

Company: Anadarko Petroleum Corp.
 Well/API: PSC 14-9-5Y/05-123-21563
 Tool Type: North Seeking Rate Gyro
 Rig Name: Production/Coretech
 County/State: Weld/Colorado
 Latitude: 40.235, Longitude: -104.897
 Directions are relative to True North
 VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = GL Elevation = 4,763 Feet

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01-de_01.ut
 Minimum Curvature Method
 Report Date/Time: 10/3/2014 / 10:39

Lat/Long & Elevation Obtained By Handheld GPS At Wellhead
 Handheld GPS Reference: NAD83/Device Error: +/- 9 Feet
 VES Survey International - Henderson CO
 Levi Sheldon
 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	0.175	52.453	100.000	0.093	0.121	0.093	0.153	52.453	0.175
200.000	0.221	213.600	200.000	0.026	0.136	0.026	0.138	79.164	0.391
300.000	0.322	161.609	299.999	-0.401	0.118	-0.401	0.418	163.594	0.255
400.000	0.184	96.954	399.998	-0.687	0.366	-0.687	0.779	151.946	0.295
500.000	0.225	170.619	499.997	-0.900	0.558	-0.900	1.059	148.218	0.247
600.000	0.213	321.719	599.997	-0.947	0.474	-0.947	1.059	153.404	0.424
700.000	0.432	245.866	699.996	-0.955	0.015	-0.955	0.955	179.099	0.432
800.000	0.588	284.032	799.992	-0.985	-0.827	-0.985	1.286	220.024	0.365
900.000	0.777	274.562	899.985	-0.806	-2.001	-0.806	2.157	248.055	0.219
1000.000	0.942	259.935	999.974	-0.896	-3.486	-0.896	3.600	255.587	0.273
1100.000	0.775	259.438	1099.962	-1.164	-4.960	-1.164	5.095	256.798	0.167
1200.000	0.880	243.878	1199.952	-1.626	-6.314	-1.626	6.520	255.563	0.247
1300.000	1.032	230.540	1299.938	-2.536	-7.699	-2.536	8.106	251.768	0.269
1400.000	0.745	226.516	1399.926	-3.556	-8.867	-3.556	9.553	248.145	0.294
1500.000	1.055	254.749	1499.914	-4.246	-10.227	-4.246	11.073	247.452	0.532
1600.000	1.272	266.099	1599.894	-4.564	-12.222	-4.564	13.046	249.524	0.315
1700.000	1.416	259.283	1699.866	-4.869	-14.543	-4.869	15.336	251.490	0.215
1800.000	1.627	270.299	1799.831	-5.091	-17.176	-5.091	17.915	253.490	0.360
1900.000	1.820	264.893	1899.786	-5.225	-20.177	-5.225	20.843	255.482	0.252
2000.000	1.890	279.832	1999.734	-5.085	-23.384	-5.085	23.930	257.732	0.487
2100.000	1.579	286.822	2099.688	-4.404	-26.328	-4.404	26.694	260.503	0.376
2200.000	1.464	279.314	2199.653	-3.799	-28.908	-3.799	29.156	262.514	0.230
2300.000	1.442	276.933	2299.621	-3.440	-31.417	-3.440	31.605	263.751	0.064
2400.000	1.496	280.417	2399.588	-3.052	-33.951	-3.052	34.088	264.863	0.104
2500.000	1.338	284.401	2499.557	-2.526	-36.366	-2.526	36.453	266.027	0.186
2600.000	1.516	283.828	2599.526	-1.919	-38.781	-1.919	38.829	267.167	0.179
2700.000	1.250	264.027	2699.498	-1.716	-41.151	-1.716	41.187	267.612	0.543
2800.000	1.383	260.253	2799.471	-2.034	-43.425	-2.034	43.473	267.318	0.159
2900.000	1.582	252.326	2899.438	-2.657	-45.930	-2.657	46.006	266.689	0.285
3000.000	1.822	240.844	2999.394	-3.851	-48.634	-3.851	48.786	265.472	0.416
3100.000	2.136	233.629	3099.334	-5.731	-51.523	-5.731	51.841	263.653	0.400
3200.000	2.149	220.304	3199.265	-8.266	-54.236	-8.266	54.863	261.334	0.497
3300.000	2.293	229.714	3299.190	-10.990	-56.975	-10.990	58.025	259.083	0.391
3400.000	2.037	236.569	3399.119	-13.262	-59.984	-13.262	61.433	257.533	0.363

