APPENDIX

to

SCRIPPS REFERENCE GAS CALIBRATION SYSTEM FOR CARBON DIOXIDE-IN-NITROGEN AND CARBON DIOXIDE-IN-AIR STANDARDS: REVISION OF 1999

A Report Prepared for the Global Environmental Monitoring Program

of the World Meteorological Organization

by

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March, 2002

APPENDIX A1. MANOMETRIC REFERENCE GAS MEASUREMENTS: ORIGINAL DATA

Mercury column data are listed for all measurements of CO2 reference gases made on the constant-volume mercury-column manometer from December 1969 to April 1999. All measurements were made by Peter Guenther. Notes on the columns in the table follow.

Date — Date of the measurement, in YYYYMMDD.

Cyl. No. — High-pressure gas cylinder number stamped onto the cylinder by the manufacturer, without any prefix letters (e.g. most standard size Coyne steel cylinders have a prefix of DL-).

Run — Consecutive run number for a reference gas during a calendar calibration year.

Gas Type — Type of gas, other than CO_2, comprising the reference gas, i.e. the carrier gas: nitrogen (N2), natural-air (AIR), and synthetic air, consisting of nitrogen and oxygen (SAIR). This identification determines calculation of the virial coefficient for the total gas measurements.

Meniscus Corr. — Correction applied to the mercury column measurements to account for differing sizes of the glass tubing on the vacuum and sample columns and for non-level swing of the cathetometer telescope. Corrections were determined experimentally. The correction for 4cc chamber measurements is labeled CO2 and for 5000 cc chamber measurements, GAS. After 1985 a constant meniscus correction of -0.340 mm for the 4 cc chamber was often applied because of difficulties in accurate measurement of the correction. However, all calibrations of primary reference gases reported here have meniscus corrections that were measured concurrently.

Mercury Column Data for CO2 & Total Gas Vols. — Each line of the mercury column data in the table is preceded by the individual determination number: the first sequence for each reference gas is for the measurements of extracted CO_2 gas in the 4 cc chamber, and the second sequence is for the measurements of total gas in the 5000 cc chamber. Usually there are two of the former and one of the latter measurements. Each line lists the vacuum and sample mercury-column measurements made with the cathetometer, along with the temperature measured near the 4 cc chamber with a mercury thermometer.

Oxy Fr — For a synthetic air reference gas (SAIR), the fraction of oxygen in the carrier gas is listed, the remainder assumed to be nitrogen gas. The virial coefficient for the total gas measurement is calculated by linear combination of the pure oxygen and pure nitrogen virial coefficients.

CO2 Conc. — Mole fraction of CO_2 in the reference gas as calculated from the mercury column data, using the volume ratio of 1320.61 (5014.9 cc/ 3.7974 cc). Numbers are calculated for each individual

	determination in the 4 cc chamber. In cases where there is more than one determination of the total gas, only the first is used (in this table) to calculate the mole fraction.
N2O Conc.	Mole fraction of N_2O gas in the total gas, as measured by gas chromatography.
CO2-N2O Conc.	Mole fraction of CO_2 corrected by subtraction of the mole fraction of N_2O, since the manometric measurement of CO2 gas includes the N_2O component.
Flg	An F in the column indicates that the measurement has been rejected.
Comments	Notes indicating unusual experimental observations. No comment for a flagged measurement usually means that an outlier measurement has been rejected for statistical reasons.

APPENDIX A1. MANOMETRIC REFERENCE GAS MEASUREMENTS: ORIGINAL DATA

Cylinder No.	Owner	Cylinder No.	Owner
101	NOAA/CMDL	34790	SIO
103	NOAA/CMDL	34819	SIO
105	NOAA/CMDL	34891	SIO
107	NOAA/CMDL	35299	SIO
110	NOAA/CMDL	35316	SIO
111	NOAA/CMDL	35355	SIO
136	NOAA/CMDL	35378	SIO
139	NOAA/CMDL	35389	SIO
181	SIO	35401	SIO
1540	SIO	35405	SIO
1607	NOAA/AOML	35434	SIO
1641	NOAA/AOML	35435	SIO
2399	SIO	35441	SIO
2401	SIO	35442	SIO
2405	SIO	35452	SIO
2408	SIO	39239	SIO
2424	SIO	39256	SIO
3071	NOAA/CMDL	39272	SIO
3074	NOAA/CMDL	39354	SIO
3082	NOAA/CMDL	39361	SIO
3091	NOAA/CMDL	44695	SIO
3092	NOAA/CMDL	44726	SIO
3753	SIO	61130	NBS
3756	SIO	62206	NBS
4274	SIO	62807	SIO
4286	SIO	62814	SIO
4289	SIO	62817	SIO
4296	SIO	64329	SIO
4826	TOHOKU U.(JAPAN)	66556	SIO
4827	TOHOKU U.(JAPAN)	66625	SIO
4828	TOHOKU U.(JAPAN)	66638	SIO
4829	TOHOKU U.(JAPAN)	66696	SIO
6052	SIO	67615	SIO
6071	SIO	71251	SIO
6078	SIO	71286	SIO
7358	SIO	71308	SIO
7361	SIO	71341	SIO
7366	SIO	71370	SIO
8386	NBS	71479	SIO
8433	NBS	73292	SIO
8699	NBS	75593	SIO
10067	SIO	75934	SIO
10069	SIO	83230	IOS(CANADA)
11062	NBS	83369	IOS(CANADA)
11076	SIO	83377	IOS(CANADA)
11081	SIO	83378	IOS(CANADA)
11092	SIO	83379	IOS(CANADA)
11094	SIO	83382	IOS(CANADA)
11429	NBS	83389	IOS(CANADA)
11835	NBS	83391	IOS(CANADA)
16410	NBS	83392	IOS(CANADA)
16417	NBS	83398	IOS(CANADA)
18027	NBS	83412	IOS(CANADA)
18040	NBS	127524	SIO
18042	NBS	127693	SIO
18067	NBS	243988	NBS
34770	SIO		

