

Company: ANADARKO PETROLEUM
 Well: HSR-SEKICH 6-19
 API: 05-123-19162
 Rig Name: PRODUCTION/WARRIOR
 State/County: COLORADO / WELD
 Latitude: 40.213, Longitude: -104.935
 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: run1-de_01.ut
 Minimum Curvature Method
 Report Date/Time: 12/19/2013 / 18:38

VAUGHN ENERGY SERVICES
 HENDERSON, COLORADO
 303-853-4976
 NICK KULA

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	0.271	261.143	100.000	-0.036	-0.234	-0.036	0.237	261.143	0.271
200.000	0.064	357.058	199.999	-0.017	-0.471	-0.017	0.471	267.928	0.285
300.000	0.209	276.933	299.999	0.061	-0.654	0.061	0.657	275.311	0.207
400.000	0.200	310.277	399.998	0.196	-0.968	0.196	0.987	281.424	0.117
500.000	0.221	296.572	499.998	0.395	-1.274	0.395	1.333	287.219	0.054
600.000	0.313	311.975	599.997	0.664	-1.649	0.664	1.778	291.920	0.116
700.000	0.247	327.366	699.995	1.028	-1.968	1.028	2.221	297.572	0.099
800.000	0.488	297.492	799.993	1.406	-2.462	1.406	2.836	299.726	0.300
900.000	0.330	258.520	899.991	1.545	-3.123	1.545	3.484	296.328	0.311
1000.000	0.579	231.148	999.988	1.171	-3.799	1.171	3.975	287.133	0.323
1100.000	0.762	212.249	1099.981	0.292	-4.547	0.292	4.556	273.669	0.285
1200.000	0.756	217.569	1199.972	-0.794	-5.304	-0.794	5.363	261.490	0.071
1300.000	0.890	223.047	1299.962	-1.884	-6.236	-1.884	6.515	253.190	0.156
1400.000	0.920	211.839	1399.950	-3.134	-7.190	-3.134	7.843	246.451	0.179
1500.000	0.862	222.040	1499.938	-4.374	-8.117	-4.374	9.220	241.681	0.169
1600.000	0.993	226.094	1599.925	-5.533	-9.245	-5.533	10.774	239.098	0.147
1700.000	0.693	245.953	1699.914	-6.381	-10.421	-6.381	12.219	238.522	0.415
1800.000	0.342	290.942	1799.910	-6.520	-11.252	-6.520	13.004	239.908	0.512
1900.000	0.374	324.507	1899.908	-6.148	-11.719	-6.148	13.234	242.317	0.209
2000.000	0.753	340.371	1999.903	-5.264	-12.129	-5.264	13.222	246.540	0.407
2100.000	1.166	345.643	2099.889	-3.659	-12.602	-3.659	13.123	253.808	0.422
2200.000	1.228	332.935	2199.867	-1.720	-13.342	-1.720	13.453	262.655	0.272
2300.000	1.310	329.975	2299.843	0.224	-14.402	0.224	14.404	270.893	0.105
2400.000	1.365	332.890	2399.815	2.275	-15.517	2.275	15.683	278.341	0.088
2500.000	1.305	327.889	2499.788	4.300	-16.665	4.300	17.211	284.467	0.131
2600.000	1.166	317.827	2599.765	6.018	-17.953	6.018	18.935	288.531	0.257
2700.000	1.316	296.638	2699.742	7.287	-19.663	7.287	20.970	290.334	0.480
2800.000	1.371	285.686	2799.715	8.125	-21.841	8.125	23.303	290.406	0.262
2900.000	1.609	274.620	2899.681	8.562	-24.392	8.562	25.851	289.341	0.373

