



Company: Anadarko Petroleum
 Well: Whittemore 7-28A
 API: 05-123-21425
 Rig Name: Production/ Warrior
 State/County: Colorado/Weld
 Latitude: 40.111, Longitude: -104.666
 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: 11/16/2013 / 15:15

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	0.516	282.146	99.999	0.095	-0.440	0.095	0.450	282.146	0.516
200.000	0.180	302.596	199.997	0.274	-1.013	0.274	1.049	285.152	0.352
300.000	0.520	320.814	299.995	0.711	-1.432	0.711	1.599	296.397	0.353
400.000	1.203	333.224	399.983	1.999	-2.191	1.999	2.966	312.377	0.704
500.000	1.370	343.570	499.958	4.083	-3.002	4.083	5.068	323.674	0.286
600.000	1.399	339.301	599.929	6.372	-3.772	6.372	7.405	329.376	0.107
700.000	0.771	347.716	699.910	8.172	-4.347	8.172	9.256	331.990	0.646
800.000	0.389	265.452	799.906	8.802	-4.828	8.802	10.040	331.255	0.816
900.000	0.867	270.680	899.900	8.785	-5.923	8.785	10.595	326.009	0.481
1000.000	1.024	272.164	999.886	8.827	-7.573	8.827	11.631	319.374	0.159
1100.000	1.248	284.397	1099.867	9.132	-9.521	9.132	13.192	313.805	0.329
1200.000	1.008	271.727	1199.847	9.429	-11.455	9.429	14.837	309.459	0.344
1300.000	1.079	277.144	1299.831	9.573	-13.268	9.573	16.361	305.809	0.121
1400.000	1.032	276.652	1399.814	9.794	-15.097	9.794	17.996	302.973	0.047
1500.000	1.107	280.029	1499.796	10.067	-16.943	10.067	19.708	300.716	0.098
1600.000	1.137	277.829	1599.777	10.370	-18.878	10.370	21.538	298.781	0.052
1700.000	1.096	291.066	1699.758	10.849	-20.753	10.849	23.417	297.599	0.261
1800.000	1.104	276.767	1799.740	11.306	-22.602	11.306	25.272	296.576	0.274
1900.000	1.064	278.493	1899.722	11.557	-24.477	11.557	27.068	295.274	0.052
2000.000	1.347	268.667	1999.700	11.666	-26.570	11.666	29.019	293.705	0.350
2100.000	1.409	286.371	2099.672	11.986	-28.926	11.986	31.310	292.507	0.429
2200.000	1.334	273.432	2199.643	12.402	-31.268	12.402	33.637	291.635	0.318
2300.000	1.407	274.018	2299.615	12.558	-33.654	12.558	35.920	290.463	0.074
2400.000	1.370	273.354	2399.585	12.714	-36.072	12.714	38.247	289.415	0.039
2500.000	1.489	279.421	2499.554	12.996	-38.548	12.996	40.680	288.631	0.192
2600.000	1.368	284.592	2599.523	13.510	-40.985	13.510	43.154	288.244	0.177
2700.000	1.015	276.971	2699.501	13.918	-43.019	13.918	45.214	287.928	0.386
2800.000	0.662	259.324	2799.491	13.918	-44.466	13.918	46.593	287.381	0.433
2900.000	0.576	255.222	2899.485	13.683	-45.520	13.683	47.532	286.730	0.097
3000.000	0.585	253.581	2999.480	13.410	-46.496	13.410	48.391	286.089	0.019
3100.000	0.478	219.598	3099.476	12.945	-47.252	12.945	48.993	285.320	0.327
3200.000	0.568	246.360	3199.472	12.425	-47.971	12.425	49.554	284.521	0.257
3300.000	0.601	249.160	3299.466	12.039	-48.916	12.039	50.376	283.827	0.044
3400.000	0.681	260.051	3399.460	11.750	-49.992	11.750	51.354	283.227	0.146
3500.000	0.828	264.230	3499.452	11.575	-51.296	11.575	52.586	282.715	0.156