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	Mercury Column Data for CO2 & Total Gas Vols.	Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19691202	6078	6	N2	-0.430	-0.070	1	618.844	374.697	20.01		310.86			00	
19691202						2	618.899	374.646	20.09		310.90			0F	RERUN AFTER TRANSFER OUT/IN
19691201						1	772.173	177.232	20.15					00	
19691202	6078	7	N2	-0.430	-0.070	1	618.124	374.682	19.91		311.01			00	
19691203						2	618.472	374.684	20.24		311.09			0F	RERUN AFTER TRANSFER OUT/IN
19691202						1	769.870	177.252	19.91					00	
19691203	2399	1	N2	-0.430	-0.070	1	626.890	374.694	20.21		324.12			00	
19691204						2	626.996	374.678	20.58		323.84			0F	RERUN AFTER TRANSFER OUT/IN
19691203						1	766.602	177.249	20.29					00	
19691204	2399	2	N2	-0.430	-0.070	1	631.857	374.685	20.30		324.57			00	
19691205						2	631.688	374.693	20.23		324.43			0F	RERUN AFTER TRANSFER OUT/IN
19691204						1	777.489	177.274	20.40					0F	
19691209	6078	8	N2	-0.430	-0.070	1	617.370	374.774	19.88		310.62			00	
19691209						2	617.566	374.779	20.18		310.53			0F	RERUN AFTER TRANSFER OUT/IN
19691208						1	768.700	177.370	19.89					00	
19691210	6078	9	N2	-0.430	-0.070	1	616.716	374.621	19.26		311.00			00	
19691210						2	617.249	374.620	19.99		310.86			0F	RERUN AFTER TRANSFER OUT/IN
19691209						1	767.572	177.315	19.68					00	
19691211	10069	1	N2	-0.430	-0.070	1	652.387	374.613	18.75		355.71			00	
19691211						2	653.019	374.594	19.53		355.54			0F	RERUN AFTER TRANSFER OUT/IN
19691210						1	771.326	177.243	19.95					00	
19691211	6078	10	N2	-0.430	-0.070	1	620.472	374.621	19.86		310.93			00	
19691212						2	620.165	374.629	19.62		310.80			0F	RERUN AFTER TRANSFER OUT/IN
19691211						1	774.840	177.182	19.39					00	
19700310	6078	11	N2	-0.384	-0.127	1	613.548	371.014	19.19		311.07			00	
19700310						2	613.381	370.996	19.13		310.95			0F	RERUN AFTER TRANSFER OUT/IN
19700309						1	764.348	173.649	19.30					00	
19700311	2399	3	N2	-0.384	-0.127	1	622.094	371.019	19.19		323.99			00	
19700312						2	622.165	370.994	19.26		324.03			0F	RERUN AFTER TRANSFER OUT/IN
19700310						1	760.504	173.657	19.14					00	
19700312	2399	4	N2	-0.384	-0.127	1	624.113	371.014	19.36		324.46			00	
19700312						2	624.026	371.001	19.32		324.41			0F	RERUN AFTER TRANSFER OUT/IN
19700312						1	764.160	173.552	19.25					0F	
19700423	2399	5	N2	-0.330	-0.104	1	627.755	370.962	20.16		324.10			00	
19700424						2	627.410	370.948	19.88		324.01			0F	RERUN AFTER TRANSFER OUT/IN
19700423						1	773.375	173.374	20.04					00	
19700424	10069	2	N2	-0.330	-0.104	1	649.408	370.963	20.03		355.74			00	
19700424						2	649.137	370.943	19.86		355.63			0F	RERUN AFTER TRANSFER OUT/IN
19700424						1	766.329	173.512	19.88					00	
19700428	10069	3	N2	-0.330	-0.104	1	651.634	370.944	19.56		355.46			00	
19700428						2	651.895	370.964	19.71		355.57			0F	RERUN AFTER TRANSFER OUT/IN
19700427						1	771.880	173.519	19.54					00	
19700429	2399	6	N2	-0.330	-0.104	1	622.990	370.970	19.40		324.09			00	
19700429						2	623.235	370.973	19.68		324.07			0F	RERUN AFTER TRANSFER OUT/IN
19700428						1	762.994	173.472	19.60					00	
19700511	7366	1	N2	-0.444	0.000	1	585.092	370.982	19.98		276.48			00	
19700512						2	584.772	371.005	19.67		276.35			0F	RERUN AFTER TRANSFER OUT/IN
19700511						1	759.159	173.600	19.80					00	
19700512	7366	2	N2	-0.444	0.000	1	587.199	370.962	19.65		276.60			00	
19700512						2	587.418	370.971	19.91		276.61			0F	RERUN AFTER TRANSFER OUT/IN
19700512						1	765.191	173.633	19.66					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19700513	7366	3	N2	-0.444	0.000	1	588.257	370.974	19.74		276.63			00	
19700513						2	588.190	370.949	19.75		276.56			0F	RERUN AFTER TRANSFER OUT/IN
19700512						1	768.269	173.495	19.94					00	
19700513	2399	7	N2	-0.444	0.000	1	624.333	370.965	20.09		324.19			00	
19700514						2	623.965	370.947	19.68		324.22			0F	RERUN AFTER TRANSFER OUT/IN
19700513						1	764.334	173.561	19.66					00	
19700514	10069	4	N2	-0.444	0.000	1	646.598	370.962	19.73		355.65			00	
19700514						2	646.910	370.969	20.05		355.64			0F	RERUN AFTER TRANSFER OUT/IN
19700514						1	760.347	173.545	19.67					00	
19700515	6078	12	N2	-0.444	0.000	1	612.586	370.998	19.73		311.14			00	
19700515						2	612.607	370.976	19.81		311.11			0F	RERUN AFTER TRANSFER OUT/IN
19700514						1	762.000	173.492	20.09					00	
19700515	2399	8	N2	-0.444	0.000	1	623.445	370.956	20.17		323.98			00	
19700515						2	623.625	370.949	20.44		323.90			0F	RERUN AFTER TRANSFER OUT/IN
19700515						1	762.927	173.588	19.85					00	
19721020	6078	1	N2	-0.392	0.018	1	619.690	370.652	19.45		310.88			00	
19721020						2	619.609	370.648	19.53		310.69			00	
19721019						1	779.309	173.358	19.17					00	
19721019						2	779.349	173.340	19.20					00	
19721031	2399	1	N2	-0.392	0.018	1	641.364	370.633	19.39		324.66			00	
19721101						2	641.700	370.636	19.49		324.94			00	
19721031						1	805.611	173.230	19.74					00	
19721102	6078	2	N2	-0.392	0.018	1	623.334	370.639	19.35		310.71			00	
19721103						2	624.043	370.672	19.80		311.04			00	
19721101						1	789.278	173.298	19.42					00	
19721106	10069	1	N2	-0.392	0.018	1	667.633	370.648	19.96		355.87			00	
19721106						2	667.629	370.638	20.01		355.81			00	
19721102						1	803.699	173.270	19.16					00	
19721108	2399	2	N2	-0.392	0.018	1	637.156	370.658	19.70		324.44			00	
19721108						2	637.490	370.620	19.86		324.71			00	
19721103						1	794.616	173.270	19.37					00	
19721106						2	796.107	173.248	20.04					00	
19721109	10069	2	N2	-0.392	0.018	1	667.890	370.647	19.73		356.23			00	
19721109						2	667.847	370.632	19.78		356.13			00	
19721108						1	805.530	173.312	19.75					00	
19721113	2399	3	N2	-0.392	0.018	1	639.276	370.654	20.07		324.53			00	
19721113						2	639.323	370.646	20.17		324.48			00	
19721110						1	797.927	173.277	19.08					00	
19740117	6078	1	N2	-0.346	-0.096	1	630.310	370.613	18.12		310.78			00	
19740118						2	630.018	370.616	17.78		310.81			00	
19740116						1	806.112	173.226	18.05					00	
19740118	6078	2	N2	-0.346	-0.096	1	633.028	370.615	19.97		310.84			00	
19740121						2	633.696	370.604	20.63		310.91			00	
19740117						1	808.666	173.278	18.17					00	
19740121	35435	1	AIR	-0.346	-0.096	1	648.730	370.629	20.35		334.42	0.29	334.13	00	
19740122						2	648.808	370.594	20.53		334.34	0.29	334.05	00	
19740121						1	803.574	173.248	20.48					00	
19740123	35435	2	AIR	-0.346	-0.096	1	648.762	370.582	20.52		334.46	0.29	334.17	00	
19740123						2	648.838	370.590	20.56		334.50	0.29	334.21	00	
19740122						1	803.725	173.275	20.66					00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	Mercury Column Data for CO2 & Total Gas Vols. Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19740124	2399	1	N2	-0.346	-0.096	1 642.001	370.607	20.70		323.90			00	
19740124						2 641.622	370.544	20.56		323.68			00	HG JUMPING TOWARDS POINTER
19740125						3 641.968	370.584	20.70		323.89			00	HG JUMPING TOWARDS POINTER
19740123						1 807.787	173.234	20.58					00	
19740128	2399	2	N2	-0.346	-0.096	1 641.952	370.641	20.51		324.19			00	
19740128						2 642.088	370.603	20.66		324.23			00	
19740124						1 807.650	173.232	20.67					00	
19740129	2399	3	N2	-0.346	-0.096	1 639.336	370.654	20.39		324.06			00	
19740130						2 639.482	370.636	20.55		324.07			00	HG JUMPING TOWARDS POINTER
19740128						1 801.884	173.293	20.58					00	
19740130	10069	1	N2	-0.346	-0.096	1 668.694	370.628	20.94		355.69			00	HG JUMPING TOWARDS POINTER
19740131						2 668.442	370.654	20.74		355.61			00	
19740130						1 808.097	173.326	20.80					00	
19740201	10069	2	N2	-0.346	-0.096	1 663.690	370.674	20.12		355.55			00	
19740201						2 663.540	370.634	20.03		355.53			00	
19740130						1 799.587	173.198	20.94					00	
19740201	2424	1	N2	-0.346	-0.096	1 694.926	370.648	20.22		392.30			00	
19740204						2 695.554	370.672	20.58		392.52			00	
19740205						3 695.071	370.660	20.30		392.34			00	
19740201						1 799.548	173.217	20.08					00	
19740205	2424	2	N2	-0.346	-0.096	1 695.576	370.660	20.47		392.33			00	VACUUM COLUMN FALLING DURING MEASUREMENT
19740206						2 695.941	370.684	20.83		392.23			00	
19740205						1 800.724	173.258	20.31					00	
19740206	7366	1	N2	-0.346	-0.096	1 606.055	370.629	20.15		276.82			00	HG JUMPING TOWARDS POINTER
19740207						2 606.245	370.658	20.50		276.66			00	
19740207						3 606.380	370.622	20.46		276.90			00	
19740206						1 818.852	173.252	20.81					00	
19740208	7366	2	N2	-0.346	-0.096	1 604.208	370.661	20.13		276.76			00	
19740208						2 604.116	370.648	19.94		276.85			00	
19740207						1 813.325	173.333	20.54					00	
19740208	3753	1	N2	-0.346	-0.096	1 578.580	370.658	20.11		246.03			00	
19740211						2 579.294	370.636	21.07		246.05			00	
19740208						1 812.929	173.306	20.05					00	
19740212	3753	2	N2	-0.346	-0.096	1 582.288	370.660	21.08		246.00			00	
19740213						2 582.150	370.656	20.92		245.99			00	
19740211						1 824.325	173.280	20.99					00	
19740213	35452	1	SAIR	-0.346	-0.096	1 637.822	370.630	20.67		323.82			00	VACUUM COLUMN FALLING DURING MEASUREMENT
19740213						2 637.689	370.612	20.62		323.74			00	VACUUM COLUMN FALLING DURING MEASUREMENT
19740212						1 799.477	173.418	21.11	0.188				00	HG CONTACTED POINTER DURING MEASUREMENT
19740213						2 798.985	173.243	20.99	0.188				00	
19740214	35452	2	SAIR	-0.346	-0.096	1 639.234	370.666	20.30		323.86			00	
19740214						2 639.229	370.645	20.27		323.91			00	
19740214						3 639.196	370.652	20.20		323.95			00	HG CONTACTED POINTER PREMATURELY
19740213						1 802.350	173.350	20.64	0.188				00	HG CONTACTED POINTER DURING MEASUREMENT
19740220	6078	3	N2	-0.346	-0.096	1 627.881	370.593	20.19		310.79			00	
19740221						2 627.693	370.595	19.99		310.79			00	
19740214						1 800.465	173.242	20.24					00	
19740225	35434	1	SAIR	-0.346	-0.096	1 640.876	370.573	20.97		323.97			00	HG CONTACTED POINTER PREMATURELY
19740225						2 640.912	370.570	20.99		323.99			00	
19740226						3 640.212	370.622	20.27		323.92			00	
19740225						1 805.011	173.240	20.83	0.188				00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19740226	35434	2	SAIR	-0.346	-0.096	1	639.810	370.593	20.99		323.87			00	
19740227						2	639.709	370.624	20.87		323.85			00	
19740226						1	801.586	173.274	20.36	0.188				00	
19740227	35389	1	SAIR	-0.346	-0.096	1	649.209	370.607	20.65		335.21			00	
19740227						2	649.449	370.584	20.77		335.38			00	
19740227						1	803.450	173.274	20.86	0.209				00	
19740228	35389	2	SAIR	-0.346	-0.096	1	648.837	370.622	20.15		335.31			00	
19740228						2	649.021	370.595	20.20		335.51			00	
19740227						1	803.218	173.300	20.72	0.209				00	
19740228	35441	1	SAIR	-0.346	-0.096	1	646.485	370.577	20.92		331.99			00	
19740301						2	645.232	370.616	19.64		331.96			00	
19740228						1	801.108	173.278	20.14	0.414				00	
19740301	35441	2	SAIR	-0.346	-0.096	1	647.291	370.603	20.16		332.12			00	HG CONTACTED POINTER PREMATURELY
19740301						2	647.306	370.610	20.20		332.08			00	
19740301						1	803.402	173.218	19.74	0.414				00	
19740304	35442	1	SAIR	-0.346	-0.096	1	647.417	370.592	20.89		326.96			00	
19740305						2	647.324	370.620	20.65		327.09			00	
19740304						1	813.978	173.276	20.60	0.579				00	
19740305	35442	2	SAIR	-0.346	-0.096	1	641.505	370.601	21.01		326.97			00	HG CONTACTED POINTER PREMATURELY
19740307						2	640.722	370.625	20.11		327.05			00	
19740305						1	800.229	173.332	20.70	0.579				00	
19740307	35435	3	AIR	-0.346	-0.096	1	648.074	370.620	20.57		334.29	0.29	334.00	00	HG CONTACTED POINTER PREMATURELY
19740307						2	648.027	370.587	20.49		334.37	0.29	334.08	00	
19740305						1	803.052	173.280	21.00					00	
19740308	2399	4	N2	-0.346	-0.096	1	636.706	370.580	20.76		324.08			00	
19740308						2	636.866	370.586	20.84		324.17			00	
19740307						1	795.051	173.212	20.63					00	
19740409	35405	1	AIR	-0.346	-0.096	1	648.984	370.643	20.75		337.29	0.29	337.00	00	
19740410						2	649.046	370.650	20.86		337.23	0.29	336.94	00	
19740409						1	797.619	173.284	20.36					00	
19740410	44726	1	SAIR	-0.346	-0.096	1	627.215	370.644	20.79		309.48			00	
19740410						2	627.325	370.612	20.80		309.64			00	
19740410						1	801.326	173.243	20.85	0.224				00	
19740411	35405	2	AIR	-0.346	-0.096	1	653.406	370.648	21.02		337.27	0.29	336.98	00	
19740411						2	653.436	370.607	21.03		337.34	0.29	337.05	00	
19740410						1	807.931	173.256	20.79					00	
19740412	44695	1	SAIR	-0.346	-0.096	1	662.720	370.636	20.70		351.98			00	
19740412						2	663.005	370.631	20.95		352.01			00	
19740411						1	802.820	173.263	21.03	0.217				00	
19740412	44726	2	SAIR	-0.346	-0.096	1	627.333	370.614	21.05		309.59			00	
19740412						2	627.322	370.618	21.04		309.58			00	
19740412						1	801.111	173.240	20.95	0.224				00	
19740415	44695	2	SAIR	-0.346	-0.096	1	663.100	370.624	20.98		351.75			00	
19740415						2	663.245	370.632	20.96		351.94			00	
19740415						1	803.283	173.256	20.96	0.217				00	
19740507	35378	1	AIR	-0.346	-0.096	1	665.224	370.644	20.76		355.82	0.29	355.53	00	HG CONTACTED POINTER PREMATURELY
19740507						2	665.161	370.608	20.65		355.93	0.29	355.64	00	
19740506						1	800.343	173.254	20.65					00	
19740508	35378	2	AIR	-0.346	-0.096	1	665.419	370.642	20.95		355.98	0.29	355.69	00	
19740508						2	665.409	370.616	20.96		355.98	0.29	355.69	00	
19740507						1	800.246	173.278	20.72					00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	Mercury Column Data for CO2 & Total Gas Vols. Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19740510	35401	2	AIR	-0.346	-0.096	1 665.067	370.653	20.33		353.26	0.30	352.96	00	
19740510						2 664.922	370.630	20.23		353.24	0.30	352.94	00	
19740509						1 805.116	173.232	20.48					00	
19740510	34770	1	AIR	-0.346	-0.096	1 649.649	370.630	20.08		338.67	0.29	338.38	00	
19740510						2 649.455	370.601	19.75		338.87	0.29	338.58	00	
19740510						1 797.885	173.261	20.27					00	
19740515	34770	2	AIR	-0.346	-0.096	1 650.481	370.632	20.59		338.90	0.29	338.61	00	
19740515						2 650.509	370.600	20.65		338.90	0.29	338.61	00	HG CONTACTED POINTER PREMATURELY
19740514						1 799.107	173.238	20.70					00	
19740515	35401	3	AIR	-0.346	-0.096	1 662.242	370.602	20.80		353.21	0.30	352.91	00	
19740515						2 662.328	370.570	20.79		353.36	0.30	353.06	00	
19740515						1 798.520	173.284	20.61					00	
19740522	2408	1	N2	-0.346	-0.096	1 533.715	370.644	20.36		196.93			00	
19740522						2 533.662	370.620	20.43		196.85			00	
19740521						1 799.513	173.319	20.28					00	
19740522	2408	2	N2	-0.346	-0.096	1 536.086	370.620	20.25		196.91			00	
19740522						2 536.005	370.602	20.17		196.89			00	
19740522						1 809.296	173.247	20.42					00	
19740523	35316	1	N2	-0.346	-0.096	1 758.428	370.624	19.92		473.03			00	TEMPERATURE INSTABILITY
19740523						2 757.934	370.581	19.63		472.98			00	TEMPERATURE INSTABILITY
19740522						1 795.825	173.264	20.22					00	
19740523	35316	2	N2	-0.346	-0.096	1 758.398	370.618	19.31		472.91			00	TEMPERATURE INSTABILITY
19740523						2 758.636	370.592	19.46		472.97			00	
19740523						1 796.412	173.266	19.81					00	TEMPERATURE INSTABILITY
19740524	35299	1	N2	-0.346	-0.096	1 714.074	370.621	19.77		415.19			00	TEMPERATURE INSTABILITY
19740524						2 714.054	370.582	19.86		415.07			00	
19740523						1 799.722	173.256	19.43					00	TEMPERATURE INSTABILITY
19740524	35299	2	N2	-0.346	-0.096	1 714.184	370.606	19.94		414.91			00	
19740524						2 714.235	370.584	19.90		415.05			00	TEMPERATURE INSTABILITY
19740524						1 800.763	173.193	19.80					00	
19741014	39239	1	N2	-0.391	-0.142	1 652.583	371.044	20.06		332.64			00	
19741014						2 652.609	371.039	19.96		332.80			00	
19741015						3 652.628	371.068	19.89		332.87			00	
19741014						1 815.255	173.596	20.23					00	
19741015	1540	1	N2	-0.391	-0.142	1 685.812	371.067	19.89		380.50			00	
19741015						2 685.739	371.066	19.82		380.51			00	
19741015						1 800.690	173.708	19.89					00	
19741016	39239	2	N2	-0.391	-0.142	1 646.394	371.068	19.76		332.83			00	
19741016						2 646.288	371.020	19.76		332.76			00	
19741016						1 800.907	173.639	20.00					00	
19741017	1540	2	N2	-0.391	-0.142	1 685.224	371.029	19.47		380.63			00	
19741017						2 685.436	371.032	19.66		380.62			00	
19741016						1 799.969	173.625	19.77					00	
19790918	6078	1	N2	-0.327	0.014	1 631.082	375.030	25.20		310.90			00	
19790918						2 631.308	375.029	25.44		310.91			00	
19790918						1 800.626	177.772	24.78					00	
19790919	6078	2	N2	-0.327	0.014	1 628.809	375.025	25.58		311.07			00	HG CONTACTED POINTER PREMATURELY
19790919						2 628.880	375.015	25.76		310.97			00	
19790919						1 791.396	177.666	23.67					00	
19790925	2399	1	N2	-0.327	0.014	1 640.555	375.046	21.66		324.12			00	
19790925						2 640.690	375.019	21.85		324.10			00	CATHETOMETER MANUAL CONTROL SLIPPING
19790924						1 800.785	177.686	22.82					00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	Mercury Column Data for CO2 & Total Gas Vols. Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19790925	2399	2	N2	-0.327	0.014	1 638.898	375.018	22.77		324.21			00	
19790925						2 639.061	375.020	22.98		324.17			00	
19790925						1 791.927	177.644	21.75					00	
19791003	10069	1	N2	-0.327	0.014	1 665.985	375.074	21.67		355.89			00	
19791003						2 666.104	375.060	21.81		355.88			00	
19791003						1 795.945	177.706	21.16					00	
19791005	10069	2	N2	-0.327	0.014	1 667.001	375.058	21.46		355.81			00	
19791005						2 667.066	375.040	21.63		355.70			00	
19791005						1 798.440	177.753	21.00					00	
19791009	7366	1	N2	-0.327	0.014	1 602.787	375.033	21.60		276.74			00	
19791009						2 602.802	375.042	21.69		276.66			00	
19791005						1 800.818	177.788	21.56					00	
19791019	7366	2	N2	-0.327	0.014	1 602.506	375.061	21.65		276.65			00	
19791019						2 602.506	375.048	21.68		276.64			00	
19791019						1 799.952	177.744	21.53					00	
19800515	34770	1	AIR	-0.345	-0.012	1 651.653	375.068	21.94		339.12	0.29	338.83	0F	INSTRUMENTAL PROBLEM
19800515						2 651.574	375.022	21.90		339.13	0.29	338.84	0F	INSTRUMENTAL PROBLEM
19800515						1 794.843	177.620	21.67					0F	INSTRUMENTAL PROBLEM
19800516	34770	2	AIR	-0.345	-0.012	1 651.238	375.044	21.85		339.53	0.29	339.24	0F	INSTRUMENTAL PROBLEM
19800516						2 651.239	375.036	21.88		339.50	0.29	339.21	0F	INSTRUMENTAL PROBLEM
19800515						1 794.023	177.672	21.92					0F	INSTRUMENTAL PROBLEM
19800516	35405	1	AIR	-0.345	-0.012	1 650.569	375.062	21.91		337.32	0.29	337.03	00	
19800516						2 650.650	375.044	22.00		337.33	0.29	337.04	00	
19800516						1 796.399	177.804	21.87					00	
19800523	35405	2	AIR	-0.345	-0.012	1 649.951	375.068	21.78		337.26	0.29	336.97	00	
19800523						2 649.906	375.032	21.83		337.19	0.29	336.90	00	
19800523						1 795.248	177.698	21.85					00	
19800529	34770	3	AIR	-0.345	-0.012	1 652.978	375.058	22.25		338.75	0.29	338.46	00	
19800529						2 653.030	375.034	22.33		338.75	0.29	338.46	00	
19800528						1 799.250	177.770	22.25					00	
19800530	35401	1	AIR	-0.345	-0.012	1 663.036	375.066	21.77		353.03	0.30	352.73	00	HG CONTACTED POINTER PREMATURELY
19800530						2 663.129	375.032	21.94		352.97	0.30	352.67	00	
19800529						1 796.914	177.758	22.30					00	
19800530	35401	2	AIR	-0.345	-0.012	1 663.022	375.059	21.91		353.07	0.30	352.77	00	
19800530						2 662.973	375.014	21.94		353.03	0.30	352.73	00	
19800530						1 795.554	177.768	21.86					00	
19800530	243988	1	AIR	-0.345	-0.012	1 658.064	375.054	21.91		347.00	0.29	346.71	00	
19800530						2 658.130	375.030	22.07		346.91	0.29	346.62	00	
19800530						1 795.769	177.859	21.93					00	
19800603	62206	1	AIR	-0.345	-0.012	1 647.824	375.032	22.06		333.56	0.30	333.26	00	
19800603						2 647.818	375.040	22.09		333.51	0.30	333.21	00	
19800603						1 796.661	177.728	21.82					00	
19800604	61130	1	AIR	-0.345	-0.012	1 652.862	375.054	21.89		340.26	0.31	339.95	00	
19800604						2 653.003	375.030	22.07		340.24	0.31	339.93	00	
19800603						1 796.715	177.813	22.08					00	
19800604	62206	2	AIR	-0.345	-0.012	1 648.118	375.044	22.18		333.49	0.30	333.19	00	
19800604						2 648.069	375.028	22.18		333.45	0.30	333.15	00	
19800604						1 797.606	177.807	21.98					00	
19800605	75934	1	SAIR	-0.345	-0.012	1 651.016	375.086	21.59		338.29			0F	DRIFTING CYLINDER
19800605						2 651.162	375.052	21.80		338.25			0F	DRIFTING CYLINDER
19800604						1 796.828	177.772	22.18	0.800				0F	DRIFTING CYLINDER

