

Company: Anadarko Petroleum Corp.

Well: PTASNIK #1-35

API: 05-123-21832

Rig Name: Production / Phoenix

State/County: Colorado/Weld

Latitude: 40.275, Longitude: -104.851

Directions are relative to True North

VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = Ground Level

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro\_run01-01-de\_01.ut

Minimum Curvature Method

Report Date/Time: 11/7/2013 / 10:00

Vaughn Energy Services

Henderson, CO

303-853-4976

Charles Hines

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	0.297	151.636	100.000	-0.228	0.123	-0.228	0.259	151.636	0.297
200.000	0.282	180.077	199.998	-0.703	0.246	-0.703	0.745	160.702	0.143
300.000	0.265	273.233	299.998	-0.937	0.015	-0.937	0.937	179.057	0.397
400.000	0.628	258.335	399.994	-1.034	-0.752	-1.034	1.279	216.016	0.379
500.000	0.657	274.308	499.988	-1.102	-1.860	-1.102	2.162	239.352	0.181
600.000	0.462	322.754	599.984	-0.739	-2.675	-0.739	2.775	254.568	0.492
700.000	0.372	271.040	699.982	-0.412	-3.243	-0.412	3.269	262.761	0.372
800.000	0.398	209.234	799.980	-0.709	-3.737	-0.709	3.804	259.256	0.396
900.000	0.447	232.701	899.977	-1.248	-4.217	-1.248	4.398	253.509	0.178
1000.000	0.709	243.127	999.972	-1.764	-5.079	-1.764	5.377	250.843	0.282
1100.000	0.731	245.802	1099.964	-2.306	-6.213	-2.306	6.628	249.640	0.040
1200.000	0.802	250.257	1199.955	-2.804	-7.454	-2.804	7.964	249.387	0.093
1300.000	0.990	244.572	1299.943	-3.411	-8.893	-3.411	9.525	249.015	0.208
1400.000	0.917	265.859	1399.929	-3.840	-10.471	-3.840	11.153	249.862	0.359
1500.000	0.794	269.313	1499.918	-3.906	-11.962	-3.906	12.584	251.917	0.133
1600.000	1.000	262.394	1599.906	-4.030	-13.520	-4.030	14.108	253.403	0.232
1700.000	0.894	248.227	1699.892	-4.435	-15.110	-4.435	15.747	253.643	0.256
1800.000	0.858	247.495	1799.881	-5.011	-16.526	-5.011	17.269	253.133	0.038
1900.000	0.499	209.446	1899.874	-5.677	-17.432	-5.677	18.333	251.963	0.558
2000.000	0.497	221.136	1999.870	-6.382	-17.931	-6.382	19.033	250.408	0.101
2100.000	0.707	197.801	2099.865	-7.297	-18.405	-7.297	19.799	248.375	0.319
2200.000	0.588	224.844	2199.859	-8.248	-18.956	-8.248	20.672	246.485	0.324
2300.000	0.409	220.220	2299.855	-8.884	-19.548	-8.884	21.472	245.559	0.183
2400.000	0.471	215.346	2399.852	-9.492	-20.016	-9.492	22.153	244.629	0.072
2500.000	0.461	231.157	2499.849	-10.079	-20.567	-10.079	22.904	243.892	0.129
2600.000	0.523	229.905	2599.845	-10.626	-21.230	-10.626	23.740	243.411	0.063
2700.000	0.572	234.073	2699.840	-11.213	-21.983	-11.213	24.677	242.976	0.063
2800.000	0.641	191.487	2799.835	-12.054	-22.499	-12.054	25.524	241.820	0.445
2900.000	0.705	180.135	2899.828	-13.217	-22.611	-13.217	26.191	239.692	0.148
3000.000	0.758	187.234	2999.820	-14.488	-22.696	-14.488	26.926	237.447	0.105
3100.000	0.825	184.539	3099.811	-15.862	-22.836	-15.862	27.805	235.216	0.077
3200.000	0.808	205.857	3199.801	-17.214	-23.201	-17.214	28.890	233.426	0.303
3300.000	0.747	242.792	3299.792	-18.147	-24.088	-18.147	30.159	233.007	0.496
3400.000	0.892	220.188	3399.782	-19.039	-25.170	-19.039	31.560	232.895	0.351

