

# GreenHouse Gas GC configuration

## November 2008

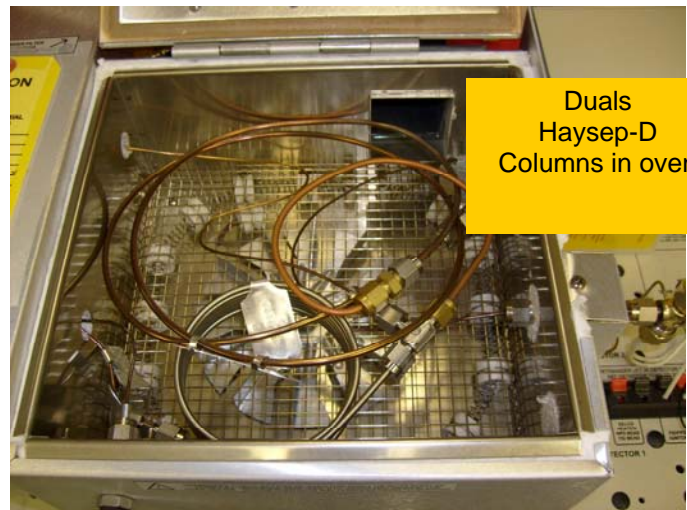
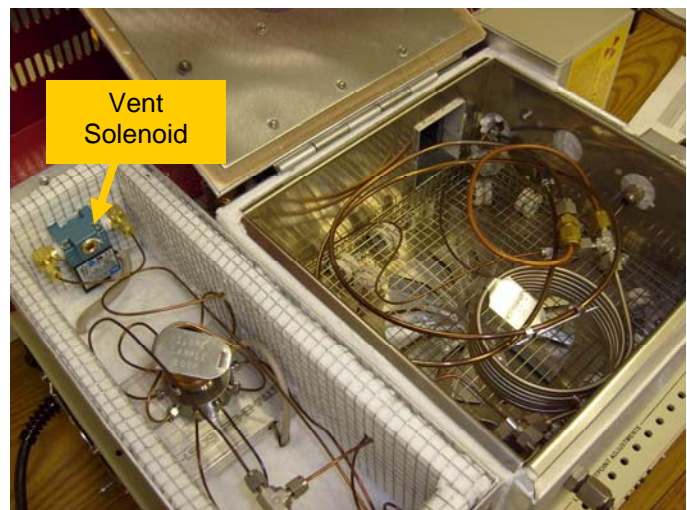
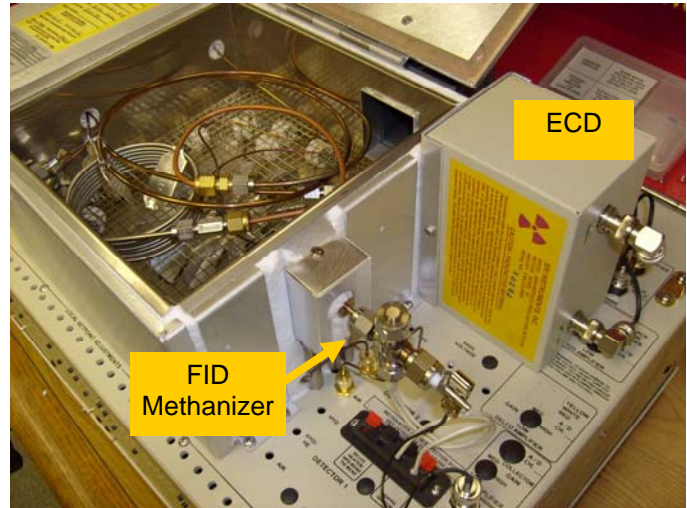
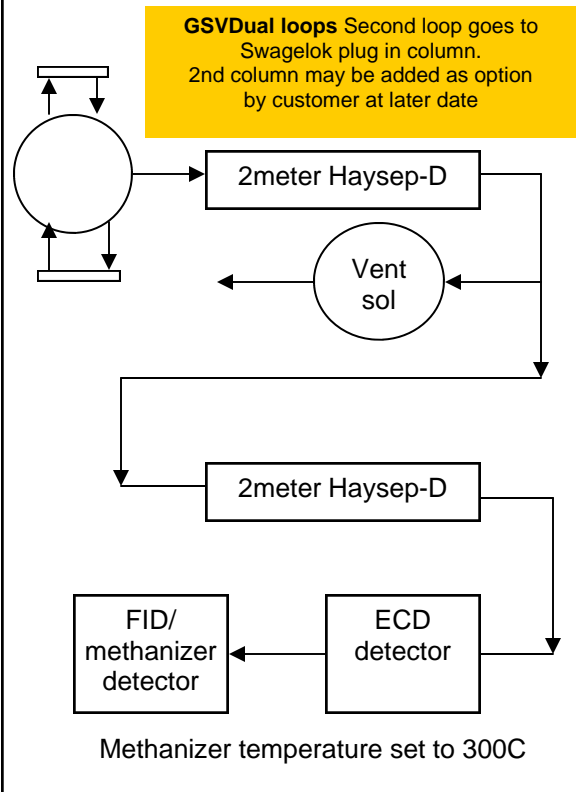
The SRI GreenHouse Gas GC configuration consists of an Electron Capture Detector ( ECD ) and a Flame Ionization Detector ( FID ) plus Methanizer.