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19800609	243988	2	AIR	-0.345	-0.012	1	657.972	375.043	22.17		346.96	0.29	346.67	00	
19800609						2	658.052	375.018	22.23		347.01	0.29	346.72	00	
19800609						1	795.093	177.798	21.96					00	
19800610	61130	2	AIR	-0.345	-0.012	1	651.996	375.046	21.99		340.22	0.31	339.91	00	
19800610						2	652.056	375.028	22.13		340.15	0.31	339.84	00	
19800609						1	794.773	177.706	22.19					00	
19800613	34770	4	AIR	-0.345	-0.012	1	652.696	375.050	21.90		338.67	0.29	338.38	00	
19800613						2	652.702	375.034	21.93		338.67	0.29	338.38	00	
19800612						1	798.487	177.700	21.80					00	
19800613	127524	1	SAIR	-0.345	-0.012	1	653.394	375.042	22.04		339.58			0F	HG CONTACTED POINTER PREMATURELY
19800613						2	653.586	375.044	22.12		339.72			0F	DRIFTING CYLINDER
19800613						1	798.300	177.848	21.90	1.000				0F	DRIFTING CYLINDER
19800616	127693	1	SAIR	-0.345	-0.012	1	670.429	375.058	22.17		360.98			0F	HG CONTACTED POINTER PREMATURELY
19800616						2	670.502	375.019	22.17		361.11			0F	DRIFTING CYLINDER
19800616						1	797.247	177.808	22.01	1.000				0F	DRIFTING CYLINDER
19800618	66556	1	AIR	-0.345	-0.012	1	458.129	375.024	22.26		101.40	0.37	101.03	00	
19800618						2	458.118	375.032	22.25		101.38	0.37	101.01	00	
19800616						1	795.680	177.730	22.15					00	
19800618	71251	1	AIR	-0.345	-0.012	1	550.573	375.028	22.29		213.54	0.34	213.20	00	
19800618						2	550.507	375.036	22.23		213.50	0.34	213.16	00	HG CONTACTED POINTER PREMATURELY
19800618						1	799.468	177.764	22.23					00	
19800619	39239	1	N2	-0.345	-0.012	1	646.899	375.044	21.96		332.63			00	
19800619						2	646.966	375.046	22.00		332.66			00	
19800618						1	797.614	177.848	22.25					00	
19800619	39239	2	N2	-0.345	-0.012	1	647.789	375.076	22.13		332.80			00	
19800619						2	647.830	375.056	22.18		332.82			00	
19800619						1	798.090	177.728	21.95					00	
19800620	1540	1	N2	-0.345	-0.012	1	685.324	375.024	22.08		380.03			0F	
19800620						2	685.422	375.035	22.16		380.02			0F	
19800619						1	796.639	177.700	22.14					0F	
19800624	1540	2	N2	-0.345	-0.012	1	685.738	375.053	22.22		380.45			00	
19800624						2	685.668	375.016	22.15		380.50			00	
19800624						1	795.532	177.702	21.74					00	
19800625	35299	1	N2	-0.345	-0.012	1	714.217	375.042	22.07		414.90			00	
19800625						2	714.204	375.034	22.07		414.90			00	
19800624						1	797.756	177.824	22.17					00	
19800625	35299	2	N2	-0.345	-0.012	1	713.628	375.058	22.42		415.00			00	
19800625						2	713.514	375.015	22.40		414.94			00	
19800625						1	795.440	177.775	22.06					00	
19800626	35316	1	N2	-0.345	-0.012	1	761.232	375.025	21.98		471.67			0F	
19800626						2	761.358	375.004	22.09		471.67			0F	
19800625						1	799.739	177.815	22.40					0F	
19800626	35316	2	N2	-0.345	-0.012	1	761.475	375.022	22.38		472.65			00	
19800626						2	761.556	375.018	22.39		472.74			00	
19800626						1	797.028	177.704	22.03					00	
19800627	3753	1	N2	-0.345	-0.012	1	575.810	375.052	22.00		246.00			00	
19800627						2	575.835	375.028	22.06		246.01			00	
19800626						1	796.145	177.652	22.39					00	
19800627	3753	2	N2	-0.345	-0.012	1	575.764	375.061	22.22		245.99			00	HG CONTACTED POINTER PREMATURELY
19800627						2	575.778	375.038	22.30		245.97			00	
19800627						1	794.767	177.717	22.02					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19800909	127524	2	SAIR	-0.359	-0.015	1	651.782	375.037	21.36		340.28			00	HG CONTACTED POINTER PREMATURELY
19800909						2	652.071	374.998	21.66		340.32			00	
19800908						1	794.131	177.765	21.58	1.000				00	
19800909	127693	2	SAIR	-0.359	-0.015	1	669.801	375.012	21.99		361.41			00	
19800909						2	669.892	375.013	22.04		361.46			00	
19800909						1	794.690	177.714	21.62	1.000				00	
19800910	75934	2	SAIR	-0.359	-0.015	1	652.038	375.032	21.54		339.10			00	
19800910						2	652.122	375.006	21.69		339.05			00	
19800909						1	797.602	177.902	22.01	0.800				00	
19800910	2408	1	N2	-0.359	-0.015	1	536.180	375.028	22.24		196.74			00	HG CONTACTED POINTER PREMATURELY
19800910						2	536.137	375.024	22.17		196.75			00	HG CONTACTED POINTER PREMATURELY
19800910						1	795.764	177.770	21.59					00	
19800911	75934	3	SAIR	-0.359	-0.015	1	653.824	375.034	21.73		338.99			00	HG CONTACTED POINTER PREMATURELY
19800911						2	653.930	375.040	21.82		339.01			00	HG JUMPING TOWARDS POINTER-
19800910						1	801.582	177.738	22.18	0.800				00	PREMATURE CONTACT
19800916	127524	3	SAIR	-0.359	-0.015	1	654.811	375.014	22.07		340.42			00	
19800916						2	654.953	374.996	22.18		340.48			00	
19800915						1	800.021	177.763	21.99	1.000				00	
19800917	127693	3	SAIR	-0.359	-0.015	1	670.004	375.050	21.40		361.54			00	
19800917						2	670.174	375.011	21.63		361.50			00	
19800916						1	797.270	177.768	22.11	1.000				00	
19800917	2408	2	N2	-0.359	-0.015	1	537.518	375.022	22.45		196.85			00	
19800917						2	537.640	374.997	22.69		196.86			00	
19800917						1	800.031	177.744	21.55					00	
19800918	1540	3	N2	-0.359	-0.015	1	684.030	375.024	21.45		380.42			00	LARGE TEMPERATURE DRIFT
19800918						2	684.614	375.050	21.95		380.42			00	
19800917						1	795.695	177.702	22.55					00	
19800923	35316	3	N2	-0.359	-0.015	1	761.642	375.035	22.14		472.32			0F	HG JUMPING TOWARDS POINTER-PREMATURE CONTACT
19800923						2	761.604	374.998	22.16		472.29			0F	TEMPERATURE DROPPING DURING MEASUREMENT
19800923						1	797.620	177.699	21.76					0F	
19800924	35316	4	N2	-0.359	-0.015	1	757.791	375.028	21.41		472.69			00	
19800924						2	758.066	375.003	21.64		472.67			00	
19800923						1	793.624	177.804	22.19					00	
19801023	35316	5	N2	-0.359	-0.015	1	761.570	374.997	22.01		472.79			00	
19801023						2	761.620	374.966	22.06		472.81			00	
19801022						1	797.075	177.716	21.68					00	
19801024	35316	6	N2	-0.359	-0.015	1	759.303	375.002	21.09		472.69			00	
19801024						2	759.533	374.990	21.26		472.70			00	
19801023						1	796.442	177.778	22.03					00	
19801024	71286	1	AIR	-0.359	-0.015	1	618.378	375.011	21.85		296.88	0.32	296.56	00	HG CONTACTED POINTER PREMATURELY
19801024						2	618.724	375.008	22.22		296.91	0.32	296.59	00	HG CONTACTED POINTER PREMATURELY
19801024						3	618.748	374.984	22.28		296.91	0.32	296.59	00	
19801024						1	796.980	177.783	21.18					00	
19801111	35452	1	SAIR	-0.359	-0.015	1	638.979	374.994	22.06		323.65			00	
19801111						2	639.089	374.994	22.15		323.68			00	
19801111						1	795.535	177.740	22.08	0.188				00	
19801112	35452	2	SAIR	-0.359	-0.015	1	640.138	375.006	21.83		323.66			00	
19801112						2	640.106	374.984	21.83		323.64			00	
19801112						1	797.647	177.720	21.60	0.188				00	
19801113	35441	1	SAIR	-0.359	-0.015	1	647.020	374.990	21.18		331.94			00	
19801113						2	647.054	374.968	21.29		331.88			00	
19801112						1	799.911	177.766	21.83	0.402				00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	Mercury Column Data for CO2 & Total Gas Vols.	Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19801113	35441	2	SAIR	-0.359	-0.015	1	646.700	375.005	21.62		331.88			00	
19801113						2	646.746	374.995	21.68		331.87			00	
19801113						1	796.923	177.696	21.25	0.402				00	
19801114	35442	1	SAIR	-0.359	-0.015	1	643.652	374.979	21.34		326.82			00	
19801114						2	643.751	374.958	21.49		326.79			00	
19801113						1	800.923	177.696	21.63	0.600				00	
19801114	35442	2	SAIR	-0.359	-0.015	1	644.441	374.997	21.79		326.83			00	HG CONTACTED POINTER PREMATURELY
19801114						2	644.527	375.014	21.87		326.82			00	HG CONTACTED POINTER PREMATURELY
19801114						1	801.166	177.720	21.39	0.600				00	
19801118	35389	1	SAIR	-0.359	-0.015	1	652.823	374.971	21.97		335.55			00	HG CONTACTED POINTER PREMATURELY
19801118						2	652.796	374.952	22.00		335.50			00	
19801118						1	803.114	177.688	21.16	0.209				00	
19801119	35389	2	SAIR	-0.359	-0.015	1	651.382	374.958	21.20		335.45			00	
19801119						2	651.548	374.944	21.40		335.43			00	
19801118						1	803.698	177.732	21.99	0.209				00	
19801119	35434	1	SAIR	-0.359	-0.015	1	641.177	374.952	21.93		322.80			0F	
19801119						2	641.330	374.978	22.08		322.78			0F	
19801119						1	800.971	177.730	21.30	0.188				0F	
19801120	35434	2	SAIR	-0.359	-0.015	1	643.115	374.990	21.99		323.82			00	HG CONTACTED POINTER PREMATURELY
19801120						2	643.347	374.984	22.25		323.81			00	
19801120						1	803.034	177.714	21.18	0.188				00	
19801121	35434	3	SAIR	-0.359	-0.015	1	647.710	374.984	21.83		323.80			00	
19801121						2	647.772	374.969	21.92		323.78			00	
19801121						1	814.700	177.742	21.38	0.188				00	
19810805	35401	3	AIR	-0.348	-0.058	1	662.572	375.008	21.89		353.02	0.30	352.72	00	
19810805						2	663.032	375.015	22.32		353.03	0.30	352.73	00	
19810804						1	795.238	177.737	22.04					00	
19810806	66556	2	AIR	-0.348	-0.058	1	457.924	375.028	21.61		101.31	0.37	100.94	00	
19810806						2	457.999	375.018	21.79		101.35	0.37	100.98	00	HG CONTACTED POINTER PREMATURELY
19810805						1	796.524	177.794	22.29					00	
19810806	71251	2	AIR	-0.348	-0.058	1	551.957	375.015	22.61		213.48	0.34	213.14	00	
19810806						2	552.054	375.008	22.85		213.43	0.34	213.09	00	
19810806						1	802.663	177.651	21.72					00	
19810807	71286	2	AIR	-0.348	-0.058	1	617.614	375.035	21.70		296.88	0.32	296.56	00	HG CONTACTED POINTER PREMATURELY
19810807						2	617.732	374.981	21.92		296.85	0.32	296.53	00	
19810806						1	798.793	177.680	22.77					00	
19810807	34819	1	AIR	-0.348	-0.058	1	581.128	375.013	22.64		251.95	0.24	251.71	00	
19810807						2	581.248	374.994	22.89		251.90	0.24	251.66	00	
19810807						1	795.073	177.790	21.79					00	
19810812	34819	2	AIR	-0.348	-0.058	1	582.128	374.856	21.66		251.99	0.24	251.75	00	
19810812						2	582.249	374.839	21.83		252.01	0.24	251.77	00	HG CONTACTED POINTER PREMATURELY
19810810						1	800.488	177.621	21.80					00	
19810812	71341	1	AIR	-0.348	-0.058	1	638.848	374.842	22.68		322.72	0.31	322.41	00	
19810812						2	639.002	374.807	22.91		322.69	0.31	322.38	00	
19810812						1	795.170	177.601	21.75					00	
19810813	71341	2	AIR	-0.348	-0.058	1	638.368	374.830	22.03		322.82	0.31	322.51	00	
19810813						2	638.650	374.830	22.32		322.83	0.31	322.52	00	HG CONTACTED POINTER PREMATURELY
19810812						1	797.493	177.486	22.78					00	
19810813	66638	1	AIR	-0.348	-0.058	1	650.530	374.842	23.38		338.45	0.31	338.14	00	
19810813						2	650.712	374.804	23.62		338.43	0.31	338.12	00	
19810813						1	792.013	177.609	22.17					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19810814	66638	2	AIR	-0.348	-0.058	1	652.562	374.844	24.14		338.35	0.31	338.04	00	LARGE TEMPERATURE DRIFT
19810814						2	652.876	374.795	24.54		338.32	0.31	338.01	00	
19810813						1	797.910	177.544	23.50					00	
19810814	66625	1	AIR	-0.348	-0.058	1	659.470	374.807	25.58		344.90	0.29	344.61	00	
19810814						2	659.489	374.800	25.67		344.82	0.29	344.53	00	
19810814						1	800.134	177.536	24.37					00	
19810818	66625	2	AIR	-0.348	-0.058	1	657.711	374.844	21.46		344.96	0.29	344.67	00	
19810817						1	799.382	177.566	21.72					00	
19810818	66696	1	AIR	-0.348	-0.058	1	668.460	374.816	22.06		360.17	0.31	359.86	00	
19810818						2	668.573	374.812	22.20		360.13	0.31	359.82	00	
