	3.203	261.453	0.062
500.000	0.552	246.212	499.981	-0.845	-4.020	-0.845	4.108	258.130	0.041
600.000	0.617	246.865	599.976	-1.251	-4.956	-1.251	5.111	255.835	0.065
700.000	0.793	247.060	699.969	-1.732	-6.088	-1.732	6.330	254.120	0.176
800.000	0.766	241.015	799.959	-2.325	-7.310	-2.325	7.671	252.353	0.086
900.000	0.868	241.624	899.949	-3.009	-8.561	-3.009	9.075	250.632	0.103
1000.000	0.900	246.993	999.937	-3.677	-9.951	-3.677	10.609	249.722	0.089
1100.000	0.861	249.391	1099.925	-4.248	-11.377	-4.248	12.145	249.525	0.054
1200.000	0.952	256.303	1199.913	-4.709	-12.888	-4.709	13.721	249.927	0.142
1300.000	1.003	258.076	1299.898	-5.087	-14.552	-5.087	15.415	250.731	0.059
1400.000	1.043	266.423	1399.882	-5.325	-16.316	-5.325	17.163	251.926	0.154
1500.000	1.132	267.592	1499.864	-5.423	-18.211	-5.423	19.001	253.417	0.092
1600.000	1.046	275.620	1599.846	-5.375	-20.105	-5.375	20.812	255.033	0.175
1700.000	0.995	277.817	1699.831	-5.168	-21.874	-5.168	22.476	256.708	0.064
1800.000	0.851	290.439	1799.818	-4.790	-23.430	-4.790	23.915	258.445	0.248
1900.000	0.834	297.560	1899.807	-4.194	-24.771	-4.194	25.124	260.391	0.106
2000.000	0.915	327.281	1999.796	-3.186	-25.848	-3.186	26.044	262.974	0.455
2100.000	0.976	324.927	2099.782	-1.817	-26.769	-1.817	26.830	266.116	0.072
2200.000	0.930	328.557	2199.768	-0.428	-27.681	-0.428	27.685	269.114	0.075
2300.000	0.878	322.853	2299.756	0.875	-28.567	0.875	28.581	271.755	0.104
2400.000	0.814	322.234	2399.745	2.047	-29.465	2.047	29.536	273.975	0.064
2500.000	0.822	320.773	2499.735	3.165	-30.354	3.165	30.518	275.952	0.022
2600.000	0.782	322.660	2599.725	4.263	-31.221	4.263	31.511	277.775	0.048
2700.000	0.727	323.335	2699.716	5.315	-32.014	5.315	32.452	279.426	0.055
2800.000	0.699	316.993	2799.709	6.270	-32.810	6.270	33.403	280.819	0.084
2900.000	0.655	313.792	2899.702	7.112	-33.639	7.112	34.382	281.938	0.058
3000.000	0.524	295.578	2999.696	7.705	-34.464	7.705	35.314	282.602	0.227
3100.000	0.371	301.704	3099.693	8.073	-35.152	8.073	36.067	282.934	0.160
3200.000	0.360	303.711	3199.691	8.417	-35.689	8.417	36.668	283.271	0.017
3300.000	0.220	349.134	3299.690	8.780	-35.986	8.780	37.042	283.711	0.259
3400.000	0.245	359.045	3399.689	9.182	-36.026	9.182	37.178	284.299	0.048

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	0.404	16.116	3499.688	9.735	-35.931	9.735	37.227	285.159	0.185
3600.000	0.323	14.453	3599.686	10.347	-35.763	10.347	37.230	286.136	0.082
3700.000	0.379	47.913	3699.684	10.841	-35.447	10.841	37.068	287.006	0.209
3800.000	0.451	35.847	3799.681	11.382	-34.971	11.382	36.777	288.028	0.113
3900.000	0.258	83.412	3899.679	11.727	-34.517	11.727	36.455	288.765	0.336
