



Company: Anadarko Petroleum Corp.
 Well/API: Starck #2/05-123-12776
 Tool Type: North Seeking Rate Gyro
 Rig Name: Production/ CoreTech
 County/State: Weld County / Colorado
 Latitude: 40.309, Longitude: -104.938
 Directions are relative to True North
 VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = GL Elevation = 4815 ft

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: run2-01-de_01.ut

Minimum Curvature Method

Report Date/Time: 1/28/2015 / 15:33

Lat/Long Obtained By Handheld GPS At Wellhead

Handheld GPS Reference: NAD83/Device Error: ±9 Feet

VES Survey International - Henderson CO

Jay Hinman

303-853-4976

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	0.635	195.788	99.998	-0.533	-0.151	-0.533	0.554	195.788	0.635
200.000	0.639	185.179	199.992	-1.622	-0.352	-1.622	1.659	192.243	0.118
300.000	0.089	201.297	299.989	-2.249	-0.430	-2.249	2.290	190.833	0.554
400.000	0.309	246.625	399.989	-2.428	-0.706	-2.428	2.529	196.217	0.255
500.000	0.357	318.435	499.987	-2.302	-1.161	-2.302	2.578	206.763	0.393
600.000	0.339	322.598	599.986	-1.834	-1.547	-1.834	2.399	220.159	0.031
700.000	0.208	272.932	699.985	-1.590	-1.908	-1.590	2.483	230.202	0.258
800.000	0.180	307.833	799.984	-1.484	-2.213	-1.484	2.665	236.156	0.119
900.000	0.204	318.574	899.984	-1.254	-2.455	-1.254	2.757	242.936	0.043
1000.000	0.214	315.875	999.983	-0.987	-2.703	-0.987	2.877	249.938	0.014
1100.000	0.299	269.914	1099.982	-0.854	-3.093	-0.854	3.209	254.572	0.215
1200.000	0.634	303.156	1199.979	-0.551	-3.816	-0.551	3.856	261.778	0.417
1300.000	0.530	321.830	1299.974	0.114	-4.565	0.114	4.567	271.437	0.215
1400.000	0.267	268.352	1399.971	0.471	-5.084	0.471	5.106	275.296	0.429
1500.000	0.495	264.735	1499.969	0.425	-5.747	0.425	5.763	274.229	0.229
1600.000	0.290	291.096	1599.967	0.476	-6.413	0.476	6.431	274.249	0.268
1700.000	0.450	268.064	1699.965	0.554	-7.042	0.554	7.064	274.501	0.215
1800.000	0.401	303.754	1799.962	0.735	-7.725	0.735	7.760	275.438	0.265
1900.000	0.573	274.392	1899.959	0.968	-8.515	0.968	8.570	276.486	0.298
2000.000	0.620	274.737	1999.953	1.051	-9.553	1.051	9.610	276.279	0.047
2100.000	0.899	284.546	2099.944	1.293	-10.851	1.293	10.928	276.794	0.307
2200.000	0.598	270.714	2199.936	1.496	-12.133	1.496	12.225	277.030	0.349
2300.000	0.591	274.391	2299.930	1.542	-13.169	1.542	13.259	276.679	0.039
2400.000	0.868	292.562	2399.922	1.872	-14.384	1.872	14.505	277.417	0.358
2500.000	0.697	259.418	2499.913	2.051	-15.681	2.051	15.815	277.453	0.476
2600.000	0.743	299.948	2599.906	2.264	-16.841	2.264	16.993	277.655	0.501
2700.000	0.905	293.594	2699.896	2.903	-18.127	2.903	18.358	279.100	0.185
2800.000	0.552	287.614	2799.888	3.365	-19.309	3.365	19.601	279.886	0.361
2900.000	0.595	311.811	2899.883	3.857	-20.156	3.857	20.521	280.834	0.244
3000.000	0.963	313.276	2999.873	4.780	-21.155	4.780	21.688	282.732	0.369
3100.000	0.927	311.580	3099.860	5.893	-22.372	5.893	23.135	284.757	0.046
3200.000	0.744	299.268	3199.849	6.748	-23.544	6.748	24.492	285.992	0.255
3300.000	0.483	227.095	3299.845	6.778	-24.419	6.778	25.342	285.513	0.753

