

Company: Anadarko Petroleum Corp.

Well/API: HSR-Dantzker #10-16/05-123-16049

Tool Type: North Seeking Rate Gyro

Rig Name: Production / Coretech

County/State: Weld/Colorado

Latitude: 40.224, Longitude: -104.893

Directions are relative to True North

VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = GL elevation = 4782

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_6950-01-de_01.ut

Minimum Curvature Method

Report Date/Time: 10/13/2014 / 14:01

Lat/Long & Elevation Obtained By Handheld GPS At Wellhead

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

VES Survey International - Henderson CO

Brian Brewbaker

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	0.113	110.286	100.000	-0.034	0.092	-0.034	0.098	110.286	0.113
200.000	0.105	247.246	200.000	-0.104	0.100	-0.104	0.144	136.170	0.203
300.000	0.114	275.301	300.000	-0.130	-0.084	-0.130	0.155	212.949	0.054
400.000	0.532	278.558	399.998	-0.052	-0.642	-0.052	0.644	265.386	0.418
500.000	0.690	287.252	499.992	0.196	-1.676	0.196	1.687	276.665	0.183
600.000	0.835	280.083	599.983	0.502	-2.968	0.502	3.010	279.599	0.173
700.000	0.859	281.547	699.972	0.780	-4.420	0.780	4.488	280.003	0.033
800.000	0.906	268.318	799.961	0.906	-5.945	0.906	6.013	278.669	0.209
900.000	0.753	245.578	899.950	0.612	-7.333	0.612	7.359	274.767	0.360
1000.000	0.814	235.115	999.941	-0.066	-8.514	-0.066	8.515	269.553	0.155
1100.000	0.825	227.821	1099.931	-0.956	-9.631	-0.956	9.678	264.330	0.105
1200.000	0.859	228.278	1199.920	-1.939	-10.724	-1.939	10.898	259.752	0.035
1300.000	0.832	238.314	1299.909	-2.819	-11.902	-2.819	12.231	256.673	0.150
1400.000	0.683	261.363	1399.901	-3.291	-13.110	-3.291	13.516	255.909	0.336
1500.000	0.777	260.173	1499.893	-3.496	-14.368	-3.496	14.787	256.324	0.095
1600.000	1.050	279.578	1599.880	-3.459	-15.940	-3.459	16.311	257.756	0.409
1700.000	1.156	282.240	1699.861	-3.093	-17.830	-3.093	18.096	260.159	0.118
1800.000	1.003	284.060	1799.844	-2.666	-19.665	-2.666	19.845	262.278	0.157
1900.000	0.982	292.059	1899.829	-2.132	-21.308	-2.132	21.414	264.287	0.140
2000.000	0.877	331.841	1999.817	-1.135	-22.464	-1.135	22.492	267.107	0.640
2100.000	0.931	332.876	2099.804	0.263	-23.195	0.263	23.197	270.649	0.056
2200.000	0.976	339.003	2199.790	1.781	-23.871	1.781	23.937	274.266	0.111
2300.000	0.767	331.465	2299.779	3.164	-24.496	3.164	24.699	277.359	0.238
2400.000	0.801	319.041	2399.769	4.280	-25.274	4.280	25.633	279.611	0.173
2500.000	0.927	310.031	2499.758	5.328	-26.351	5.328	26.885	281.430	0.185
2600.000	0.955	304.251	2599.745	6.317	-27.660	6.317	28.372	282.865	0.099
2700.000	1.197	306.142	2699.727	7.402	-29.192	7.402	30.116	284.229	0.245
2800.000	1.532	301.227	2799.698	8.712	-31.179	8.712	32.373	285.611	0.355
2900.000	1.771	302.039	2899.657	10.225	-33.632	10.225	35.152	286.910	0.240
3000.000	1.799	301.538	2999.608	11.866	-36.280	11.866	38.171	288.111	0.031
3100.000	1.563	274.298	3099.567	12.789	-38.978	12.789	41.022	288.165	0.824
3200.000	1.758	251.999	3199.526	12.417	-41.797	12.417	43.603	286.545	0.670
3300.000	2.052	246.129	3299.470	11.218	-44.893	11.218	46.274	284.030	0.352