4000.000	0.539	151.018	3999.677	11.342	-34.066	11.342	35.904	288.414	0.501
4100.000	0.450	152.949	4099.674	10.580	-33.659	10.580	35.283	287.450	0.090
4200.000	0.600	158.609	4199.669	9.743	-33.290	9.743	34.686	286.314	0.158
4300.000	0.438	138.033	4299.665	8.972	-32.843	8.972	34.047	285.279	0.244
4400.000	0.705	130.419	4399.660	8.289	-32.120	8.289	33.172	284.471	0.277
4500.000	0.690	118.315	4499.653	7.605	-31.121	7.605	32.037	283.732	0.148
4600.000	0.726	104.584	4599.645	7.159	-29.977	7.159	30.820	283.432	0.173
4700.000	0.738	115.679	4699.637	6.721	-28.784	6.721	29.558	283.143	0.142
4800.000	0.529	137.371	4799.631	6.102	-27.891	6.102	28.550	282.341	0.315
4900.000	0.506	137.923	4899.627	5.435	-27.282	5.435	27.818	281.266	0.023
5000.000	0.477	143.137	4999.624	4.774	-26.736	4.774	27.159	280.123	0.053
5100.000	0.402	142.852	5099.621	4.161	-26.274	4.161	26.602	278.998	0.075
5200.000	0.319	163.451	5199.619	3.614	-25.983	3.614	26.233	277.918	0.153
5300.000	0.453	154.209	5299.616	2.991	-25.732	2.991	25.905	276.631	0.147
5400.000	0.323	146.530	5399.614	2.400	-25.404	2.400	25.517	275.397	0.139
5500.000	0.370	313.501	5499.613	2.387	-25.483	2.387	25.594	275.350	0.689
5600.000	0.636	304.813	5599.609	2.925	-26.172	2.925	26.335	276.378	0.276
5700.000	0.905	312.444	5699.600	3.775	-27.211	3.775	27.471	277.899	0.288
5800.000	0.864	314.006	5799.588	4.832	-28.336	4.832	28.745	279.678	0.048
5900.000	1.148	319.719	5899.573	6.120	-29.525	6.120	30.153	281.710	0.301
6000.000	1.239	332.446	5999.551	7.842	-30.673	7.842	31.659	284.341	0.279
6100.000	1.247	338.583	6099.528	9.813	-31.570	9.813	33.060	287.267	0.133
6200.000	0.943	348.224	6199.510	11.631	-32.135	11.631	34.175	289.897	0.355
6300.000	0.630	2.843	6299.500	12.986	-32.276	12.986	34.790	291.917	0.369
6400.000	0.641	349.578	6399.494	14.086	-32.350	14.086	35.283	293.529	0.147
6500.000	0.482	3.319	6499.489	15.056	-32.427	15.056	35.752	294.907	0.207
6600.000	0.195	86.013	6599.488	15.488	-32.232	15.488	35.760	295.666	0.497
6700.000	0.137	122.821	6699.488	15.436	-31.962	15.436	35.494	295.778	0.119
6800.000	0.204	64.688	6799.487	15.447	-31.701	15.447	35.264	295.979	0.176
6900.000	0.260	58.888	6899.486	15.641	-31.346	15.641	35.031	296.518	0.061
7000.000	0.554	57.492	6999.484	16.018	-30.743	16.018	34.666	297.521	0.294
7100.000	0.555	69.520	7099.479	16.448	-29.882	16.448	34.109	298.830	0.116
7200.000	0.661	62.016	7199.473	16.888	-28.918	16.888	33.488	300.284	0.132
7300.000	0.457	48.061	7299.469	17.425	-28.113	17.425	33.075	301.791	0.244
7400.000	0.489	48.370	7399.465	17.974	-27.498	17.974	32.851	303.171	0.032
HORIZONTAL DISPLACEMENT IS 32.851 FEET AT 303.171 DEGREES									