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
3400.000	0.733	240.963	3399.839	6.180	-25.287	6.180	26.031	283.735	0.288
3500.000	0.628	209.329	3499.832	5.392	-26.115	5.392	26.665	281.667	0.384
3600.000	0.629	208.022	3599.826	4.430	-26.641	4.430	27.007	279.440	0.014
3700.000	0.932	235.222	3699.817	3.481	-27.567	3.481	27.786	277.196	0.471
3800.000	0.675	217.555	3799.807	2.549	-28.595	2.549	28.708	275.095	0.354
3900.000	0.874	252.505	3899.799	1.853	-29.682	1.853	29.739	273.572	0.502
4000.000	1.100	265.585	3999.784	1.550	-31.366	1.550	31.404	272.829	0.318
4100.000	0.772	254.012	4099.770	1.290	-32.971	1.290	32.996	272.241	0.376
4200.000	0.743	263.894	4199.762	1.036	-34.263	1.036	34.279	271.731	0.134
4300.000	0.822	253.207	4299.752	0.760	-35.594	0.760	35.602	271.222	0.166
4400.000	1.200	268.815	4399.737	0.531	-37.327	0.531	37.331	270.815	0.465
4500.000	1.099	268.859	4499.717	0.490	-39.333	0.490	39.336	270.714	0.101
4600.000	1.139	270.764	4599.698	0.484	-41.286	0.484	41.289	270.672	0.055
4700.000	1.124	250.699	4699.679	0.173	-43.206	0.173	43.206	270.230	0.395
4800.000	1.029	271.399	4799.661	-0.129	-45.028	-0.129	45.029	269.836	0.398
4900.000	0.979	274.918	4899.646	-0.034	-46.777	-0.034	46.777	269.959	0.079
5000.000	1.000	252.293	4999.631	-0.226	-48.460	-0.226	48.461	269.733	0.389
5100.000	0.859	262.810	5099.618	-0.585	-50.035	-0.585	50.039	269.330	0.221
5200.000	0.742	289.251	5199.609	-0.465	-51.391	-0.465	51.393	269.481	0.383
5300.000	0.373	259.939	5299.604	-0.309	-52.323	-0.309	52.324	269.662	0.455
5400.000	0.214	331.506	5399.603	-0.202	-52.732	-0.202	52.733	269.780	0.367
5500.000	0.501	326.195	5499.601	0.325	-53.064	0.325	53.065	270.351	0.289
5600.000	0.480	303.368	5599.597	0.918	-53.658	0.918	53.665	270.980	0.195
5700.000	0.268	61.555	5699.596	1.260	-53.802	1.260	53.816	271.342	0.651
5800.000	0.440	347.469	5799.595	1.746	-53.679	1.746	53.708	271.863	0.448
5900.000	0.365	352.380	5899.592	2.437	-53.805	2.437	53.860	272.593	0.082
6000.000	0.851	34.369	5999.587	3.366	-53.428	3.366	53.534	273.604	0.629
6100.000	0.595	57.195	6099.579	4.260	-52.573	4.260	52.745	274.632	0.380
6200.000	0.820	45.386	6199.571	5.044	-51.627	5.044	51.872	275.580	0.267
6300.000	0.633	33.661	6299.563	6.006	-50.811	6.006	51.165	276.741	0.238
6400.000	0.943	61.827	6399.554	6.854	-49.779	6.854	50.249	277.840	0.487
6500.000	0.650	68.437	6499.544	7.451	-48.526	7.451	49.095	278.730	0.307
6600.000	0.878	79.564	6599.535	7.799	-47.245	7.799	47.885	279.373	0.271
6700.000	0.374	61.400	6699.529	8.094	-46.206	8.094	46.909	279.935	0.536
6800.000	0.781	46.653	6799.524	8.718	-45.423	8.718	46.252	280.864	0.430
6900.000	1.000	47.144	6899.512	9.779	-44.288	9.779	45.355	282.451	0.219
7000.000	0.734	45.336	6999.500	10.822	-43.194	10.822	44.529	284.066	0.267
7100.000	0.538	29.989	7099.494	11.679	-42.503	11.679	44.079	285.364	0.258
7200.000	0.075	8.150	7199.492	12.150	-42.259	12.150	43.971	286.041	0.470
7300.000	0.077	11.784	7299.492	12.281	-42.236	12.281	43.986	286.213	0.005
7400.000	0.481	303.775	7399.491	12.580	-42.572	12.580	44.391	286.463	0.458
7500.000	0.463	254.045	7499.488	12.702	-43.309	12.702	45.133	286.346	0.397
7550.000	0.256	278.104	7549.487	12.663	-43.614	12.663	45.415	286.190	0.503
<div> <div>HORIZONTAL DISPLACEMENT IS</div> <div>45.415 FEET AT 286.190 DEGREES</div> </div>									