The ECD detects Nitrous Oxide ( N<sub>2</sub>O ) while the FID/Methanizer detects methane ( CH<sub>4</sub> ) and Carbon Dioxide ( CO<sub>2</sub> ).

Based on field experience over the last few years, we have changed the plumbing and columns slightly to improve the analysis.

As of August 2008 we now suggest a combination of a 2 meter Haysep-D column in series with another 2 meter Haysep-D column..

The system is operated on Nitrogen carrier at 20 psi with NO makeup gas provided for the ECD to keep the flow to the FID in the normal range ( although makeup gas may be utilized if desired ). Makeup gas may make the FID flame harder to light since the total flow will then be higher. Hydrogen and Air are supplied to the FID/Methanizer as normal.

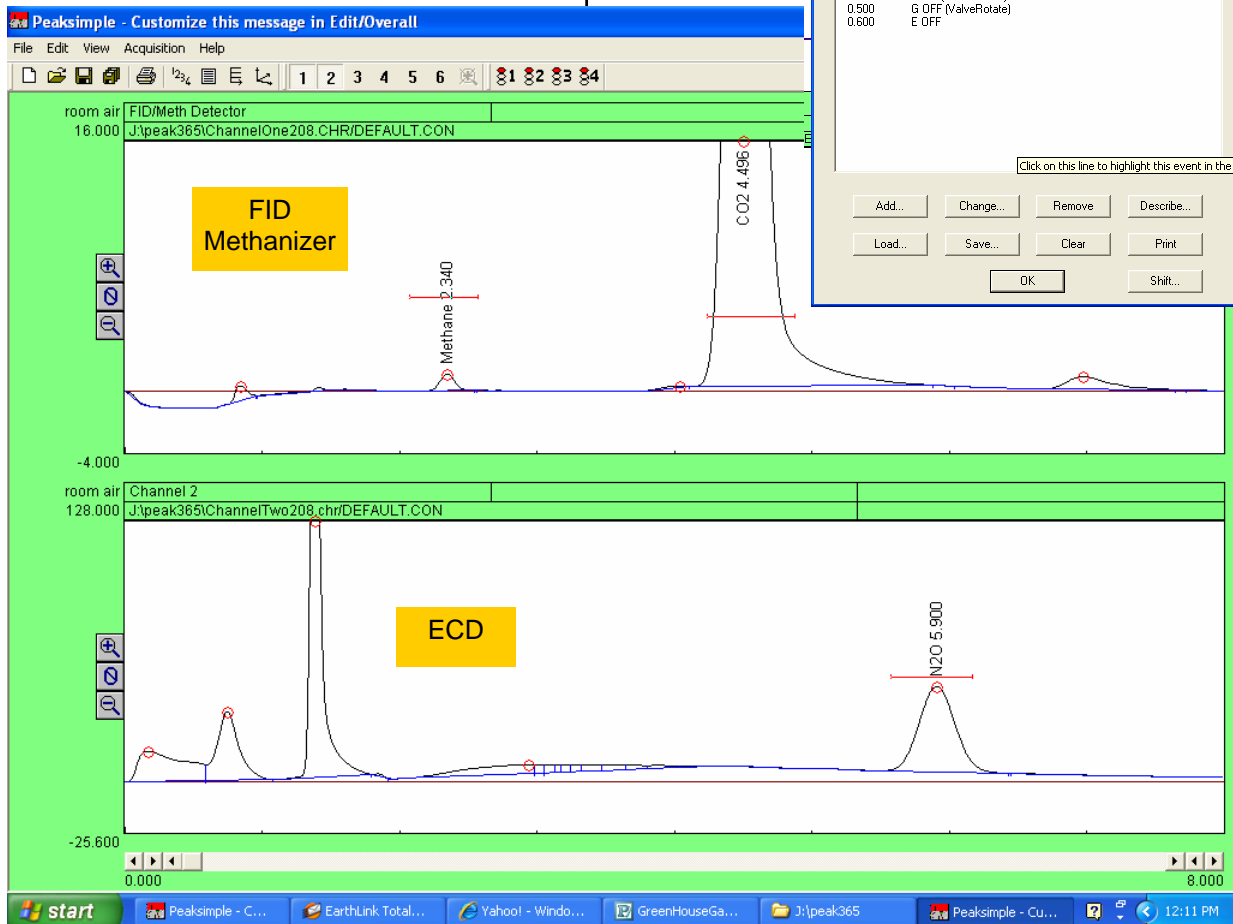
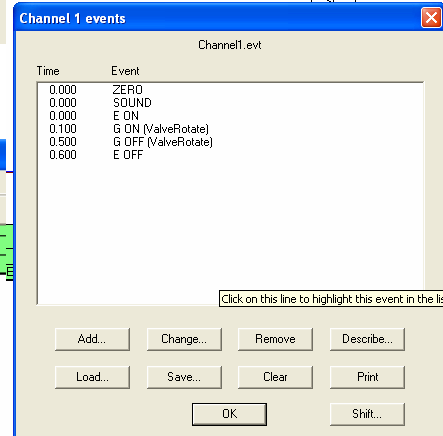
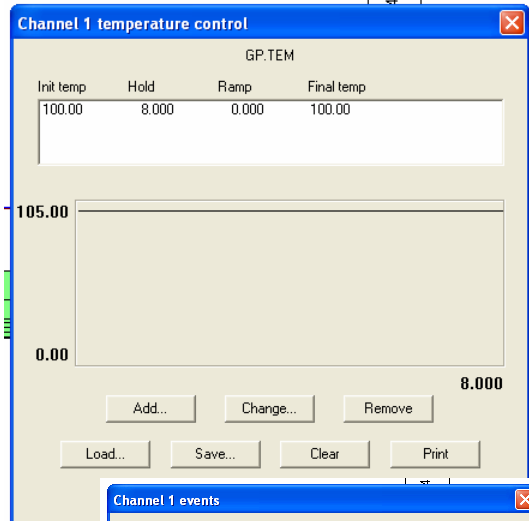