19810818						1	794.153	177.578	21.53					00	
19810819	66696	2	AIR	-0.348	-0.058	1	670.634	374.816	21.98		360.21	0.31	359.90	00	
19810819						2	670.782	374.808	22.12		360.22	0.31	359.91	00	
19810819						1	798.501	177.574	21.38					00	
19810820	67615	1	AIR	-0.348	-0.058	1	788.144	374.845	21.63		503.38	0.30	503.08	00	
19810820						2	788.372	374.806	21.80		503.40	0.30	503.10	00	
19810819						1	801.306	177.538	22.05					00	
19810820	67615	2	AIR	-0.348	-0.058	1	790.322	374.834	22.46		503.63	0.30	503.33	00	
19810820						2	790.788	374.812	22.80		503.61	0.30	503.31	00	
19810820						1	801.731	177.565	21.72					00	
19810824	71479	1	AIR	-0.348	-0.058	1	746.356	374.816	22.09		453.73	0.30	453.43	00	
19810824						2	746.542	374.808	22.24		453.72	0.30	453.42	00	
19810824						1	797.018	177.574	21.42					00	
19810825	71479	2	AIR	-0.348	-0.058	1	743.325	374.832	21.79		453.69	0.30	453.39	00	LARGE TEMPERATURE DRIFT
19810825						2	743.786	374.802	22.18		453.66	0.30	453.36	00	LARGE TEMPERATURE DRIFT
19810824						1	794.319	177.624	22.16					00	
19810825	71370	1	AIR	-0.348	-0.058	1	704.983	374.830	23.65		406.66	0.31	406.35	00	
19810825						2	705.310	374.830	23.92		406.67	0.31	406.36	00	
19810825						1	789.210	177.605	21.93					00	
19810826	71370	2	AIR	-0.348	-0.058	1	709.620	374.839	24.15		406.75	0.31	406.44	00	HG CONTACTED POINTER PREMATURELY
19810826						2	709.858	374.792	24.41		406.72	0.31	406.41	00	
19810826						1	798.025	177.516	22.63					00	
19810827	71308	1	AIR	-0.348	-0.058	1	680.914	374.842	22.47		376.87	0.32	376.55	00	
19810827						2	681.364	374.804	22.96		376.81	0.32	376.49	00	
19810826						1	796.954	177.583	24.26					00	
19810827	71308	2	AIR	-0.348	-0.058	1	680.876	374.831	24.13		376.77	0.32	376.45	00	
19810827						2	681.176	374.828	24.43		376.74	0.32	376.42	00	
19810827						1	790.005	177.669	22.67					00	HG CONTACTED POINTER PREMATURELY
19810827						2	790.044	177.510	22.77					00	
19820420	18027	1	AIR	-0.368	-0.002	1	649.868	374.950	21.69		335.68	0.06	335.62	00	HG CONTACTED POINTER PREMATURELY
19820420						2	650.000	374.941	21.85		335.66	0.06	335.60	00	HG CONTACTED POINTER PREMATURELY
19820419						1	799.182	177.654	22.24					00	
19820420	18040	1	AIR	-0.368	-0.002	1	648.728	374.995	22.35		335.52	0.06	335.46	00	HG CONTACTED POINTER PREMATURELY
19820420						1	794.325	177.686	21.77					00	
19820421	18067	1	AIR	-0.368	-0.002	1	653.049	374.964	21.46		342.47	0.08	342.39	00	HG CONTACTED POINTER PREMATURELY
19820421						2	653.060	374.931	21.56		342.40	0.08	342.32	00	
19820420						1	794.746	177.722	22.36					00	
19820421	16410	1	AIR	-0.368	-0.002	1	663.741	374.962	22.39		351.06	0.03	351.03	00	
19820421						2	663.802	374.944	22.47		351.06	0.03	351.03	00	
19820421						1	798.924	177.752	21.51					00	
19820423	18042	1	AIR	-0.368	-0.002	1	656.436	374.989	22.89		342.77	0.08	342.69	00	HG CONTACTED POINTER PREMATURELY
19820423						2	656.378	374.944	22.96		342.67	0.08	342.59	00	
19820423						1	797.678	177.666	22.02					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19820423	16417	1	AIR	-0.368	-0.002	1	663.813	374.953	22.86		351.16	0.03	351.13	00	
19820423						2	663.899	374.954	22.93		351.18	0.03	351.15	00	
19820423						1	800.923	177.684	22.91					00	
19821104	39239	1	N2	-0.371	0.044	1	649.005	374.954	23.12		332.46			0F	
19821104						2	649.202	374.955	23.31		332.47			0F	
19821103						1	801.351	177.586	22.86					0F	CO2 UPTAKE IN GAS DELIVERY LINE
19821105	39256	1	N2	-0.371	0.044	1	658.576	374.949	22.85		345.47			00	
19821105						2	658.747	374.926	23.00		345.52			00	
19821105						1	797.665	177.582	22.03					00	
19821108	39272	1	N2	-0.371	0.044	1	671.714	374.929	22.60		360.46			00	
19821108						2	671.767	374.940	22.64		360.46			00	
19821108						1	800.336	177.565	22.15					00	
19821110	39256	2	N2	-0.371	0.044	1	659.630	374.940	21.96		345.68			00	
19821110						2	659.592	374.910	21.99		345.64			00	
19821110						1	800.609	177.563	21.60					00	
19821110	39272	2	N2	-0.371	0.044	1	672.194	374.940	21.89		360.50			00	
19821110						2	672.171	374.910	21.93		360.46			00	
19821110						1	802.583	177.680	21.98					00	
19821111	39239	2	N2	-0.371	0.044	1	647.392	374.968	22.01		332.62			00	HG CONTACTED POINTER PREMATURELY
19821111						2	647.392	374.924	22.07		332.60			00	
19821110						1	797.686	177.596	21.90					00	
19821112	39272	3	N2	-0.371	0.044	1	673.769	374.963	21.59		360.57			00	HG CONTACTED POINTER PREMATURELY
19821112						2	673.936	374.924	21.82		360.52			00	
19821111						1	806.439	177.589	22.03					00	
19821112	39239	3	N2	-0.371	0.044	1	650.564	374.934	22.21		332.70			00	
19821112						2	650.572	374.918	22.30		332.62			00	
19821112						1	803.951	177.622	21.69					00	
19821112	3082	1	AIR	-0.371	0.044	1	637.388	374.916	22.43		316.71	0.30	316.41	00	
19821112						2	637.390	374.946	22.46		316.64	0.30	316.34	00	
19821112						1	804.790	177.658	22.24					00	
19821115	39256	3	N2	-0.371	0.044	1	660.065	374.978	22.35		345.57			00	
19821115						2	660.148	374.948	22.47		345.56			00	
19821115						1	801.205	177.614	21.75					00	
19821115	3082	2	AIR	-0.371	0.044	1	636.084	374.992	22.62		316.57	0.30	316.27	00	
19821115						2	636.046	374.966	22.62		316.55	0.30	316.25	00	
19821115						1	801.727	177.678	22.41					00	
19821116	3074	1	AIR	-0.371	0.044	1	646.108	374.992	22.33		329.41	0.30	329.11	00	
19821116						2	646.157	374.980	22.44		329.35	0.30	329.05	00	
19821115						1	801.696	177.776	22.61					00	
19821116	3074	2	AIR	-0.371	0.044	1	644.962	374.968	22.66		329.38	0.30	329.08	00	
19821116						2	645.022	374.982	22.72		329.36	0.30	329.06	00	
19821116						1	797.767	177.600	22.39					00	
19821117	3071	1	AIR	-0.371	0.044	1	662.768	374.977	22.32		352.70	0.30	352.40	00	
19821117						2	662.940	374.980	22.53		352.65	0.30	352.35	00	
19821116						1	796.430	177.648	22.65					00	
19821117	3071	2	AIR	-0.371	0.044	1	665.538	374.988	22.64		352.74	0.30	352.44	00	
19821117						2	665.514	374.964	22.67		352.71	0.30	352.41	00	
19821117						1	800.914	177.636	22.35					00	
19821118	3091	1	AIR	-0.371	0.044	1	655.198	375.002	22.21		341.93	0.30	341.63	00	
19821118						2	655.611	374.993	22.64		341.92	0.30	341.62	00	
19821117						1	799.231	177.628	22.64					00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	Mercury Column Data for CO2 & Total Gas Vols.	Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19821118	3091	2	AIR	-0.371	0.044	1	656.354	374.992	22.70		341.93	0.30	341.63	00	
19821118						2	656.329	374.972	22.71		341.91	0.30	341.61	00	
19821118						1	799.915	177.634	22.27					00	
19821119	3092	1	AIR	-0.371	0.044	1	675.997	374.990	22.58		366.99	0.30	366.69	00	
19821119						2	676.127	374.978	22.72		366.98	0.30	366.68	00	
19821118						1	799.256	177.636	22.70					00	
19821119	3092	2	AIR	-0.371	0.044	1	677.698	374.982	22.64		366.89	0.30	366.59	00	
19821119						2	677.677	374.974	22.63		366.88	0.30	366.58	00	
19821119						1	802.615	177.653	22.59					00	
19821120	34891	1	AIR	-0.371	0.044	1	620.370	374.996	22.28		298.14	0.24	297.90	00	
19821120						2	620.424	374.964	22.33		298.19	0.24	297.95	00	
19821119						1	801.470	177.606	22.63					00	
19821121	34891	2	AIR	-0.371	0.044	1	620.742	375.002	22.09		298.15	0.24	297.91	00	
19821121						2	620.828	374.967	22.22		298.16	0.24	297.92	00	
19821120						1	802.100	177.670	22.29					00	
19821122	62807	1	AIR	-0.371	0.044	1	654.258	375.012	22.00		338.65	0.29	338.36	00	
19821122						2	654.450	374.944	22.29		338.62	0.29	338.33	00	
19821121						1	802.541	177.660	22.16					00	
19821122	62807	2	AIR	-0.371	0.044	1	654.044	374.995	22.36		338.65	0.29	338.36	00	
19821122						2	654.118	374.974	22.44		338.67	0.29	338.38	00	
19821122						1	801.455	177.678	22.22					00	
19821123	62817	1	AIR	-0.371	0.044	1	675.892	374.989	21.80		365.61	0.28	365.33	00	
19821122						1	802.477	177.645	22.40					00	
19821123	62817	2	AIR	-0.371	0.044	1	676.450	374.966	22.34		365.67	0.28	365.39	00	
19821123						2	676.489	374.952	22.42		365.63	0.28	365.35	00	
19821123						1	801.197	177.636	21.88					00	
19821123	62814	1	AIR	-0.371	0.044	1	726.214	374.988	22.56		425.20	0.31	424.89	00	
19821123						2	726.283	374.953	22.62		425.24	0.31	424.93	00	
19821123						1	803.321	177.656	22.37					00	
19821124	62814	2	AIR	-0.371	0.044	1	722.680	374.996	22.11		425.23	0.31	424.92	00	
19821124						2	722.991	375.006	22.34		425.25	0.31	424.94	00	
19821123						1	798.421	177.644	22.59					00	
19830817	39239	1	N2	-0.389	0.012	1	647.458	374.993	22.65		332.50			00	
19830817						2	647.680	374.963	22.89		332.52			00	HG CONTACTED POINTER PREMATURELY
19830816						1	800.009	177.594	23.45					00	
19830817	39272	1	N2	-0.389	0.012	1	672.139	374.965	23.35		360.33			00	
19830817						2	672.332	374.950	23.55		360.32			00	
19830817						1	801.112	177.612	22.76					00	
19830817	39272	2	N2	-0.389	0.012	1	671.094	374.982	23.94		360.39			00	HG CONTACTED POINTER PREMATURELY
19830818						2	669.457	374.982	22.50		360.24			00	
19830817						1	798.945	177.676	23.40					00	
19830822	39256	1	N2	-0.389	0.012	1	663.374	375.024	22.03		345.62			00	HG CONTACTED POINTER PREMATURELY
19830822						2	663.454	375.000	22.19		345.55			00	
19830822						3	663.839	375.012	22.54		345.56			00	
19830822						1	808.933	177.698	21.69					00	
19830823	39256	2	N2	-0.389	0.012	1	661.814	375.024	22.66		345.70			0F	POOR APPROACH-HG CONTROL LEAKING
19830823						2	661.644	374.980	22.79		345.39			00	
19830823						3	661.804	375.005	22.88		345.44			00	
19830822						1	804.852	177.687	22.10					00	
19830823	71341	1	AIR	-0.389	0.012	1	641.893	375.008	22.90		322.32	0.31	322.01	00	
19830823						2	641.942	374.986	22.98		322.31	0.31	322.00	00	
19830823						1	804.346	177.668	22.75					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19830824	71341	2	AIR	-0.389	0.012	1	640.178	375.016	22.54		322.29	0.31	321.98	00	
19830824						2	640.308	374.988	22.74		322.25	0.31	321.94	00	
19830823						1	801.515	177.655	22.92					00	
19830824	66638	1	AIR	-0.389	0.012	1	655.166	374.990	23.25		338.27	0.31	337.96	00	
19830824						2	655.367	374.987	23.47		338.25	0.31	337.94	00	
19830824						1	803.572	177.642	22.64					00	
19830829	66638	2	AIR	-0.389	0.012	1	654.620	374.993	24.81		338.26	0.31	337.95	00	
19830829						2	654.890	374.974	25.09		338.27	0.31	337.96	00	
19830829						1	801.672	177.636	23.89					00	VACUUM LEAK DURING EXTRACTION
19830830	6078	1	N2	-0.389	0.012	1	630.120	374.992	23.95		310.58			00	TEMPERATURE DROPPING DURING MEASUREMENT
19830830						2	629.926	374.986	23.83		310.48			00	
19830829						1	801.880	177.671	24.94					00	
19830830	6078	2	N2	-0.389	0.012	1	628.416	374.954	23.41		310.51			00	
19830830						2	628.450	374.953	23.46		310.50			00	
19830830						1	796.836	177.672	23.90					00	
19830831	66625	1	AIR	-0.389	0.012	1	657.323	374.986	22.54		344.50	0.29	344.21	00	
19830831						2	657.310	374.965	22.56		344.48	0.29	344.19	00	
19830830						1	800.379	177.676	23.43					00	
19830831	66625	2	AIR	-0.389	0.012	1	658.234	374.984	22.42		344.52	0.29	344.23	00	
19830831						2	658.347	374.977	22.54		344.52	0.29	344.23	00	