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	0.896	267.472	3599.440	11.467	-52.797	11.467	54.028	282.254	0.084
3700.000	0.809	281.524	3699.429	11.574	-54.270	11.574	55.490	282.039	0.226
3800.000	0.984	304.558	3799.417	12.202	-55.669	12.202	56.991	282.363	0.397
3900.000	1.138	309.316	3899.400	13.318	-57.144	13.318	58.676	283.119	0.177
4000.000	1.186	325.683	3999.380	14.802	-58.496	14.802	60.340	284.201	0.334
4100.000	1.047	302.999	4099.361	16.155	-59.846	16.155	61.988	285.107	0.460
4200.000	1.584	302.537	4199.335	17.396	-61.777	17.396	64.180	285.727	0.537
4300.000	1.854	303.292	4299.289	19.027	-64.294	19.027	67.051	286.486	0.271
4400.000	1.841	299.866	4399.238	20.715	-67.039	20.715	70.167	287.171	0.111
4500.000	1.765	308.473	4499.188	22.473	-69.638	22.473	73.174	287.885	0.281
4600.000	1.662	312.719	4599.144	24.415	-71.909	24.415	75.941	288.754	0.163
4700.000	1.619	308.958	4699.103	26.287	-74.074	26.287	78.600	289.539	0.116
4800.000	1.582	321.626	4799.064	28.258	-76.029	28.258	81.111	290.389	0.355
4900.000	1.580	334.496	4899.026	30.584	-77.479	30.584	83.297	291.541	0.354
5000.000	1.508	331.419	4998.990	32.984	-78.702	32.984	85.335	292.738	0.109
5100.000	0.847	328.127	5098.968	34.767	-79.723	34.767	86.974	293.562	0.664
5200.000	0.770	317.440	5198.958	35.890	-80.568	35.890	88.200	294.012	0.169
5300.000	0.894	325.593	5298.948	37.029	-81.463	37.029	89.484	294.444	0.171
5400.000	0.927	326.339	5398.935	38.347	-82.353	38.347	90.843	294.969	0.035
5500.000	1.058	324.700	5498.920	39.774	-83.335	39.774	92.340	295.514	0.134
5600.000	1.328	1.429	5598.900	41.686	-83.839	41.686	93.631	296.437	0.794
5700.000	1.587	11.202	5698.867	44.203	-83.541	44.203	94.515	297.884	0.358
5800.000	1.814	4.153	5798.823	47.140	-83.158	47.140	95.590	299.548	0.308
5900.000	1.450	18.169	5898.783	49.921	-82.649	49.921	96.555	301.132	0.537
6000.000	0.861	353.023	5998.763	51.869	-82.345	51.869	97.320	302.207	0.764
6100.000	0.610	13.857	6098.755	53.132	-82.309	53.132	97.968	302.843	0.363
6200.000	0.465	344.646	6198.750	54.039	-82.289	54.039	98.447	303.293	0.305
6300.000	0.362	332.803	6298.748	54.711	-82.541	54.711	99.027	303.538	0.133
6400.000	0.315	356.626	6398.746	55.266	-82.701	55.266	99.468	303.753	0.147
6500.000	0.227	318.943	6498.745	55.690	-82.848	55.690	99.825	303.909	0.194
6600.000	0.337	345.539	6598.744	56.125	-83.051	56.125	100.237	304.050	0.168
6700.000	0.201	219.322	6698.743	56.274	-83.236	56.274	100.474	304.062	0.484
6800.000	0.232	319.705	6798.743	56.292	-83.478	56.292	100.684	303.993	0.333
6900.000	0.323	229.152	6898.742	56.262	-83.822	56.262	100.953	303.870	0.399
7000.000	0.403	279.018	6998.740	56.133	-84.382	56.133	101.348	303.633	0.315
7100.000	1.019	282.044	7098.732	56.374	-85.600	56.374	102.496	303.368	0.617
7200.000	0.668	278.037	7198.721	56.641	-87.047	56.641	103.853	303.052	0.356
7300.000	0.867	204.565	7298.714	56.034	-87.939	56.034	104.274	302.505	0.932
7400.000	1.316	237.457	7398.697	54.729	-89.221	54.729	104.669	301.525	0.753
7500.000	0.992	269.780	7498.677	54.107	-91.055	54.107	105.918	300.720	0.714
HORIZONTAL DISPLACEMENT IS 105.918 FEET AT 300.720 DEGREES									