



Company: Anadarko Petroleum
Well: Inouye 15-31A
API: 05-123-21220
Rig Name: Production/ Warrior
State/County: Colorado/Weld
Latitude: 40.092, Longitude: -104.822
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: hgyro-de_01.ut
Minimum Curvature Method
Report Date/Time: 6/7/2014 / 19:12

VAUGHN ENERGY SERVICES
HENDERSON, COLORADO
303-853-4976
SEAN BRATT

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	0.478	326.242	99.999	0.347	-0.232	0.347	0.417	326.242	0.478
200.000	1.135	307.744	199.989	1.300	-1.247	1.300	1.801	316.199	0.698
300.000	1.283	319.745	299.966	2.761	-2.753	2.761	3.899	315.078	0.293
400.000	1.337	316.755	399.940	4.465	-4.276	4.465	6.183	316.239	0.087
500.000	1.495	332.227	499.910	6.469	-5.684	6.469	8.611	318.700	0.412
600.000	1.416	333.242	599.878	8.726	-6.847	8.726	11.092	321.879	0.083
700.000	1.798	336.839	699.838	11.272	-8.021	11.272	13.834	324.565	0.395
800.000	2.923	333.165	799.752	14.989	-9.789	14.989	17.902	326.853	1.135
900.000	3.079	340.862	899.615	19.802	-11.820	19.802	23.061	329.166	0.432
1000.000	2.974	346.343	999.476	24.859	-13.313	24.859	28.200	331.830	0.308
1100.000	2.768	342.953	1099.350	29.688	-14.633	29.688	33.099	333.762	0.267
1200.000	2.599	341.059	1199.241	34.141	-16.077	34.141	37.737	334.784	0.191
1300.000	2.447	338.784	1299.144	38.275	-17.585	38.275	42.122	335.324	0.182
1400.000	2.197	327.228	1399.062	41.876	-19.395	41.876	46.150	335.149	0.529
1500.000	2.175	336.303	1498.990	45.225	-21.195	45.225	49.945	334.890	0.346
1600.000	2.171	326.607	1598.918	48.544	-23.000	48.544	53.717	334.649	0.367
1700.000	2.056	326.482	1698.850	51.621	-25.033	51.621	57.371	334.129	0.115
1800.000	1.814	344.852	1798.794	54.645	-26.437	54.645	60.704	334.182	0.662
1900.000	1.691	311.439	1898.750	57.149	-27.957	57.149	63.621	333.932	1.014
2000.000	0.871	343.820	1998.725	58.856	-29.276	58.856	65.735	333.554	1.063
2100.000	2.090	101.477	2098.703	59.223	-27.700	59.223	65.381	334.933	2.611
2200.000	4.944	114.525	2198.506	57.071	-21.992	57.071	61.162	338.927	2.945
2300.000	6.438	131.921	2298.018	51.537	-13.899	51.537	53.378	344.907	2.266
2400.000	7.370	105.382	2397.317	46.088	-3.541	46.088	46.224	355.607	3.290
2500.000	8.619	109.983	2496.344	41.826	9.686	41.826	42.933	13.039	1.402
2600.000	10.539	110.993	2594.945	35.989	25.268	35.989	43.973	35.073	1.928
2700.000	12.162	115.983	2692.988	28.096	43.278	28.096	51.598	57.008	1.896
2800.000	14.193	123.938	2790.358	16.635	62.922	16.635	65.083	75.191	2.718
2900.000	17.061	126.773	2886.653	1.005	84.848	1.005	84.854	89.321	2.968
3000.000	18.780	131.029	2981.802	-18.346	108.745	-18.346	110.282	99.576	2.160
3100.000	20.348	134.667	3076.029	-41.138	133.256	-41.138	139.461	107.156	1.985
3200.000	22.437	132.988	3169.135	-66.375	159.583	-66.375	172.836	112.584	2.176
3300.000	23.270	130.827	3261.286	-92.301	188.491	-92.301	209.877	116.090	1.182
3400.000	26.210	130.000	3352.098	-119.416	220.362	-119.416	250.638	118.454	2.961
3500.000	28.612	130.339	3440.864	-149.114	255.534	-149.114	295.859	120.265	2.406