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The oven temperature is set to 100C isothermal for 8 minutes.

The Event table is set to open the vent solenoid at 0.00 minutes ( Relay E on ) and then close the solenoid at .6 minutes ( Relay E off ) once the Oxygen peak has passed through the Haysep-D column, but prior to the Methane, CO2 and N2O peaks leaving the Haysep-D column and passing into the Shincarbon column.



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The system was set up to inject a 1ml room air sample every 10 minutes. The log file showing the results is below.

Precision for the Methane calculates out at 1.758% RSD ( relative standard deviation )

Precision for the Carbon Dioxide is .898% RSD.

Precision for the N2O is 1.48% RSD.

CH1 - Notepad														
File	Edit	Format	View	Help										
Channe1one132.CHR	8/4/2008	23:51:48	"Air"	0.823	7.3689	"Methane"	2.216	7.5924	"CO2"	4.286	1389.7792	"N2O"	5.623	330.6918
Channe1one133.CHR	8/5/2008	00:01:48	"Air"	0.823	6.4882	"Methane"	2.233	7.3805	"CO2"	4.310	1342.9488	"N2O"	5.663	561.0004
Channe1one134.CHR	8/5/2008	00:11:48	"Air"	0.823	6.6796	"Methane"	2.233	7.0681	"CO2"	4.316	1300.9669	"N2O"	5.690	593.0335
Channe1one135.CHR	8/5/2008	00:21:49	"Air"	0.823	6.6965	"Methane"	2.226	7.4102	"CO2"	4.303	1270.1577	"N2O"	5.663	602.9166
Channe1one136.CHR	8/5/2008	00:31:49	"Air"	0.823	6.5994	"Methane"	2.240	7.2521	"CO2"	4.326	1249.0572	"N2O"	5.686	603.5564
Channe1one137.CHR	8/5/2008	00:41:49	"Air"	0.823	5.8870	"Methane"	2.236	7.4922	"CO2"	4.313	1238.0019	"N2O"	5.670	604.3670
Channe1one138.CHR	8/5/2008	00:51:49	"Air"	0.823	6.3124	"Methane"	2.226	7.0678	"CO2"	4.286	1256.0470	"N2O"	5.630	596.5552
Channe1one139.CHR	8/5/2008	01:01:49	"Air"	0.823	6.1018	"Methane"	2.226	7.1942	"CO2"	4.303	1255.2185	"N2O"	5.660	588.3664
Channe1one140.CHR	8/5/2008	01:11:49	"Air"	0.823	5.8466	"Methane"	2.233	7.3878	"CO2"	4.296	1235.1054	"N2O"	5.640	599.2249
Channe1one141.CHR	8/5/2008	01:21:49	"Air"	0.823	5.9383	"Methane"	2.230	7.1724	"CO2"	4.303	1253.0933	"N2O"	5.656	596.2715
Channe1one142.CHR	8/5/2008	01:31:49	"Air"	0.823	5.8316	"Methane"	2.233	7.3730	"CO2"	4.306	1260.1965	"N2O"	5.660	606.4350
Channe1one143.CHR	8/5/2008	01:41:49	"Air"	0.823	5.3020	"Methane"	2.226	7.1606	"CO2"	4.280	1256.6370	"N2O"	5.620	612.0866