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	1.761	248.763	3499.064	-14.798	-62.899	-14.798	64.617	256.761	0.488
3600.000	1.813	255.370	3599.016	-15.754	-65.862	-15.754	67.720	256.548	0.212
3700.000	2.054	253.914	3698.959	-16.650	-69.115	-16.650	71.092	256.455	0.247
3800.000	1.621	259.164	3798.907	-17.413	-72.226	-17.413	74.296	256.446	0.464
3900.000	1.204	288.302	3898.878	-17.349	-74.613	-17.349	76.604	256.910	0.817
4000.000	1.317	314.817	3998.855	-16.208	-76.426	-16.208	78.126	258.026	0.589
4100.000	1.329	302.353	4098.828	-14.778	-78.221	-14.778	79.605	259.302	0.288
4200.000	1.000	292.206	4198.807	-13.827	-80.009	-13.827	81.195	260.195	0.387
4300.000	0.952	286.887	4298.793	-13.256	-81.612	-13.256	82.681	260.774	0.102
4400.000	0.941	286.372	4398.779	-12.783	-83.195	-12.783	84.171	261.265	0.014
4500.000	0.917	268.313	4498.766	-12.575	-84.783	-12.575	85.710	261.563	0.293
4600.000	0.910	255.680	4598.754	-12.795	-86.351	-12.795	87.294	261.572	0.201
4700.000	0.807	253.271	4698.743	-13.194	-87.794	-13.194	88.780	261.453	0.109
4800.000	0.745	244.401	4798.733	-13.678	-89.055	-13.678	90.100	261.268	0.135
4900.000	0.669	236.209	4898.726	-14.283	-90.127	-14.283	91.252	260.995	0.127
5000.000	0.564	243.346	4998.720	-14.828	-91.051	-14.828	92.251	260.750	0.130
5100.000	0.561	241.551	5098.715	-15.282	-91.922	-15.282	93.184	260.561	0.018
5200.000	0.472	271.750	5198.711	-15.503	-92.764	-15.503	94.051	260.512	0.283
5300.000	0.843	251.784	5298.705	-15.721	-93.875	-15.721	95.183	260.493	0.431
5400.000	1.338	274.208	5398.687	-15.865	-95.739	-15.865	97.045	260.591	0.645
5500.000	1.537	295.269	5498.656	-15.207	-98.117	-15.207	99.288	261.190	0.561
5600.000	1.172	285.018	5598.628	-14.369	-100.318	-14.369	101.341	261.849	0.436
5700.000	0.730	312.927	5698.614	-13.670	-101.772	-13.670	102.686	262.350	0.628
5800.000	0.859	277.826	5798.605	-13.134	-102.981	-13.134	103.816	262.732	0.495
5900.000	0.814	263.012	5898.595	-13.118	-104.429	-13.118	105.249	262.840	0.220
6000.000	0.786	293.836	5998.585	-12.928	-105.761	-12.928	106.548	263.031	0.426
6100.000	0.482	297.452	6098.579	-12.456	-106.762	-12.456	107.486	263.345	0.306
6200.000	0.735	276.555	6198.574	-12.189	-107.772	-12.189	108.460	263.547	0.332
6300.000	0.847	247.705	6298.564	-12.396	-109.094	-12.396	109.796	263.517	0.409
6400.000	0.903	264.165	6398.553	-12.757	-110.561	-12.757	111.295	263.418	0.256
6500.000	0.978	262.822	6498.539	-12.944	-112.191	-12.944	112.935	263.419	0.079
6600.000	1.094	260.590	6598.523	-13.206	-113.979	-13.206	114.742	263.391	0.123
6700.000	1.348	270.123	6698.500	-13.360	-116.097	-13.360	116.863	263.436	0.325
6800.000	1.420	273.385	6798.471	-13.284	-118.510	-13.284	119.252	263.604	0.107
6900.000	1.628	270.004	6898.436	-13.211	-121.167	-13.211	121.885	263.778	0.227
6950.000	1.926	275.793	6948.412	-13.126	-122.713	-13.126	123.413	263.895	0.695

HORIZONTAL DISPLACEMENT IS
123.413 FEET AT 263.895 DEGREES