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
3600.000	31.088	129.003	3527.592	-180.866	293.854	-180.866	345.055	121.612	2.564
3700.000	33.412	128.568	3612.159	-214.284	335.450	-214.284	398.051	122.570	2.336
3800.000	32.473	128.413	3696.080	-248.130	378.013	-248.130	452.175	123.281	0.942
3900.000	30.461	130.383	3781.372	-281.236	418.361	-281.236	504.103	123.910	2.260
4000.000	32.401	133.111	3866.699	-315.974	457.234	-315.974	555.790	124.647	2.405
4100.000	34.211	132.555	3950.270	-353.300	497.504	-353.300	610.190	125.380	1.836
4200.000	34.359	132.539	4032.895	-391.390	539.005	-391.390	666.118	125.985	0.148
4300.000	34.591	130.883	4115.334	-429.048	581.259	-429.048	722.458	126.432	0.966
4400.000	34.526	130.357	4197.689	-465.978	624.315	-465.978	779.041	126.737	0.305
4500.000	35.153	131.235	4279.765	-503.305	667.560	-503.305	836.034	127.014	0.803
4600.000	34.664	131.489	4361.771	-541.121	710.512	-541.121	893.106	127.293	0.510
4700.000	33.327	131.372	4444.677	-578.119	752.431	-578.119	948.881	127.536	1.338
4800.000	30.252	131.827	4529.666	-613.084	791.827	-613.084	1001.430	127.749	3.084
4900.000	30.908	127.583	4615.767	-645.552	830.956	-645.552	1052.247	127.843	2.256
5000.000	30.674	124.225	4701.678	-675.565	872.402	-675.565	1103.392	127.753	1.735
5100.000	29.863	124.960	4788.044	-704.179	913.898	-704.179	1153.723	127.615	0.892
5200.000	27.886	127.544	4875.612	-732.699	952.849	-732.699	1201.985	127.559	2.338
5300.000	25.863	127.025	4964.807	-760.086	988.808	-760.086	1247.186	127.549	2.036
5400.000	24.248	126.159	5055.394	-785.337	1022.803	-785.337	1289.528	127.518	1.657
5500.000	22.867	127.288	5147.058	-809.226	1054.842	-809.226	1329.488	127.494	1.452
5600.000	20.873	127.677	5239.857	-831.888	1084.404	-831.888	1366.736	127.493	1.999
5700.000	19.331	127.780	5333.762	-852.918	1111.587	-852.918	1401.105	127.499	1.542
5800.000	17.558	126.338	5428.621	-871.997	1136.822	-871.997	1432.740	127.490	1.831
5900.000	15.864	125.036	5524.395	-888.783	1160.165	-888.783	1461.478	127.455	1.735
6000.000	14.255	126.671	5620.958	-903.984	1181.233	-903.984	1487.447	127.426	1.664
6100.000	11.971	126.488	5718.344	-917.506	1199.448	-917.506	1510.130	127.414	2.284
6200.000	10.344	123.415	5816.451	-928.618	1215.282	-928.618	1529.458	127.384	1.732
6300.000	8.563	121.482	5915.089	-937.451	1229.126	-937.451	1545.821	127.333	1.809
6400.000	6.792	122.394	6014.189	-944.507	1240.469	-944.507	1559.120	127.286	1.775
6500.000	5.940	123.209	6113.572	-950.509	1249.791	-950.509	1570.174	127.254	0.857
6600.000	4.588	122.393	6213.147	-955.486	1257.497	-955.486	1579.320	127.229	1.354
6700.000	3.526	113.240	6312.897	-958.842	1263.700	-958.842	1586.290	127.190	1.240
6800.000	2.054	107.867	6412.775	-960.605	1268.232	-960.605	1590.966	127.142	1.494
6900.000	1.553	110.696	6512.726	-961.634	1271.204	-961.634	1593.957	127.107	0.509
7000.000	1.262	135.462	6612.696	-962.898	1273.244	-962.898	1596.347	127.099	0.667
7100.000	0.980	133.418	6712.677	-964.270	1274.638	-964.270	1598.286	127.108	0.285
7200.000	0.900	113.522	6812.664	-965.171	1275.979	-965.171	1599.899	127.104	0.334
7300.000	0.877	126.915	6912.652	-965.945	1277.311	-965.945	1601.428	127.098	0.209
7400.000	0.627	24.868	7012.647	-965.908	1278.153	-965.908	1602.078	127.079	1.180
7500.000	0.465	37.153	7112.642	-965.088	1278.628	-965.088	1601.963	127.045	0.199
7600.000	0.813	60.453	7212.636	-964.415	1279.491	-964.415	1602.246	127.007	0.428
7700.000	1.901	356.519	7312.611	-962.409	1280.007	-962.409	1601.452	126.939	1.708
7750.000	2.151	344.738	7362.580	-960.676	1279.710	-960.676	1600.174	126.896	0.968

<div> HORIZONTAL DISPLACEMENT IS 1600.174 FEET AT 126.896 DEGREES </div>