Channe1one144.CHR	8/5/2008	01:51:49	"Air"	0.823	5.3068	"Methane"	2.223	7.2110	"CO2"	4.273	1252.9418	"N2O"	5.616	598.7680
Channe1one145.CHR	8/5/2008	02:01:49	"Air"	0.823	5.3520	"Methane"	2.236	7.0275	"CO2"	4.303	1265.2672	"N2O"	5.650	603.3568
Channe1one146.CHR	8/5/2008	02:11:49	"Air"	0.823	5.4221	"Methane"	2.226	6.9518	"CO2"	4.270	1265.8468	"N2O"	5.610	602.4838
Channe1one147.CHR	8/5/2008	02:21:49	"Air"	0.826	5.3388	"Methane"	2.226	7.4046	"CO2"	4.270	1254.3799	"N2O"	5.603	605.9136
Channe1one148.CHR	8/5/2008	02:31:49	"Air"	0.826	5.1607	"Methane"	2.223	7.1925	"CO2"	4.260	1278.0048	"N2O"	5.596	601.4134
Channe1one149.CHR	8/5/2008	02:41:49	"Air"	0.826	4.8442	"Methane"	2.223	7.6812	"CO2"	4.260	1277.2264	"N2O"	5.593	590.4367
Channe1one150.CHR	8/5/2008	02:51:49	"Air"	0.826	4.8750	"Methane"	2.230	7.2820	"CO2"	4.266	1282.0038	"N2O"	5.593	593.3551
Channe1one151.CHR	8/5/2008	03:01:49	"Air"	0.826	4.7564	"Methane"	2.220	7.5582	"CO2"	4.253	1285.7531	"N2O"	5.583	599.0742
Channe1one152.CHR	8/5/2008	03:11:49	"Air"	0.823	4.8581	"Methane"	2.226	7.7303	"CO2"	4.260	1284.9084	"N2O"	5.590	594.9783
Channe1one153.CHR	8/5/2008	03:21:50	"Air"	0.826	4.8538	"Methane"	2.223	7.8222	"CO2"	4.260	1284.5184	"N2O"	5.593	596.4048
Channe1one154.CHR	8/5/2008	03:31:50	"Air"	0.823	5.2220	"Methane"	2.220	7.3934	"CO2"	4.260	1283.5444	"N2O"	5.586	593.0875
Channe1one155.CHR	8/5/2008	03:41:50	"Air"	0.826	4.9164	"Methane"	2.226	7.4274	"CO2"	4.260	1288.4186	"N2O"	5.593	596.3021
Channe1one156.CHR	8/5/2008	03:51:50	"Air"	0.823	4.6272	"Methane"	2.220	7.4782	"CO2"	4.260	1288.4338	"N2O"	5.576	595.5493
Channe1one157.CHR	8/5/2008	04:01:50	"Air"	0.823	4.2014	"Methane"	2.216	7.4182	"CO2"	4.243	1277.8372	"N2O"	5.570	585.9217
Channe1one158.CHR	8/5/2008	04:11:50	"Air"	0.823	4.4777	"Methane"	2.216	7.8064	"CO2"	4.246	1303.3968	"N2O"	5.570	599.4085
Channe1one159.CHR	8/5/2008	04:21:50	"Air"	0.823	4.1492	"Methane"	2.210	7.2386	"CO2"	4.230	1302.4039	"N2O"	5.546	589.5602
Channe1one160.CHR	8/5/2008	04:31:50	"Air"	0.823	4.2031	"Methane"	2.210	7.3353	"CO2"	4.233	1288.8882	"N2O"	5.556	586.2133
Channe1one161.CHR	8/5/2008	04:41:50	"Air"	0.823	4.2902	"Methane"	2.206	7.5546	"CO2"	4.226	1315.4937	"N2O"	5.546	590.0966
