

Company: Anadarko Petroleum Corp.
 Well/API: Strong P 21-10J/05-123-14265
 Tool Type: North Seeking Rate Gyro
 Rig Name: Production/ CoreTech
 County/State: Weld/Colorado
 Latitude: 40.209, Longitude: -104.893
 Directions are relative to True North
 VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB= GL Elevation= 4781 Feet

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01-de_01.ut
 Minimum Curvature Method
 Report Date/Time: 1/27/2015 / 18:36

Lat/Long Obtained by Handheld GPS at Wellhead
 Handheld GPS Reference: NAD83/ Device Error: +- 9 Feet
 VES Survey International- Henderson Co
 Sean Bratt
 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	0.510	231.078	99.999	-0.280	-0.347	-0.280	0.445	231.078	0.510
200.000	0.174	65.619	199.998	-0.497	-0.555	-0.497	0.745	228.147	0.680
300.000	0.510	259.510	299.997	-0.516	-0.855	-0.516	0.998	238.901	0.680
400.000	0.607	221.659	399.992	-0.992	-1.645	-0.992	1.921	238.896	0.374
500.000	0.329	220.936	499.989	-1.605	-2.185	-1.605	2.711	233.702	0.278
600.000	0.582	275.447	599.986	-1.773	-2.878	-1.773	3.381	238.367	0.474
700.000	0.300	226.425	699.983	-1.905	-3.574	-1.905	4.050	241.938	0.447
800.000	0.695	227.779	799.979	-2.493	-4.212	-2.493	4.895	239.382	0.395
900.000	0.637	234.829	899.972	-3.221	-5.116	-3.221	6.045	237.808	0.100
1000.000	0.726	233.384	999.965	-3.919	-6.079	-3.919	7.233	237.192	0.090
1100.000	0.953	259.103	1099.955	-4.454	-7.404	-4.454	8.641	238.970	0.434
1200.000	0.547	289.145	1199.946	-4.455	-8.672	-4.455	9.749	242.811	0.552
1300.000	1.044	249.664	1299.937	-4.615	-9.977	-4.615	10.993	245.178	0.712
1400.000	1.057	259.864	1399.920	-5.093	-11.739	-5.093	12.796	246.544	0.187
1500.000	0.725	258.692	1499.908	-5.380	-13.267	-5.380	14.316	247.927	0.333
1600.000	0.889	264.514	1599.898	-5.578	-14.659	-5.578	15.684	249.168	0.184
1700.000	1.497	286.010	1699.877	-5.292	-16.688	-5.292	17.506	252.406	0.745
1800.000	1.353	291.030	1799.846	-4.508	-19.045	-4.508	19.571	256.684	0.191
1900.000	1.896	297.385	1899.805	-3.323	-21.616	-3.323	21.870	261.259	0.571
2000.000	1.872	298.112	1999.751	-1.793	-24.525	-1.793	24.590	265.819	0.034
2100.000	1.873	294.432	2099.698	-0.347	-27.454	-0.347	27.456	269.275	0.120
2200.000	1.547	295.492	2199.653	0.910	-30.160	0.910	30.174	271.728	0.328
2300.000	1.283	316.711	2299.623	2.306	-32.146	2.306	32.229	274.102	0.582
2400.000	1.531	315.186	2399.593	4.069	-33.856	4.069	34.100	276.853	0.251
2500.000	1.528	316.889	2499.557	5.990	-35.709	5.990	36.208	279.523	0.046
2600.000	1.583	318.379	2599.521	7.996	-37.538	7.996	38.380	282.025	0.068
2700.000	1.567	322.250	2699.483	10.110	-39.292	10.110	40.572	284.429	0.107
2800.000	1.614	319.822	2799.444	12.267	-41.038	12.267	42.832	286.642	0.082
2900.000	1.466	323.371	2899.408	14.369	-42.710	14.369	45.062	288.595	0.176
3000.000	1.625	317.497	2999.372	16.441	-44.430	16.441	47.375	290.306	0.224
3100.000	1.468	334.620	3099.336	18.644	-45.938	18.644	49.577	292.090	0.486
3200.000	0.816	349.936	3199.316	20.502	-46.611	20.502	50.921	293.743	0.715
3300.000	0.455	38.996	3299.310	21.512	-46.486	21.512	51.222	294.833	0.622
3400.000	0.474	18.272	3399.307	22.214	-46.106	22.214	51.178	295.724	0.168

