



Company: Anadarko Petroleum Corp.
Well: Peppler #4-30
API: 05-123-24253
Rig Name: Production / VES
State/County: Colorado/Weld
Latitude: 40.202, Longitude: -104.940
Directions are relative to True North
VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = Ground Level

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: ha gyro-de_01.ut

Minimum Curvature Method

Report Date/Time: 12/14/2013 / 16:17

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	0.282	106.272	100.000	-0.069	0.236	-0.069	0.246	106.272	0.282
200.000	0.305	141.006	199.998	-0.345	0.639	-0.345	0.726	118.321	0.177
300.000	0.105	234.225	299.998	-0.605	0.733	-0.605	0.950	129.535	0.328
400.000	0.175	217.034	399.998	-0.780	0.567	-0.780	0.964	143.995	0.081
500.000	0.098	172.020	499.997	-0.987	0.487	-0.987	1.100	153.741	0.126
600.000	0.412	165.965	599.996	-1.421	0.586	-1.421	1.537	157.587	0.314
700.000	0.580	160.330	699.992	-2.246	0.844	-2.246	2.399	159.416	0.174
800.000	0.497	155.976	799.988	-3.119	1.191	-3.119	3.339	159.108	0.092
900.000	0.611	168.920	899.983	-4.039	1.470	-4.039	4.298	160.003	0.168
1000.000	0.493	217.785	999.979	-4.902	1.308	-4.902	5.074	165.056	0.469
1100.000	0.526	246.695	1099.975	-5.424	0.623	-5.424	5.460	173.448	0.256
1200.000	0.395	253.615	1199.972	-5.703	-0.130	-5.703	5.705	181.302	0.142
1300.000	0.862	243.652	1299.966	-6.134	-1.134	-6.134	6.238	190.477	0.477
1400.000	0.942	241.337	1399.953	-6.862	-2.530	-6.862	7.314	200.235	0.088
1500.000	0.811	250.886	1499.942	-7.488	-3.920	-7.488	8.452	207.629	0.196
1600.000	1.255	244.772	1599.925	-8.187	-5.579	-8.187	9.907	214.274	0.457
1700.000	1.534	247.614	1699.896	-9.163	-7.807	-9.163	12.038	220.432	0.287
1800.000	1.510	260.238	1799.861	-9.896	-10.343	-9.896	14.315	226.265	0.335
1900.000	1.791	240.744	1899.820	-10.884	-13.006	-10.884	16.959	230.076	0.624
2000.000	2.002	251.356	1999.765	-12.206	-16.025	-12.206	20.144	232.703	0.409
2100.000	1.802	267.034	2099.711	-12.846	-19.250	-12.846	23.143	236.285	0.555
2200.000	1.716	286.591	2199.665	-12.500	-22.256	-12.500	25.526	240.680	0.603
2300.000	1.122	312.711	2299.634	-11.408	-24.411	-11.408	26.945	244.952	0.864
2400.000	0.999	331.504	2399.618	-9.977	-25.546	-9.977	27.426	248.667	0.367
2500.000	0.922	351.538	2499.604	-8.415	-26.081	-8.415	27.405	252.117	0.343
2600.000	0.839	334.191	2599.592	-6.960	-26.518	-6.960	27.416	255.294	0.278
2700.000	0.739	310.785	2699.583	-5.880	-27.325	-5.880	27.950	257.857	0.335
2800.000	0.522	322.144	2799.577	-5.099	-28.093	-5.099	28.552	259.713	0.249
2900.000	0.635	342.614	2899.572	-4.210	-28.538	-4.210	28.847	261.607	0.234
3000.000	0.733	329.076	2999.565	-3.133	-29.032	-3.133	29.201	263.842	0.188
3100.000	0.521	298.912	3099.559	-2.364	-29.758	-2.364	29.852	265.457	0.385
3200.000	0.200	262.413	3199.557	-2.168	-30.329	-2.168	30.406	265.912	0.379
3300.000	0.056	196.226	3299.557	-2.238	-30.515	-2.238	30.597	265.806	0.184
3400.000	0.522	127.618	3399.555	-2.563	-30.168	-2.563	30.277	265.145	0.504