Channe1one162.CHR	8/5/2008	04:51:50	"Air"	0.823	3.9858	"Methane"	2.210	7.5110	"CO2"	4.230	1308.4033	"N2O"	5.550	584.5178
Channe1one163.CHR	8/5/2008	05:01:50	"Air"	0.826	4.1620	"Methane"	2.213	7.4190	"CO2"	4.236	1315.6852	"N2O"	5.560	587.3088
Channe1one164.CHR	8/5/2008	05:11:50	"Air"	0.826	4.2682	"Methane"	2.206	7.3668	"CO2"	4.220	1328.1308	"N2O"	5.540	592.1264
Channe1one165.CHR	8/5/2008	05:21:50	"Air"	0.826	4.0630	"Methane"	2.213	7.4038	"CO2"	4.233	1335.4669	"N2O"	5.553	595.6426
Channe1one166.CHR	8/5/2008	05:31:50	"Air"	0.826	4.4080	"Methane"	2.220	7.7878	"CO2"	4.243	1343.8139	"N2O"	5.563	592.2929
Channe1one167.CHR	8/5/2008	05:41:50	"Air"	0.826	4.2781	"Methane"	2.216	7.6642	"CO2"	4.236	1335.7870	"N2O"	5.550	591.9470
Channe1one168.CHR	8/5/2008	05:51:50	"Air"	0.826	3.9452	"Methane"	2.216	7.4032	"CO2"	4.246	1352.4970	"N2O"	5.580	587.1776
Channe1one169.CHR	8/5/2008	06:01:50	"Air"	0.826	4.0760	"Methane"	2.223	7.9279	"CO2"	4.260	1355.7916	"N2O"	5.590	591.5060
Channe1one170.CHR	8/5/2008	06:11:50	"Air"	0.826	4.1187	"Methane"	2.223	7.7336	"CO2"	4.260	1353.4986	"N2O"	5.593	603.5868
Channe1one171.CHR	8/5/2008	06:21:51	"Air"	0.823	4.0584	"Methane"	2.226	8.2321	"CO2"	4.263	1341.5530	"N2O"	5.593	601.3160
Channe1one172.CHR	8/5/2008	06:31:51	"Air"	0.826	3.9170	"Methane"	2.223	8.0858	"CO2"	4.260	1343.5202	"N2O"	5.590	595.8104
Channe1one173.CHR	8/5/2008	06:41:51	"Air"	0.823	4.0305	"Methane"	2.216	7.5496	"CO2"	4.253	1369.6518	"N2O"	5.580	598.0225
Channe1one174.CHR	8/5/2008	06:51:51	"Air"	0.826	3.8654	"Methane"	2.220	7.5921	"CO2"	4.253	1359.9718	"N2O"	5.586	603.3530
Channe1one175.CHR	8/5/2008	07:01:51	"Air"	0.823	3.7322	"Methane"	2.220	8.1286	"CO2"	4.260	1341.2518	"N2O"	5.580	606.5226
Channe1one176.CHR	8/5/2008	07:11:51	"Air"	0.823	3.8682	"Methane"	2.220	8.0838	"CO2"	4.260	1355.7686	"N2O"	5.576	601.1051
Channe1one177.CHR	8/5/2008	07:21:51	"Air"	0.823	3.8845	"Methane"	2.223	7.9576	"CO2"	4.256	1382.1894	"N2O"	5.586	598.1806
Channe1one178.CHR	8/5/2008	07:31:51	"Air"	0.826	3.8398	"Methane"	2.213	7.8769	"CO2"	4.243	1379.0064	"N2O"	5.573	595.2523
Channe1one179.CHR	8/5/2008	07:41:51	"Air"	0.820	3.6783	"Methane"	2.213	7.9848	"CO2"	4.243	1380.8489	"N2O"	5.566	596.5170
Channe1one180.CHR	8/5/2008	07:51:51	"Air"	0.826	3.4170	"Methane"	2.220	7.9510	"CO2"	4.253	1371.0434	"N2O"	5.580	599.7343