19830831						1	800.723	177.678	22.57					00	
19830920	2399	1	N2	-0.389	0.012	1	643.980	374.984	23.01		323.75			00	
19830920						2	644.119	374.976	23.11		323.82			00	
19830920						1	805.522	177.614	22.41					00	
19830921	2399	2	N2	-0.389	0.012	1	642.946	375.010	22.21		323.70			00	
19830921						2	643.110	374.951	22.38		323.77			00	
19830920						1	806.469	177.712	23.05					00	
19830921	66696	1	AIR	-0.389	0.012	1	674.511	375.000	23.14		359.90	0.31	359.59	00	
19830921						2	674.656	374.928	23.31		359.94	0.31	359.63	00	
19830921						1	806.221	177.679	22.30					00	
19830922	66696	2	AIR	-0.389	0.012	1	672.753	374.969	22.52		360.04	0.31	359.73	00	
19830922						2	672.822	374.965	22.65		359.96	0.31	359.65	00	
19830921						1	805.853	177.743	23.22					00	
19830926	39239	2	N2	-0.389	0.012	1	651.204	374.992	22.07		332.49			00	
19830926						2	651.189	374.961	22.11		332.46			00	
19830926						1	806.998	177.712	22.10					00	
19830926	71308	1	AIR	-0.389	0.012	1	687.505	374.980	22.19		376.24	0.32	375.92	00	
19830926						2	687.596	374.956	22.29		376.25	0.32	375.93	00	
19830926						1	806.854	177.756	22.08					00	
19830928	71308	2	AIR	-0.389	0.012	1	687.287	374.990	22.35		376.24	0.32	375.92	00	
19830928						2	687.548	374.954	22.64		376.21	0.32	375.89	00	
19830926						1	806.257	177.708	22.20					00	
19830928	1540	1	N2	-0.389	0.012	1	690.080	374.974	23.12		380.19			00	
19830928						2	690.304	374.948	23.34		380.19			00	
19830928						1	804.416	177.746	22.51					00	
19830929	1540	2	N2	-0.389	0.012	1	687.675	374.956	22.94		380.14			00	
19830929						2	687.984	374.912	23.26		380.14			00	
19830928						1	801.750	177.749	23.24					00	
19830929	71286	1	AIR	-0.389	0.012	1	620.818	374.962	23.99		296.79	0.32	296.47	00	HG CONTACTED POINTER PREMATURELY
19830929						2	620.918	374.932	24.22		296.70	0.32	296.38	00	
19830929						1	802.842	177.742	23.08					00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	Mercury Column Data for CO2 & Total Gas Vols. Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19830930	71286	2	AIR	-0.389	0.012	1 618.518	374.966	22.74		296.78	0.32	296.46	00	
19830930						2 618.704	374.912	22.99		296.80	0.32	296.48	00	
19830929						1 801.911	177.633	24.10					00	
19830930	7366	1	N2	-0.389	0.012	1 601.524	374.933	23.79		276.37			00	
19830930						1 796.230	177.692	22.86					00	
19830930	7366	2	N2	-0.389	0.012	1 603.530	374.944	24.54		276.29			00	
19830930						2 603.598	374.940	24.60		276.32			00	
19830930						1 802.491	177.719	23.88					00	
19831004	71370	1	AIR	-0.389	0.012	1 710.935	374.956	22.35		406.45	0.31	406.14	00	
19831004						2 711.054	374.936	22.52		406.37	0.31	406.06	00	
19831003						1 804.023	177.660	22.31					00	
19831004	71370	2	AIR	-0.389	0.012	1 711.847	374.956	22.65		406.41	0.31	406.10	00	
19831004						2 711.922	374.930	22.73		406.41	0.31	406.10	00	
19831004						1 805.470	177.700	22.45					00	
19831005	35299	1	N2	-0.389	0.012	1 718.144	374.984	22.24		414.71			00	
19831005						2 718.204	374.938	22.35		414.67			00	
19831004						1 805.920	177.708	22.69					00	
19831005	35299	2	N2	-0.389	0.012	1 719.065	374.953	22.50		414.80			00	HG CONTROL LEAKING-POSSIBLE
19831005						2 718.985	374.936	22.58		414.61			00	OVERESTIMATION
19831005						1 806.080	177.745	22.29					00	
19831005	34819	1	AIR	-0.389	0.012	1 584.722	374.966	22.50		251.85	0.24	251.61	00	
19831005						2 584.762	374.960	22.58		251.83	0.24	251.59	00	
19831005						1 807.952	177.669	22.54					00	
19831006	34819	2	AIR	-0.389	0.012	1 583.729	374.976	22.11		251.88	0.24	251.64	00	
19831006						2 583.746	374.934	22.22		251.85	0.24	251.61	00	
19831005						1 805.797	177.738	22.54					00	
19831006	3753	1	N2	-0.389	0.012	1 578.884	374.972	22.71		245.83			00	
19831006						2 579.102	374.944	22.91		245.95			00	HG CONTROL LEAKING-POSSIBLE
19831006						1 804.099	177.670	22.17					00	OVERESTIMATION
19831007	3753	2	N2	-0.389	0.012	1 578.176	374.995	22.34		245.89			00	
19831007						2 578.245	374.950	22.50		245.88			00	
19831006						1 804.016	177.658	22.84					00	
19831007	71479	1	AIR	-0.389	0.012	1 750.369	374.960	22.64		453.24	0.30	452.94	00	
19831007						2 750.516	374.958	22.75		453.25	0.30	452.95	00	
19831007						1 805.064	177.594	22.43					00	
19831020	71479	2	AIR	-0.389	0.012	1 750.416	374.984	22.31		453.39	0.30	453.09	00	
19831020						2 750.565	374.938	22.44		453.42	0.30	453.12	00	
19831020						1 804.646	177.608	21.98					00	
19831021	35316	1	N2	-0.389	0.012	1 764.917	374.978	22.13		472.44			00	HG JUMPING-CONTACTED POINTER PREMATURELY
19831021						2 764.986	374.956	22.27		472.31			00	
19831020						1 804.282	177.847	22.37					00	
19831021	35316	2	N2	-0.389	0.012	1 764.656	374.958	22.34		472.41			00	HG CONTACTED POINTER PREMATURELY
19831021						2 764.553	374.942	22.32		472.34			00	
19831021						1 802.989	177.750	22.20					00	
19831021	71251	1	AIR	-0.389	0.012	1 552.342	374.962	22.16		213.33	0.34	212.99	00	
19831021						2 552.412	374.966	22.21		213.37	0.34	213.03	00	
19831021						1 806.872	177.684	22.33					00	
19831025	71251	2	AIR	-0.389	0.012	1 553.775	375.287	22.09		213.30	0.34	212.96	00	
19831025						2 553.825	375.256	22.13		213.37	0.34	213.03	00	
19831025						1 809.473	178.058	21.47					00	
19831025	2408	1	N2	-0.389	0.012	1 538.004	375.311	22.17		196.71			00	
19831025						2 538.048	375.269	22.28		196.73			00	
19831025						1 803.300	178.130	22.09					00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	Mercury Column Data for CO2 & Total Gas Vols. Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19831026	2408	2	N2	-0.389	0.012	1 518.752	375.324	21.82		196.61			00	
19831026						2 518.804	375.248	21.96		196.68			00	
19831025						1 730.181	178.048	22.22					00	
19831026	67615	1	AIR	-0.389	0.012	1 792.030	375.294	22.40		503.57	0.30	503.27	00	
19831026						2 792.255	375.246	22.59		503.56	0.30	503.26	00	
19831026						1 804.534	178.070	21.87					00	
19831027	67615	2	AIR	-0.389	0.012	1 789.776	375.266	22.01		503.57	0.30	503.27	00	
19831027						2 789.976	375.240	22.22		503.47	0.30	503.17	00	
19831026						1 803.478	178.162	22.47					00	
19831027	2408	3	N2	-0.389	0.012	1 537.170	375.260	22.51		196.69			00	
19831027						2 537.327	375.254	22.82		196.67			00	
19831027						1 799.498	178.046	22.09					00	
19831027	39239	3	N2	-0.389	0.012	1 651.038	375.268	22.86		332.44			00	
19831027						2 651.112	375.250	22.92		332.48			00	
19831027						1 805.703	178.002	22.59					00	
19831031	66556	1	AIR	-0.389	0.012	1 460.006	375.295	22.22		101.31	0.37	100.94	00	
19831031						2 460.012	375.266	22.32		101.32	0.37	100.95	00	
19831031						1 808.456	178.084	22.21					00	
19831101	66556	2	AIR	-0.389	0.012	1 459.606	375.288	22.07		101.27	0.37	100.90	00	
19831101						2 459.604	375.289	22.20		101.22	0.37	100.85	00	
19831031						1 806.237	178.062	22.28					00	
19831108	39239	4	N2	-0.389	0.012	1 652.839	375.325	22.36		332.43			00	
19831108						2 652.926	375.283	22.46		332.47			00	HG CONTACTED POINTER PREMATURELY
19831108						1 809.382	178.141	21.89					00	
19831109	39239	5	N2	-0.389	0.012	1 650.214	375.314	21.71		332.41			00	
19831109						2 650.339	375.284	21.87		332.41			00	
19831108						1 806.000	178.033	22.42					00	
19831109	66625	3	AIR	-0.389	0.012	1 663.180	375.295	22.31		344.62	0.29	344.33	00	
19831109						2 663.216	375.284	22.42		344.55	0.29	344.26	00	
19831109						1 809.619	178.102	21.77					00	
19831110	66625	4	AIR	-0.389	0.012	1 665.740	375.290	22.04		344.63	0.29	344.34	00	
19831110						2 665.920	375.282	22.25		344.59	0.29	344.30	00	
19831109						1 817.272	178.088	22.39					00	
19840109	62807	1	AIR	-0.397	-0.012	1 659.627	375.294	21.36		338.58	0.29	338.29	00	
19840109						2 659.661	375.283	21.43		338.54	0.29	338.25	00	HG CONTACTED POINTER PREMATURELY
19840109						1 814.660	177.938	21.64					00	
19840110	62817	1	AIR	-0.397	-0.012	1 677.375	375.278	21.35		365.44	0.28	365.16	00	
19840110						2 677.490	375.264	21.42		365.51	0.28	365.23	00	
19840109						1 804.347	177.920	21.42					00	
19841030	39256	1	N2	-0.384	0.009	1 657.301	374.996	21.74		345.47			00	
19841030						2 657.459	374.954	21.96		345.44			00	
19841029						1 797.171	177.592	22.00					00	
19841030	11429	1	AIR	-0.384	0.009	1 657.908	374.988	22.36		341.55	0.30	341.25	00	
19841030						2 657.952	374.972	22.45		341.51	0.30	341.21	00	
19841030						1 803.935	177.670	21.85					00	
19841030	11062	1	AIR	-0.384	0.009	1 687.430	374.964	22.64		375.17	0.33	374.84	00	
19841030						2 687.433	374.929	22.71		375.12	0.33	374.79	00	
19841030						1 808.261	177.742	22.41					00	
19841031	11835	1	AIR	-0.384	0.009	1 624.888	374.973	21.20		303.99	0.27	303.72	00	
19841031						2 624.972	374.988	21.33		303.93	0.27	303.66	00	
19841030						1 803.402	177.630	22.69					00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	Mercury Column Data for CO2 & Total Gas Vols. Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19850206	83398	1	AIR	-0.397	-0.005	1 827.697	375.022	22.14		1032.92	0.31	1032.61	00	
19850206						2 827.764	375.010	22.25		1032.69	0.31	1032.38	00	
19850205						1 509.874	177.726	21.81					00	
19850612	11429	1	AIR	-0.340	0.009	1 658.670	375.188	22.60		341.99	0.30	341.69	00	RERUN MEASUREMENT-SAMPLE STORED IN FLAME OFF TUBE
19850612						2 658.737	375.176	22.74		341.91	0.30	341.61	00	RERUN MEASUREMENT-SAMPLE STORED
19841030						1 803.935	177.670	21.85					00	IN FLAME OFF TUBE
19850612	11062	1	AIR	-0.340	0.009	1 688.147	375.192	22.72		375.70	0.33	375.37	00	RERUN MEASUREMENT-SAMPLE STORED IN FLAME OFF TUBE
19850612						2 688.106	375.166	22.75		375.64	0.33	375.31	00	RERUN MEASUREMENT-SAMPLE STORED
19841030						1 808.261	177.742	22.41					00	IN FLAME OFF TUBE
19850612	11835	1	AIR	-0.340	0.009	1 626.626	375.156	22.68		304.32	0.27	304.05	00	RERUN MEASUREMENT-SAMPLE STORED IN FLAME OFF TUBE
19850612						2 626.660	375.164	22.71		304.32	0.27	304.05	00	RERUN MEASUREMENT-SAMPLE STORED
19841030						1 803.402	177.630	22.69					00	IN FLAME OFF TUBE
19850614	8386	1	AIR	-0.340	-0.005	1 653.411	375.155	22.44		342.13	0.30	341.83	00	
19850614						2 653.525	375.148	22.52		342.18	0.30	341.88	00	
19850614						1 793.876	177.826	22.42					00	
19850614	8699	1	AIR	-0.340	-0.005	1 622.488	375.150	22.48		304.54	0.27	304.27	00	
19850614						2 622.643	375.152	22.57		304.63	0.27	304.36	00	
19850614						1 792.742	177.750	22.47					00	
19850617	8433	1	AIR	-0.340	-0.005	1 682.346	375.169	22.64		375.40	0.33	375.07	00	
19850617						2 682.402	375.165	22.69		375.40	0.33	375.07	00	
19850617						1 797.631	177.868	22.51					00	
19850619	39239	1	N2	-0.340	-0.005	1 646.623	375.165	22.61		332.89			00	
19850619						2 646.704	375.162	22.67		332.92			00	
19850619						1 794.981	177.767	22.37					00	
19850620	39272	1	N2	-0.340	-0.005	1 668.286	375.146	22.56		360.83			00	
19850620						2 668.379	375.133	22.59		360.93			00	
19850619						1 793.553	177.832	22.63					00	
19850621	39272	2	N2	-0.340	-0.005	1 667.343	375.161	22.42		360.90			00	
19850621						2 667.466	375.125	22.48		361.02			00	