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	2.111	257.670	3399.405	10.100	-48.330	10.100	49.374	281.804	0.423
3500.000	2.003	248.352	3499.341	9.062	-51.754	9.062	52.541	279.932	0.351
3600.000	1.685	269.289	3599.290	8.400	-54.848	8.400	55.488	278.707	0.739
3700.000	1.928	270.032	3699.240	8.382	-58.000	8.382	58.603	278.223	0.244
3800.000	1.858	271.228	3799.186	8.418	-61.303	8.418	61.879	277.819	0.080
3900.000	2.128	250.428	3899.126	7.831	-64.674	7.831	65.146	276.904	0.767
4000.000	2.214	249.585	3999.054	6.535	-68.233	6.535	68.545	275.471	0.092
4100.000	1.890	252.684	4098.990	5.371	-71.618	5.371	71.819	274.289	0.342
4200.000	1.911	248.733	4198.935	4.275	-74.746	4.275	74.868	273.273	0.133
4300.000	1.882	249.142	4298.881	3.085	-77.834	3.085	77.895	272.270	0.033
4400.000	2.005	247.840	4398.823	1.841	-80.988	1.841	81.009	271.302	0.131
4500.000	2.082	248.642	4498.759	0.520	-84.300	0.520	84.301	270.353	0.082
4600.000	2.089	256.711	4598.693	-0.561	-87.765	-0.561	87.767	269.634	0.293
4700.000	1.794	247.120	4698.636	-1.588	-90.981	-1.588	90.995	269.000	0.438
4800.000	1.184	253.532	4798.602	-2.489	-93.414	-2.489	93.447	268.473	0.631
4900.000	0.823	243.227	4898.587	-3.106	-95.046	-3.106	95.096	268.128	0.402
5000.000	0.948	250.719	4998.575	-3.702	-96.468	-3.702	96.539	267.802	0.170
5100.000	0.726	245.374	5098.564	-4.240	-97.825	-4.240	97.917	267.518	0.235
5200.000	0.361	268.637	5198.559	-4.511	-98.716	-4.511	98.819	267.383	0.420
5300.000	0.063	356.117	5298.559	-4.464	-99.035	-4.464	99.135	267.419	0.364
5400.000	0.280	120.345	5398.558	-4.533	-98.828	-4.533	98.931	267.374	0.320
5500.000	0.471	163.051	5498.556	-5.049	-98.497	-5.049	98.626	267.065	0.326
5600.000	0.912	198.064	5598.549	-6.199	-98.624	-6.199	98.818	266.403	0.592
5700.000	0.974	202.881	5698.536	-7.739	-99.201	-7.739	99.503	265.539	0.101
5800.000	0.892	208.145	5798.522	-9.208	-99.899	-9.208	100.322	264.734	0.119
5900.000	0.903	212.398	5898.510	-10.560	-100.688	-10.560	101.240	264.013	0.067
6000.000	0.669	210.590	5998.501	-11.727	-101.407	-11.727	102.083	263.404	0.235
6100.000	0.698	209.662	6098.494	-12.759	-102.005	-12.759	102.800	262.871	0.032
6200.000	0.585	193.553	6198.487	-13.785	-102.427	-13.785	103.350	262.335	0.212
6300.000	0.479	171.512	6298.483	-14.695	-102.485	-14.695	103.533	261.840	0.229
6400.000	0.166	143.675	6398.481	-15.224	-102.337	-15.224	103.464	261.538	0.341
6500.000	0.299	316.345	6498.481	-15.152	-102.432	-15.152	103.547	261.586	0.464
6600.000	0.513	273.123	6598.479	-14.939	-103.059	-14.939	104.136	261.752	0.359
6700.000	0.685	265.228	6698.473	-14.964	-104.101	-14.964	105.171	261.820	0.191
6800.000	0.397	252.683	6798.469	-15.117	-105.027	-15.117	106.110	261.810	0.309
6900.000	0.125	71.262	6898.468	-15.185	-105.255	-15.185	106.344	261.791	0.523
6950.000	0.306	92.966	6948.468	-15.174	-105.069	-15.174	106.160	261.782	0.390
HORIZONTAL DISPLACEMENT IS 106.160 FEET AT 261.782 DEGREES									