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	0.846	239.080	3499.771	-20.013	-26.305	-20.013	33.053	232.736	0.289
3600.000	1.024	219.635	3599.758	-21.080	-27.508	-21.080	34.657	232.536	0.361
3700.000	1.101	196.109	3699.741	-22.692	-28.345	-22.692	36.309	231.320	0.440
3800.000	1.420	204.426	3799.717	-24.743	-29.124	-24.743	38.215	229.649	0.366
3900.000	1.480	214.525	3899.685	-26.935	-30.368	-26.935	40.592	228.428	0.262
4000.000	1.515	215.543	3999.651	-29.075	-31.868	-29.075	43.138	227.625	0.044
4100.000	1.273	229.327	4099.621	-30.874	-33.479	-30.874	45.541	227.318	0.412
4200.000	1.134	236.479	4199.599	-32.144	-35.146	-32.144	47.628	227.554	0.204
4300.000	1.002	252.971	4299.582	-32.946	-36.807	-32.946	49.398	228.168	0.333
4400.000	0.803	268.110	4399.570	-33.225	-38.343	-33.225	50.736	229.090	0.309
4500.000	0.631	285.329	4499.562	-33.103	-39.574	-33.103	51.594	230.088	0.274
4600.000	0.501	312.633	4599.557	-32.661	-40.427	-32.661	51.972	231.065	0.295
4700.000	0.519	310.166	4699.553	-32.073	-41.095	-32.073	52.129	232.029	0.028
4800.000	0.415	287.932	4799.550	-31.670	-41.786	-31.670	52.431	232.841	0.207
4900.000	0.674	272.795	4899.546	-31.529	-42.718	-31.529	53.094	233.570	0.294
5000.000	0.748	272.480	4999.538	-31.472	-43.957	-31.472	54.063	234.398	0.073
5100.000	0.799	269.861	5099.529	-31.446	-45.306	-31.446	55.150	235.236	0.062
5200.000	0.757	250.863	5199.520	-31.664	-46.628	-31.664	56.363	235.820	0.260
5300.000	0.917	269.899	5299.509	-31.882	-48.053	-31.882	57.667	236.436	0.319
5400.000	1.040	271.195	5399.495	-31.865	-49.761	-31.865	59.089	237.366	0.125
5500.000	1.176	259.996	5499.476	-32.024	-51.679	-32.024	60.797	238.215	0.255
5600.000	1.486	270.107	5599.449	-32.200	-53.986	-32.200	62.860	239.186	0.388
5700.000	1.103	249.534	5699.424	-32.534	-56.185	-32.534	64.925	239.927	0.597
5800.000	1.386	255.440	5799.400	-33.175	-58.257	-33.175	67.041	240.341	0.310
5900.000	1.336	245.966	5899.372	-33.953	-60.492	-33.953	69.370	240.695	0.230
6000.000	1.518	259.632	5999.341	-34.666	-62.859	-34.666	71.785	241.124	0.384
6100.000	1.815	267.640	6099.299	-34.970	-65.744	-34.970	74.466	241.991	0.377
6200.000	2.137	289.245	6199.241	-34.421	-69.087	-34.421	77.187	243.517	0.805
6300.000	1.730	297.780	6299.184	-33.102	-72.183	-33.102	79.411	245.364	0.498
6400.000	1.084	306.630	6399.153	-31.835	-74.277	-31.835	80.812	246.800	0.680
6500.000	0.780	4.712	6499.142	-30.592	-74.980	-30.592	80.981	247.805	0.943
6600.000	1.229	29.844	6599.127	-28.983	-74.390	-28.983	79.837	248.714	0.619
6700.000	1.475	50.434	6699.100	-27.233	-72.864	-27.233	77.787	249.507	0.541
6800.000	1.465	35.940	6799.067	-25.377	-71.121	-25.377	75.513	250.363	0.371
6900.000	0.669	63.381	6899.049	-24.080	-69.849	-24.080	73.883	250.978	0.924
7000.000	0.641	115.222	6999.044	-24.057	-68.821	-24.057	72.905	250.733	0.573
7100.000	1.289	147.441	7099.030	-25.244	-67.710	-25.244	72.262	249.554	0.822
HORIZONTAL DISPLACEMENT IS 72.262 FEET AT 249.554 DEGREES									