19850620						1 791.596	177.824	22.57					00	
19850625	39256	1	N2	-0.340	-0.005	1 657.727	375.162	22.64		346.02			00	
19850625						2 657.676	375.156	22.68		345.91			00	
19850625						1 796.749	177.812	22.75					00	
19850626	39256	2	N2	-0.340	-0.005	1 657.174	375.156	22.45		346.02			00	
19850626						2 657.166	375.143	22.44		346.04			00	
19850625						1 795.779	177.820	22.66					00	
19850626	71341	1	AIR	-0.340	-0.005	1 636.603	375.186	22.48		322.71	0.31	322.40	00	
19850626						2 636.602	375.144	22.53		322.70	0.31	322.39	00	
19850626						1 791.245	177.800	22.44					00	
19850626	71341	2	AIR	-0.340	-0.005	1 638.038	375.154	22.68		322.76	0.31	322.45	00	
19850626						2 638.112	375.141	22.76		322.77	0.31	322.46	00	
19850626						1 794.284	177.798	22.50					00	
19850627	66638	1	AIR	-0.340	-0.005	1 649.824	375.156	22.60		338.92	0.31	338.61	00	
19850627						2 649.794	375.132	22.63		338.88	0.31	338.57	00	
19850626						1 791.920	177.796	22.71					00	
19850710	66638	2	AIR	-0.340	-0.005	1 650.590	375.156	22.85		338.91	0.31	338.60	00	
19850710						2 650.656	375.151	22.99		338.83	0.31	338.52	00	
19850709						1 795.257	177.819	23.68					00	
19850710	6078	1	N2	-0.340	-0.005	1 628.619	375.152	23.55		311.18			00	
19850710						2 628.720	375.144	23.69		311.16			00	
19850710						1 793.274	177.732	22.93					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19850711	6078	2	N2	-0.340	-0.005	1	628.620	375.160	22.89		311.17			00	
19850711						2	628.708	375.141	23.01		311.17			00	
19850710						1	796.174	177.724	23.59					00	
19850711	66625	1	AIR	-0.340	-0.005	1	656.086	375.156	23.54		345.27	0.29	344.98	00	
19850711						2	656.180	375.140	23.65		345.27	0.29	344.98	00	
19850711						1	792.844	177.769	22.95					00	
19850712	66625	2	AIR	-0.340	-0.005	1	656.732	375.166	22.95		345.27	0.29	344.98	00	
19860712						2	656.801	375.132	23.05		345.27	0.29	344.98	00	
19850711						1	796.954	177.750	23.60					00	
19850712	2399	1	N2	-0.340	-0.005	1	638.640	375.140	23.33		324.33			00	
19850712						2	638.784	375.142	23.47		324.34			00	
19850712						1	792.376	177.705	23.00					00	
19850729	2399	2	N2	-0.340	-0.005	1	639.194	375.140	23.05		324.17			00	
19850729						2	639.176	375.127	23.09		324.11			00	
19850729						1	794.043	177.742	22.73					00	
19850730	18027	1	AIR	-0.340	-0.005	1	647.850	375.167	22.74		336.34	0.06	336.28	00	
19850730						2	647.900	375.144	22.85		336.30	0.06	336.24	00	
19850729						1	792.599	177.766	23.07					00	
19850730	18067	1	AIR	-0.340	-0.005	1	654.797	375.152	23.18		342.95	0.08	342.87	00	
19850730						2	654.848	375.145	23.28		342.90	0.08	342.82	00	
19850730						1	794.545	177.758	22.77					00	
19850731	16417	1	AIR	-0.340	-0.005	1	660.863	375.118	23.16		351.51	0.03	351.48	00	
19850731						2	661.054	375.125	23.34		351.51	0.03	351.48	00	
19850730						1	793.782	177.808	23.22					00	
19850731	39239	2	N2	-0.340	-0.005	1	647.659	375.124	23.35		333.08			00	
19850731						2	647.704	375.112	23.43		333.05			00	
19850731						1	797.378	177.735	23.26					00	
19850801	66696	1	AIR	-0.340	-0.005	1	667.961	375.138	23.03		360.63	0.31	360.32	00	
19850801						2	667.899	375.106	23.05		360.56	0.31	360.25	00	
19850731						1	793.874	177.896	23.39					00	
19850801	66696	2	AIR	-0.340	-0.005	1	668.727	375.116	23.04		360.71	0.31	360.40	00	
19850801						2	668.754	375.116	23.06		360.72	0.31	360.41	00	
19850801						1	794.438	177.734	23.04					00	
19850805	71308	1	AIR	-0.340	-0.005	1	683.148	375.159	22.85		376.29	0.32	375.97	0F	
19850805						2	683.209	375.122	22.93		376.30	0.32	375.98	0F	
19850805						1	797.427	177.868	22.55					0F	PROBABLE LOSS OF CO2 DURING EXTRACTION
19850806	71308	2	AIR	-0.340	-0.005	1	682.976	375.155	22.48		376.83	0.32	376.51	00	
19850806						2	683.057	375.138	22.58		376.81	0.32	376.49	00	
19850805						1	797.713	177.832	22.88					00	
19850806	1540	1	N2	-0.340	-0.005	1	686.373	375.158	22.88		380.87			00	
19850806						2	686.488	375.133	22.96		380.93			00	
19850806						1	796.210	177.768	22.51					00	
19850807	1540	2	N2	-0.340	-0.005	1	685.572	375.157	22.82		380.98			00	
19850807						2	685.514	375.122	22.84		380.93			00	
19850806						1	795.364	177.669	22.92					00	
19850807	71286	1	AIR	-0.340	-0.005	1	617.361	375.127	22.91		297.24	0.32	296.92	00	
19850807						2	617.392	375.102	23.02		297.19	0.32	296.87	00	
19850807						1	794.780	177.880	22.83					00	
19850807	71286	2	AIR	-0.340	-0.005	1	618.912	375.120	23.28		297.21	0.32	296.89	00	
19850807						2	619.151	375.128	23.55		297.21	0.32	296.89	00	
19850807						1	798.142	177.749	22.96					00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)		Mercury Column Data for CO2 & Total Gas Vols. Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19850812	71308	3	AIR	-0.340	-0.005	1	683.071	375.130	22.49		376.53	0.32	376.21	0F	
19850812						2	683.208	375.115	22.56		376.62	0.32	376.30	0F	
19850812						1	797.028	177.835	22.25					0F	PROBABLE LOSS OF CO2 DURING EXTRACTION
19850813	7366	1	N2	-0.340	-0.005	1	602.550	375.122	22.73		276.89			00	
19850813						2	602.508	375.102	22.76		276.84			00	
19850812						1	799.158	177.755	22.52					00	
19850813	7366	2	N2	-0.340	-0.005	1	600.960	375.136	22.65		276.82			00	
19850813						2	600.936	375.102	22.68		276.81			00	
19850813						1	795.570	177.748	22.74					00	
19850813	71370	1	AIR	-0.340	-0.005	1	709.354	375.104	23.07		407.06	0.31	406.75	00	
19850813						2	709.488	375.096	23.18		407.07	0.31	406.76	00	
19850813						1	799.190	177.696	22.67					00	
19850814	71370	2	AIR	-0.340	-0.005	1	708.851	375.101	24.14		407.12	0.31	406.81	00	
19850814						2	708.984	375.110	24.26		407.10	0.31	406.79	00	
19850813						1	796.857	177.772	23.12					00	
19850814	35299	1	N2	-0.340	-0.005	1	712.963	375.101	23.76		415.24			00	HG CONTACTED POINTER PREMATURELY
19850814						2	713.092	375.104	23.80		415.34			00	
19850814						1	795.598	177.800	24.22					00	
19850814	35299	2	N2	-0.340	-0.005	1	713.126	375.086	23.52		415.28			00	
19850814						2	713.194	375.085	23.57		415.29			00	
19850814						1	795.372	177.764	23.77					00	
19850819	71308	4	AIR	-0.340	-0.005	1	683.032	374.910	22.43		376.89	0.32	376.57	00	
19850819						2	683.174	374.896	22.56		376.90	0.32	376.58	00	
19850819						1	796.525	177.595	22.17					00	
19850820	39239	3	N2	-0.340	-0.005	1	647.224	374.914	22.82		333.05			00	
19850820						2	647.241	374.894	22.87		333.03			00	
19850819						1	796.288	177.587	22.51					00	
19850820	34819	1	AIR	-0.340	-0.005	1	580.944	374.916	22.80		252.30	0.24	252.06	00	
19850820						2	580.941	374.874	22.83		252.32	0.24	252.08	00	
19850820						1	795.682	177.574	22.84					00	
19850820	34819	2	AIR	-0.340	-0.005	1	581.280	374.900	22.66		252.17	0.24	251.93	00	
19850821						2	581.306	374.908	22.76		252.11	0.24	251.87	00	
19850820						1	797.353	177.637	22.81					00	
19850821	3753	1	N2	-0.340	-0.005	1	575.920	374.916	22.77		246.20			00	HG CONTACTED POINTER PREMATURELY
19850821						2	576.031	374.910	22.80		246.32			00	
19850820						1	795.349	177.601	22.70					00	
19850821	3753	2	N2	-0.340	-0.005	1	575.822	374.888	22.77		246.32			00	
19850821						2	575.882	374.914	22.83		246.31			00	
19850821						1	795.029	177.598	22.79					00	
19850827	71479	1	AIR	-0.340	-0.005	1	745.836	374.962	23.26		454.14	0.30	453.84	00	
19850827						2	745.824	374.938	23.32		454.05	0.30	453.75	00	
19850826						1	796.446	177.595	23.10					00	
19850827	71479	2	AIR	-0.340	-0.005	1	743.680	374.957	23.24		453.95	0.30	453.65	00	
19850827						2	743.799	374.922	23.32		454.01	0.30	453.71	00	
19850827						1	793.554	177.616	23.28					00	
19850828	35316	1	N2	-0.340	-0.005	1	761.173	374.949	23.20		473.22			00	
19850828						2	761.212	374.910	23.27		473.19			00	
19850827						1	796.800	177.664	23.27					00	
19850828	35316	2	N2	-0.340	-0.005	1	758.595	374.938	23.25		473.14			00	
19850828						2	758.534	374.912	23.32		472.98			00	HG CONTACTED POINTER PREMATURELY
19850828						1	792.540	177.660	23.22					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19850829	71251	1	AIR	-0.340	-0.005	1	549.080	374.918	22.62		213.68	0.34	213.34	00	
19850829						2	549.135	374.894	22.76		213.67	0.34	213.33	00	
19850828						1	795.561	177.584	23.28					00	
19850829	71251	2	AIR	-0.340	-0.005	1	549.080	374.928	23.83		213.58	0.34	213.24	00	
19850829						2	549.238	374.918	24.09		213.59	0.34	213.25	00	
19850829						1	791.880	177.610	22.69					00	
19850903	2408	1	N2	-0.340	-0.005	1	535.486	374.969	22.30		196.97			00	
19850903						2	535.498	374.944	22.37		196.97			00	
19850903						1	793.650	177.630	22.16					00	
19850904	2408	2	N2	-0.340	-0.005	1	535.340	374.942	22.52		196.98			00	
19850904						2	535.272	374.916	22.55		196.91			00	
19850903						1	793.029	177.623	22.32					00	
19850904	67615	1	AIR	-0.340	-0.005	1	784.788	374.905	22.72		504.25	0.30	503.95	00	
19850904						2	784.913	374.896	22.75		504.36	0.30	504.06	00	
19850904						1	793.725	177.598	22.53					00	
19850905	67615	2	AIR	-0.340	-0.005	1	785.737	374.924	22.59		504.45	0.30	504.15	00	
19850905						2	785.767	374.903	22.62		504.46	0.30	504.16	00	
19850904						1	795.577	177.568	22.73					00	
19850905	66556	1	AIR	-0.340	-0.005	1	457.691	374.906	22.45		101.37	0.37	101.00	00	
19850905						2	457.696	374.904	22.48		101.36	0.37	100.99	00	
19850905						1	793.955	177.576	22.60					00	
19850906	66556	2	AIR	-0.340	-0.005	1	457.749	374.916	22.11		101.33	0.37	100.96	00	HG CONTACTED POINTER PREMATURELY
19850906						2	457.736	374.889	22.16		101.33	0.37	100.96	00	
19850905						1	795.009	177.613	22.46					00	
19850906	39239	4	N2	-0.340	-0.005	1	647.118	374.898	22.18		333.00			00	
19850906						2	647.154	374.892	22.24		332.98			00	
19850906						1	796.725	177.578	22.12					00	
19850910	83230	1	AIR	-0.340	-0.005	1	533.387	374.897	22.48		194.10	0.30	193.80	00	
19850910						2	533.408	374.909	22.52		194.08	0.30	193.78	00	
19850910						1	794.960	177.599	22.43					00	
19850911	83230	2	AIR	-0.340	-0.005	1	533.017	374.889	22.19		194.13	0.30	193.83	00	
19850911						2	533.042	374.894	22.22		194.13	0.30	193.83	00	
19850910						1	794.236	177.590	22.50					00	
19850911	83369	1	AIR	-0.340	-0.005	1	596.611	374.902	22.38		272.28	0.29	271.99	00	
19850911						2	596.631	374.826	22.45		272.33	0.29	272.04	00	
19850911						1	793.595	177.602	22.20					00	
19850911	83369	2	AIR	-0.340	-0.005	1	597.644	374.878	22.53		272.32	0.29	272.03	00	
19850911						2	597.703	374.865	22.59		272.35	0.29	272.06	00	
19850911						1	796.584	177.598	22.41					00	
19850916	83377	1	AIR	-0.340	-0.005	1	641.044	374.912	22.12		324.97	0.30	324.67	00	
19850916						2	641.082	374.892	22.20		324.95	0.30	324.65	00	
19850916						1	796.740	177.614	21.60					00	
19850918	83377	2	AIR	-0.340	-0.005	1	640.720	374.930	22.35		324.88	0.30	324.58	00	
19850918						2	640.787	374.868	22.38		325.00	0.30	324.70	00	
19850916						1	796.906	177.696	22.15					00	
19850919	83378	1	AIR	-0.340	-0.005	1	659.852	374.894	22.26		350.76	0.30	350.46	00	
19850919						2	659.906	374.874	22.30		350.80	0.30	350.50	00	
19850918						1	793.302	177.632	22.36					00	