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
3000.000	1.577	274.145	2999.643	8.774	-27.164	8.774	28.546	287.901	0.035
3100.000	1.782	255.472	3099.600	8.484	-30.041	8.484	31.216	285.770	0.581
3200.000	1.262	252.106	3199.565	7.755	-32.594	7.755	33.504	283.384	0.528
3300.000	0.967	245.428	3299.546	7.066	-34.409	7.066	35.127	281.605	0.322
3400.000	0.764	247.802	3399.534	6.464	-35.793	6.464	36.372	280.237	0.205
3500.000	0.418	252.424	3499.529	6.102	-36.759	6.102	37.261	279.425	0.349
3600.000	0.117	307.437	3599.528	6.054	-37.187	6.054	37.677	279.246	0.364
3700.000	0.285	17.063	3699.527	6.353	-37.196	6.353	37.734	279.693	0.267
3800.000	0.065	355.262	3799.527	6.647	-37.127	6.647	37.718	280.150	0.226
3900.000	0.163	259.450	3899.527	6.677	-37.272	6.677	37.866	280.157	0.182
4000.000	0.757	197.959	3999.523	6.023	-37.616	6.023	38.095	279.096	0.694
4100.000	1.129	215.580	4099.510	4.592	-38.393	4.592	38.667	276.821	0.467
4200.000	1.473	220.394	4199.484	2.812	-39.800	2.812	39.899	274.041	0.361
4300.000	1.532	219.835	4299.449	0.807	-41.489	0.807	41.497	271.114	0.060
4400.000	1.349	225.254	4399.418	-1.048	-43.181	-1.048	43.194	268.609	0.227
4500.000	0.771	246.263	4499.401	-2.148	-44.633	-2.148	44.685	267.245	0.687
4600.000	0.403	235.684	4599.395	-2.617	-45.539	-2.617	45.614	266.711	0.383
4700.000	0.374	287.682	4699.393	-2.716	-46.140	-2.716	46.220	266.631	0.341
4800.000	0.359	258.680	4799.391	-2.678	-46.758	-2.678	46.834	266.722	0.184
4900.000	0.486	300.886	4899.389	-2.522	-47.429	-2.522	47.496	266.956	0.327
5000.000	0.313	305.058	4999.386	-2.147	-48.017	-2.147	48.065	267.440	0.175
5100.000	0.294	305.801	5099.385	-1.840	-48.448	-1.840	48.483	267.825	0.020
5200.000	0.365	235.348	5199.384	-1.872	-48.918	-1.872	48.954	267.809	0.385
5300.000	0.548	246.994	5299.380	-2.240	-49.621	-2.240	49.671	267.416	0.204
5400.000	0.575	298.928	5399.376	-2.184	-50.500	-2.184	50.547	267.524	0.492
5500.000	0.096	45.415	5499.375	-1.883	-50.879	-1.883	50.914	267.881	0.609
5600.000	0.254	97.505	5599.374	-1.853	-50.600	-1.853	50.634	267.902	0.209
5700.000	0.189	176.899	5699.374	-2.047	-50.371	-2.047	50.413	267.673	0.287
5800.000	0.501	176.434	5799.372	-2.649	-50.335	-2.649	50.405	266.988	0.312
5900.000	0.393	213.065	5899.369	-3.373	-50.495	-3.373	50.608	266.179	0.299
6000.000	0.721	201.578	5999.364	-4.245	-50.914	-4.245	51.090	265.234	0.345
6100.000	0.544	199.014	6099.358	-5.279	-51.300	-5.279	51.571	264.124	0.179
6200.000	0.450	217.628	6199.354	-6.039	-51.694	-6.039	52.046	263.337	0.185
6300.000	0.761	230.450	6299.348	-6.773	-52.446	-6.773	52.882	262.641	0.337
6400.000	0.531	223.182	6399.342	-7.534	-53.275	-7.534	53.805	261.951	0.244
6500.000	0.469	220.682	6499.338	-8.182	-53.859	-8.182	54.477	261.362	0.065
6600.000	0.549	240.916	6599.334	-8.725	-54.544	-8.725	55.238	260.912	0.195
6700.000	0.138	201.497	6699.332	-9.070	-55.007	-9.070	55.750	260.637	0.451
6800.000	0.115	213.335	6799.332	-9.266	-55.106	-9.266	55.880	260.455	0.035
6900.000	0.170	184.964	6899.332	-9.497	-55.174	-9.497	55.985	260.233	0.088
7000.000	0.315	288.043	6999.331	-9.560	-55.448	-9.560	56.266	260.218	0.390
7100.000	0.649	296.856	7099.328	-9.219	-56.214	-9.219	56.965	260.687	0.341
HORIZONTAL DISPLACEMENT IS 56.965 FEET AT 260.687 DEGREES									