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	1.344	155.316	3499.542	-3.906	-29.318	-3.906	29.577	262.411	0.915
3600.000	2.144	168.146	3599.495	-6.802	-28.444	-6.802	29.246	256.551	0.885
3700.000	2.166	172.077	3699.424	-10.504	-27.800	-10.504	29.718	249.301	0.149
3800.000	2.195	186.615	3799.353	-14.278	-27.760	-14.278	31.216	242.782	0.552
3900.000	2.307	184.761	3899.275	-18.185	-28.147	-18.185	33.511	237.134	0.134
4000.000	2.143	180.303	3999.200	-22.060	-28.324	-22.060	35.902	232.087	0.238
4100.000	1.859	181.316	4099.139	-25.551	-28.371	-25.551	38.181	227.994	0.286
4200.000	1.736	188.673	4199.090	-28.670	-28.637	-28.670	40.522	224.967	0.261
4300.000	1.884	193.238	4299.040	-31.768	-29.242	-31.768	43.178	222.629	0.206
4400.000	1.427	194.589	4398.998	-34.573	-29.932	-34.573	45.730	220.885	0.459
4500.000	1.172	203.502	4498.972	-36.716	-30.653	-36.716	47.830	219.858	0.324
4600.000	0.968	205.821	4598.955	-38.414	-31.429	-38.414	49.633	219.289	0.209
4700.000	1.069	224.630	4698.939	-39.838	-32.452	-39.838	51.383	219.167	0.347
4800.000	0.952	240.840	4798.924	-40.907	-33.833	-40.907	53.085	219.594	0.308
4900.000	0.682	250.715	4898.914	-41.508	-35.120	-41.508	54.372	220.235	0.304
5000.000	0.820	215.244	4998.906	-42.289	-36.095	-42.289	55.599	220.482	0.476
5100.000	0.902	232.657	5098.895	-43.351	-37.134	-43.351	57.081	220.583	0.273
5200.000	0.881	214.517	5198.883	-44.462	-38.195	-44.462	58.615	220.664	0.282
5300.000	0.600	215.741	5298.874	-45.521	-38.937	-45.521	59.902	220.542	0.282
5400.000	0.645	213.906	5398.868	-46.413	-39.557	-46.413	60.983	220.440	0.049
5500.000	0.866	188.390	5498.860	-47.628	-39.981	-47.628	62.184	220.012	0.397
5600.000	1.117	174.112	5598.845	-49.345	-39.991	-49.345	63.516	219.023	0.350
5700.000	1.062	186.082	5698.827	-51.237	-39.989	-51.237	64.995	217.971	0.234
5800.000	0.764	187.434	5798.814	-52.820	-40.174	-52.820	66.362	217.256	0.299
5900.000	0.664	180.774	5898.806	-54.061	-40.268	-54.061	67.410	216.681	0.130
6000.000	0.414	191.838	5998.802	-54.994	-40.350	-54.994	68.209	216.268	0.269
6100.000	0.137	260.852	6098.801	-55.367	-40.542	-55.367	68.623	216.213	0.387
6200.000	0.724	143.810	6198.798	-55.896	-40.287	-55.896	68.901	215.782	0.796
6300.000	1.369	150.600	6298.781	-57.446	-39.327	-57.446	69.618	214.395	0.655
6400.000	2.220	147.235	6398.731	-60.116	-37.693	-60.116	70.955	212.088	0.858
6500.000	2.417	150.863	6498.649	-63.586	-35.617	-63.586	72.882	209.255	0.245
6600.000	2.755	144.147	6598.548	-67.376	-33.183	-67.376	75.104	206.221	0.453
6700.000	2.491	137.167	6698.443	-70.918	-30.298	-70.918	77.119	203.133	0.414
6800.000	2.775	124.179	6798.338	-73.872	-26.818	-73.872	78.589	199.952	0.659
6900.000	2.353	124.275	6898.238	-76.388	-23.118	-76.388	79.809	196.838	0.422
7000.000	2.948	130.206	6998.131	-79.204	-19.458	-79.204	81.559	193.802	0.654
7100.000	3.190	137.247	7097.987	-82.907	-15.605	-82.907	84.363	190.660	0.447
HORIZONTAL DISPLACEMENT IS 84.363 FEET AT 190.660 DEGREES									