19850920	83378	2	AIR	-0.340	-0.005	1	661.660	374.903	22.39		350.87	0.30	350.57	00	
19850920						2	661.638	374.877	22.41		350.85	0.30	350.55	00	
19850919						1	796.535	177.628	22.28					00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	Mercury Column Data for CO2 & Total Gas Vols. Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19850920	83379	1	AIR	-0.340	-0.005	1 680.138	374.900	22.33		374.33	0.31	374.02	00	
19850920						2 680.176	374.844	22.37		374.39	0.31	374.08	00	
19850920						1 795.603	177.570	22.40					00	
19850920	83379	2	AIR	-0.340	-0.005	1 681.092	374.886	22.41		374.32	0.31	374.01	00	
19850920						2 681.188	374.899	22.45		374.37	0.31	374.06	00	
19850920						1 797.256	177.556	22.34					00	
19850925	83382	1	AIR	-0.340	-0.005	1 701.712	374.934	22.26		398.64	0.31	398.33	00	
19850925						2 701.682	374.892	22.30		398.60	0.31	398.29	00	
19850924						1 799.467	177.590	22.53					00	
19850925	83382	2	AIR	-0.340	-0.005	1 698.930	374.900	22.35		398.48	0.31	398.17	00	
19850925						2 699.086	374.916	22.42		398.55	0.31	398.24	00	
19850925						1 793.728	177.598	22.28					00	
19850925	83389	1	AIR	-0.340	-0.005	1 792.356	374.907	22.75		512.33	0.31	512.02	00	HG CONTACTED POINTER PREMATURELY
19850925						2 792.525	374.889	22.86		512.36	0.31	512.05	00	
19850925						1 794.707	177.479	22.37					00	
19850926	83389	2	AIR	-0.340	-0.005	1 791.494	374.917	22.30		512.45	0.31	512.14	00	
19850926						2 791.569	374.894	22.36		512.46	0.31	512.15	00	
19850925						1 795.295	177.562	22.80					00	
19850926	11835	2	AIR	-0.340	-0.005	1 623.843	374.902	22.44		304.49	0.27	304.22	00	
19850926						2 623.776	374.896	22.48		304.37	0.27	304.10	00	
19850926						1 796.441	177.568	22.33					00	
19850927	11429	2	AIR	-0.340	-0.005	1 653.850	374.908	22.42		342.08	0.30	341.78	00	
19850927						2 653.825	374.914	22.46		342.00	0.30	341.70	00	HG CONTACTED POINTER PREMATURELY
19850926						1 795.355	177.567	22.46					00	
19850927	11062	2	AIR	-0.340	-0.005	1 680.404	374.910	22.25		375.87	0.33	375.54	00	
19850927						2 680.472	374.888	22.35		375.84	0.33	375.51	00	
19850927						1 793.845	177.553	22.44					00	
19851212	18067	2	AIR	-0.340	-0.005	1 654.261	374.776	20.70		343.09	0.08	343.01	00	HG CONTACTED POINTER PREMATURELY
19851212						2 654.505	374.756	20.85		343.23	0.08	343.15	00	
19851212						1 792.926	177.489	19.95					00	
19851212	16417	2	AIR	-0.340	-0.005	1 648.712	374.790	21.36		351.57	0.03	351.54	00	HG CONTACTED POINTER PREMATURELY
19851212						2 648.928	374.770	21.45		351.76	0.03	351.73	00	
19851212						1 766.487	177.464	20.80					00	
19851213	18027	2	AIR	-0.340	-0.005	1 646.053	374.800	21.16		336.35	0.06	336.29	00	
19851213						2 646.204	374.798	21.30		336.37	0.06	336.31	00	
19851212						1 788.886	177.502	21.39					00	
19851217	18067	3	AIR	-0.340	-0.005	1 655.725	374.810	22.15		343.06	0.08	342.98	00	RERUN M'MENT ON F.O.T. SAMPLE-HG CONTACTED POINTER
19851217						2 655.751	374.791	22.24		343.01	0.08	342.93	00	RERUN M'MENT-SAMPLE NO. 2 STORED IN FLAME OFF TUBE
19851217						3 655.856	374.801	22.29		343.06	0.08	342.98	00	RERUN M'MENT ON F.O.T. SAMPLE - FANS OFF DURING MEAS.
19851217						4 655.787	374.778	22.29		343.00	0.08	342.92	00	RERUN M'MENT-SAMPLE NO. 2 STORED
19851212						1 792.926	177.489	19.95					00	IN FLAME OFF TUBE
19851218	16417	3	AIR	-0.340	-0.005	1 648.894	374.792	21.57		351.53	0.03	351.50	00	RERUN M'MENT-SAMPLE NO. 2 STORED IN FLAME OFF TUBE
19851218						2 648.944	374.792	21.57		351.60	0.03	351.57	00	RERUN M'MENT-SAMPLE NO. 2 STORED
19851212						1 766.487	177.464	20.80					00	IN FLAME OFF TUBE
19851218	18027	3	AIR	-0.340	-0.005	1 646.572	374.838	21.75		336.23	0.06	336.17	00	RERUN M'MENT-SAMPLE NO. 2 STORED IN FLAME OFF TUBE
19851218						2 646.525	374.810	21.75		336.21	0.06	336.15	00	RERUN M'MENT-SAMPLE NO. 2 STORED
19851212						1 788.886	177.502	21.39					00	IN FLAME OFF TUBE
19860211	83398	1	AIR	-0.340	-0.005	1 824.260	374.901	21.06		1033.35	0.31	1033.04	00	
19860211						2 824.394	374.872	21.17		1033.31	0.31	1033.00	00	
19860210						1 507.544	177.556	21.04					00	
19860211	83391	1	AIR	-0.340	-0.005	1 784.422	374.908	21.50		614.90	0.30	614.60	00	
19860211						2 784.696	374.881	21.56		615.22	0.30	614.92	00	
19860211						1 682.015	177.536	21.11					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19860212	83391	2	AIR	-0.340	-0.005	1	782.222	374.880	21.86		615.29	0.30	614.99	00	
19860212						2	782.220	374.896	21.90		615.17	0.30	614.87	00	
19860211						1	679.084	177.504	21.53					00	
19860213	83392	1	AIR	-0.340	-0.005	1	779.308	374.915	21.74		837.25	0.30	836.95	00	
19860213						2	779.334	374.894	21.79		837.19	0.30	836.89	00	
19860212						1	544.101	177.527	21.88					00	
19860214	83392	2	AIR	-0.340	-0.005	1	659.041	374.904	22.04		589.44	0.30	589.14	0F	REJECT- LOST CO2 DURING EXTRACTION
19860213						1	542.435	177.560	21.77					0F	
19860219	83392	3	AIR	-0.340	-0.005	1	787.850	374.945	22.02		837.33	0.30	837.03	00	
19860219						2	788.014	374.953	22.07		837.50	0.30	837.20	00	
19860219						1	551.593	177.652	21.91					00	
19860220	83412	1	AIR	-0.340	-0.005	1	781.596	374.966	21.47		1273.84	0.31	1273.53	00	
19860220						2	781.674	374.945	21.57		1273.69	0.31	1273.38	00	
19860219						1	420.318	177.646	22.05					00	
19860220	83412	2	AIR	-0.340	-0.005	1	771.553	374.955	21.64		1273.48	0.31	1273.17	00	
19860220						2	771.654	374.956	21.68		1273.61	0.31	1273.30	00	
19860220						1	413.771	177.632	21.52					00	
19860221	83398	2	AIR	-0.340	-0.005	1	784.594	374.788	21.71		1033.38	0.31	1033.07	00	
19860221						2	784.638	374.780	21.75		1033.36	0.31	1033.05	00	
19860220						1	478.399	177.604	21.66					00	
19860221	2405	1	AIR	-0.340	-0.005	1	788.676	374.776	21.72		1263.56	0.30	1263.26	00	
19860221						2	788.900	374.775	21.83		1263.75	0.30	1263.45	00	
19860221						1	426.030	177.503	21.73					00	
19870331	39256	1	N2	-0.340	-0.005	1	650.692	374.848	21.91		345.95			00	HG CONTACTED POINTER PREMATURELY
19870331						2	650.680	374.800	21.94		345.96			00	
19870331						1	780.177	177.456	21.29					00	
19870401	4826	1	AIR	-0.340	-0.005	1	639.483	374.860	21.87		330.97	0.00	330.97	00	
19870402						2	639.308	374.828	21.54		331.18	0.00	331.18	00	
19870331						1	783.194	177.510	21.92					00	
19870402	4826	2	AIR	-0.340	-0.005	1	639.510	374.822	21.96		331.00	0.00	331.00	00	
19870402						2	639.668	374.798	22.07		331.10	0.00	331.10	00	
19870401						1	783.023	177.469	21.91					00	
19870402	4827	1	AIR	-0.340	-0.005	1	647.514	374.826	22.13		339.34	0.00	339.34	00	
19870402						2	647.640	374.792	22.18		339.48	0.00	339.48	00	
19870402						1	785.881	177.466	22.00					00	
19870403	4827	2	AIR	-0.340	-0.005	1	650.386	374.823	21.59		339.48	0.00	339.48	00	
19870403						2	650.452	374.800	21.65		339.51	0.00	339.51	00	
19870402						1	793.611	177.488	22.15					00	
19870408	4828	1	AIR	-0.340	-0.005	1	658.131	374.828	21.86		351.61	0.00	351.61	00	
19870408						2	658.262	374.822	21.99		351.61	0.00	351.61	00	
19870408						1	787.409	177.532	21.62					00	
19870408	4828	2	AIR	-0.340	-0.005	1	657.514	374.836	21.94		351.62	0.00	351.62	00	
19870408						2	657.510	374.807	21.98		351.60	0.00	351.60	00	
19870408						1	786.437	177.512	21.89					00	
19870409	4829	1	AIR	-0.340	-0.005	1	666.356	374.830	21.24		366.34	0.00	366.34	00	
19870409						2	666.540	374.795	21.41		366.39	0.00	366.39	00	
19870408						1	781.944	177.490	21.95					00	
19870409	4829	2	AIR	-0.340	-0.005	1	672.363	374.843	21.84		366.43	0.00	366.43	00	
19870409						2	672.502	374.833	21.93		366.49	0.00	366.49	00	
19870409						1	791.502	177.490	21.30					00	
19870527	39256	2	N2	-0.340	-0.005	1	653.146	374.874	21.35		345.73			00	HG CONTACTED POINTER PREMATURELY
19870527						2	653.309	374.822	21.49		345.82			00	
19870526						1	788.201	177.515	21.76					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19870527	34891	1	AIR	-0.340	-0.005	1	614.801	374.848	22.01		298.52	0.24	298.28	00	
19870527						2	614.850	374.816	22.14		298.48	0.24	298.24	00	
19870527						1	784.818	177.534	21.39					00	
19870528	34891	2	AIR	-0.340	-0.005	1	614.069	374.844	21.70		298.47	0.24	298.23	00	
19870528						2	614.126	374.836	21.79		298.45	0.24	298.21	00	
19870527						1	785.238	177.570	22.06					00	
19870528	62814	1	AIR	-0.340	-0.005	1	717.223	374.868	21.95		425.23	0.31	424.92	00	HG CONTACTED POINTER PREMATURELY
19870528						2	717.342	374.847	22.05		425.25	0.31	424.94	00	-FAN VIBRATION TROUBLE
19870528						1	787.334	177.491	21.74					00	
19870529	62814	2	AIR	-0.340	-0.005	1	717.222	374.850	22.02		425.22	0.31	424.91	00	
19870529						2	717.325	374.856	22.09		425.24	0.31	424.93	00	
19870528						1	787.829	177.578	21.98					00	
19870602	62807	1	AIR	-0.340	-0.005	1	646.668	374.866	22.11		339.01	0.29	338.72	00	
19870602						2	646.712	374.844	22.17		339.02	0.29	338.73	00	
19870602						1	784.429	177.538	21.92					00	
19870602	62807	2	AIR	-0.340	-0.005	1	647.278	374.870	22.11		338.93	0.29	338.64	00	
19870602						2	647.359	374.828	22.17		339.02	0.29	338.73	00	
19870602						1	786.350	177.511	22.13					00	
19870603	62817	1	AIR	-0.340	-0.005	1	669.158	374.866	21.67		365.82	0.28	365.54	00	
19870603						2	669.264	374.830	21.79		365.84	0.28	365.56	00	
19870602						1	788.066	177.566	22.12					00	
19870603	62817	2	AIR	-0.340	-0.005	1	669.539	374.862	21.99		365.89	0.28	365.61	00	
19870603						2	669.680	374.852	22.09		365.95	0.28	365.67	00	
19870603						1	787.117	177.512	21.72					00	
19870604	39256	3	N2	-0.340	-0.005	1	654.420	374.868	21.86		345.90			00	
19870604						2	654.596	374.883	22.04		345.87			00	
19870603						1	790.170	177.518	22.02					00	
19880308	11094	1	N2	-0.340	0.052	1	638.540	374.840	21.48		327.39			00	
19880308						2	638.642	374.843	21.56		327.42			00	
19880308						1	786.953	177.394	21.25					00	
19880308	7358	1	N2	-0.340	0.052	1	662.811	374.845	21.64		355.70			00	HG CONTACTED POINTER PREMATURELY
19880308						2	662.814	374.820	21.68		355.68			00	
19880308						1	790.451	177.360	21.52					00	
19880309	7358	2	N2	-0.340	0.052	1	663.284	374.842	21.45		355.66			00	
19880309						2	663.326	374.825	21.49		355.68			00	
19880308						1	792.283	177.382	21.66					00	
19880309	11094	2	N2	-0.340	0.052	1	640.392	374.868	21.41		327.40			00	HG CONTACTED POINTER PREMATURELY
19880309						2	640.363	374.840	21.48		327.31			00	
19880309						1	791.850	177.456	21.46					00	
19880310	75593	1	N2	-0.340	0.052	1	640.120	374.875	21.06		328.24			00	
19880310						2	640.150	374.837	21.14		328.23			00	
19880309						1	790.337	177.459	21.43					00	
19880310	75593	2	N2	-0.340	0.052	1	639.312	374.848	21.13		328.23			00	
19880310						2	639.380	374.856	21.18		328.25			00	
19880310						1	787.640	177.478	21.08					00	
19880315	39361	1	N2	-0.340	0.052	1	661.099	374.850	21.30		355.20			00	
19880315						2	661.238	374.804	21.43		355.26			00	
19880314						1	787.754	177.514	21.16					00	
19880315	39361	2	N2	-0.340	0.052	1	660.926	374.820	21.35		355.11			00	
19880315						2	660.964	374.830	21.41		355.07			00	
19880315						1	787.896	177.398	21.40					00	