Channe1one181.CHR	8/5/2008	08:01:51	"Air"	0.826	3.9674	"Methane"	2.220	8.1068	"CO2"	4.253	1383.3352	"N2O"	5.580	601.8132
Channe1one182.CHR	8/5/2008	08:11:51	"Air"	0.823	3.9248	"Methane"	2.216	8.5974	"CO2"	4.243	1378.9056	"N2O"	5.573	596.6560
Channe1one183.CHR	8/5/2008	08:21:51	"Air"	0.823	3.9849	"Methane"	2.220	8.1850	"CO2"	4.250	1407.6158	"N2O"	5.586	603.7776
Channe1one184.CHR	8/5/2008	08:31:51	"Air"	0.823	3.6241	"Methane"	2.216	8.0908	"CO2"	4.260	1403.5795	"N2O"	5.573	607.1468
Channe1one185.CHR	8/5/2008	08:41:51	"Air"	0.826	3.2294	"Methane"	2.223	8.6674	"CO2"	4.253	1427.0136	"N2O"	5.583	611.8580
Channe1one186.CHR	8/5/2008	08:51:51	"Air"	0.826	3.5990	"Methane"	2.220	8.4644	"CO2"	4.253	1442.7970	"N2O"	5.576	600.5823
Channe1one187.CHR	8/5/2008	09:01:51	"Air"	0.826	3.4768	"Methane"	2.220	8.5330	"CO2"	4.253	1425.3836	"N2O"	5.580	598.5939
Channe1one188.CHR	8/5/2008	09:11:51	"Air"	0.826	3.4910	"Methane"	2.223	8.4692	"CO2"	4.256	1435.3814	"N2O"	5.590	605.6288
Channe1one189.CHR	8/5/2008	09:21:52	"Air"	0.826	3.6618	"Methane"	2.223	8.6698	"CO2"	4.263	1465.4586	"N2O"	5.593	602.2466
Channe1one190.CHR	8/5/2008	09:31:52	"Air"	0.826	3.5109	"Methane"	2.216	8.5872	"CO2"	4.246	1477.5995	"N2O"	5.573	600.8008
Channe1one191.CHR	8/5/2008	09:41:52	"Air"	0.826	3.4642	"Methane"	2.216	8.4866	"CO2"	4.246	1442.0884	"N2O"	5.573	608.4952
Channe1one192.CHR	8/5/2008	09:51:52	"Air"	0.826	3.1804	"Methane"	2.223	8.5423	"CO2"	4.260	1451.6274	"N2O"	5.593	599.0757
Channe1one193.CHR	8/5/2008	10:01:52	"Air"	0.826	3.3077	"Methane"	2.223	8.2054	"CO2"	4.256	1444.8708	"N2O"	5.586	608.7886
Channe1one194.CHR	8/5/2008	10:11:52	"Air"	0.826	3.3634	"Methane"	2.226	8.1723	"CO2"	4.270	1435.0254	"N2O"	5.606	607.1068
Channe1one195.CHR	8/5/2008	10:21:52	"Air"	0.826	3.5127	"Methane"	2.226	7.9538	"CO2"	4.266	1428.2958	"N2O"	5.613	604.8614
Channe1one196.CHR	8/5/2008	10:31:52	"Air"	0.826	3.2724	"Methane"	2.226	8.0488	"CO2"	4.273	1407.0155	"N2O"	5.616	599.8266
Channe1one197.CHR	8/5/2008	10:41:52	"Air"	0.826	3.3470	"Methane"	2.230	7.7925	"CO2"	4.276	1416.8850	"N2O"	5.616	620.5794
Channe1one198.CHR	8/5/2008	10:51:52	"Air"	0.826	3.3386	"Methane"	2.226	8.0446	"CO2"	4.270	1406.3842	"N2O"	5.613	618.8649