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	0.140	14.884	3499.305	22.724	-45.945	22.724	51.258	296.317	0.334
3600.000	0.514	46.230	3599.303	23.153	-45.590	23.153	51.132	296.924	0.401
3700.000	0.054	356.819	3699.302	23.510	-45.269	23.510	51.010	297.445	0.480
3800.000	0.272	246.110	3799.302	23.461	-45.489	23.461	51.182	297.283	0.296
3900.000	0.444	176.443	3899.300	22.978	-45.682	22.978	51.135	296.703	0.433
4000.000	1.283	200.701	3999.288	21.544	-46.054	21.544	50.844	295.070	0.897
4100.000	1.068	210.839	4099.267	19.696	-46.927	19.696	50.893	292.768	0.298
4200.000	1.696	215.568	4199.237	17.692	-48.266	17.692	51.406	290.130	0.638
4300.000	1.521	240.401	4299.199	15.832	-50.281	15.832	52.715	287.478	0.712
4400.000	1.026	214.594	4399.175	14.440	-51.943	14.440	53.913	285.536	0.746
4500.000	1.031	227.495	4499.159	13.095	-53.115	13.095	54.705	283.850	0.231
4600.000	0.814	251.052	4599.146	12.257	-54.450	12.257	55.812	282.686	0.432
4700.000	1.032	239.948	4699.133	11.575	-55.901	11.575	57.087	281.698	0.281
4800.000	1.058	234.126	4799.117	10.583	-57.429	10.583	58.396	280.441	0.109
4900.000	1.001	236.084	4899.101	9.554	-58.902	9.554	59.672	279.213	0.067
5000.000	0.899	239.121	4999.087	8.664	-60.301	8.664	60.920	278.176	0.114
5100.000	0.799	238.298	5099.076	7.895	-61.567	7.895	62.071	277.307	0.101
5200.000	0.641	295.838	5199.069	7.772	-62.664	7.772	63.144	277.070	0.707
5300.000	0.558	246.659	5299.064	7.823	-63.615	7.823	64.094	277.011	0.505
5400.000	0.394	336.037	5399.062	7.944	-64.201	7.944	64.691	277.054	0.679
5500.000	0.265	350.139	5499.060	8.486	-64.380	8.486	64.937	277.509	0.151
5600.000	0.435	13.028	5599.058	9.084	-64.335	9.084	64.973	278.037	0.217
5700.000	0.654	28.128	5699.054	9.957	-63.980	9.957	64.750	278.846	0.260
5800.000	1.414	65.094	5799.038	10.980	-62.592	10.980	63.548	279.950	0.974
5900.000	1.916	67.599	5898.995	12.137	-59.928	12.137	61.144	281.449	0.507
6000.000	2.309	43.984	5998.929	14.223	-56.983	14.223	58.731	284.015	0.946
6100.000	2.116	23.452	6098.856	17.367	-54.849	17.367	57.533	287.569	0.811
6200.000	1.435	13.666	6198.808	20.277	-53.818	20.277	57.512	290.645	0.743
6300.000	1.153	349.128	6298.783	22.482	-53.712	22.482	58.228	292.713	0.615
6400.000	1.034	345.579	6398.765	24.344	-54.127	24.344	59.349	294.216	0.137
6500.000	1.010	323.803	6498.749	25.929	-54.872	25.929	60.690	295.293	0.387
6600.000	0.733	339.490	6598.738	27.240	-55.617	27.240	61.929	296.095	0.364
6700.000	0.715	354.242	6698.730	28.460	-55.903	28.460	62.731	296.980	0.187
6800.000	0.694	311.759	6798.723	29.484	-56.418	29.484	63.657	297.592	0.511
6900.000	1.235	332.787	6898.708	30.846	-57.362	30.846	65.130	298.268	0.638
7000.000	2.088	331.908	6998.665	33.411	-58.713	33.411	67.554	299.643	0.854
7100.000	2.933	329.328	7098.569	37.220	-60.876	37.220	71.353	301.441	0.852
7200.000	3.039	331.758	7198.433	41.755	-63.436	41.755	75.945	303.354	0.165
7300.000	2.201	338.058	7298.328	45.872	-65.408	45.872	79.890	305.043	0.885
7400.000	1.802	340.715	7398.266	49.137	-66.644	49.137	82.800	306.401	0.410
7500.000	1.585	353.882	7498.223	51.996	-67.311	51.996	85.055	307.685	0.444
7600.000	1.714	338.289	7598.182	54.760	-68.012	54.760	87.317	308.839	0.465
7700.000	1.651	343.222	7698.139	57.529	-68.981	57.529	89.822	309.828	0.158
7800.000	1.546	335.555	7798.100	60.136	-69.955	60.136	92.250	310.684	0.238
7900.000	1.439	6.215	7898.068	62.612	-70.377	62.612	94.197	311.658	0.796
8000.000	0.951	353.391	7998.046	64.684	-70.337	64.684	95.558	312.603	0.553
8100.000	1.183	2.354	8098.029	66.541	-70.390	66.541	96.863	313.390	0.285

HORIZONTAL DISPLACEMENT IS
96.863 FEET AT 313.390 DEGREES