				Meniscus Corr.			Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19880726	2401	1	AIR	-0.340	0.052	1	779.872	374.926	21.82		510.55	0.30	510.25	00	
19880726						2	779.968	374.890	21.89		510.59	0.30	510.29	00	
19880726						1	779.178	177.472	21.90					00	
19880726	64329	1	AIR	-0.340	0.052	1	761.176	374.889	21.88		685.04	0.30	684.74	00	
19880726						2	761.223	374.876	21.90		685.10	0.30	684.80	00	
19880726						1	605.048	177.490	21.85					00	
19880727	34790	1	AIR	-0.340	0.052	1	762.641	374.907	21.90		870.10	0.30	869.80	00	
19880727						2	762.920	374.880	22.06		870.29	0.30	869.99	00	
19880726						1	515.543	177.616	21.90					00	
19890131	11094	1	N2	-0.340	-0.012	1	637.606	374.754	20.55		327.38			00	
19890131						2	637.824	374.774	20.67		327.49			00	
19890130						1	786.272	177.388	20.87					00	
19890131	11094	2	N2	-0.340	-0.012	1	637.912	374.788	21.10		327.49			00	
19890131						2	638.002	374.750	21.18		327.56			00	
19890131						1	784.913	177.422	20.59					00	
19890201	6052	1	N2	-0.340	-0.012	1	661.483	374.788	20.94		357.08			00	HG CONTACTED POINTER PREMATURELY
19890201						2	661.582	374.758	20.99		357.18			00	
19890131						1	786.174	177.417	21.13					00	
19890206	6052	2	N2	-0.340	-0.012	1	664.953	374.752	20.49		356.89			00	HG CONTACTED POINTER PREMATURELY
19890206						2	665.170	374.721	20.56		357.11			00	
19890206						1	792.789	177.363	20.17					00	
19890206	11092	1	N2	-0.340	-0.012	1	640.633	374.744	20.54		330.16			00	
19890206						2	640.733	374.714	20.59		330.26			00	
19890206						1	787.734	177.725	20.52					00	
19890207	11092	2	N2	-0.340	-0.012	1	641.340	374.768	20.74		330.04			00	
19890207						2	641.395	374.740	20.83		330.04			00	
19890206						1	788.864	177.420	20.56					00	
19890710	75593	1	N2	-0.340	-0.012	1	638.154	375.086	21.82		328.66			00	
19890710						2	638.188	375.097	21.91		328.58			00	
19890710						1	783.933	177.796	21.74					00	
19890711	75593	2	N2	-0.340	-0.012	1	638.398	375.128	21.27		328.57			00	
19890711						2	638.481	375.084	21.42		328.55			00	HG CONTACTED POINTER PREMATURELY
19890710						1	786.001	177.779	21.86					00	
19890711	39361	1	N2	-0.340	-0.012	1	660.428	375.040	21.78		355.53			00	
19890711						2	660.484	375.049	21.89		355.45			00	
19890711						1	784.925	177.756	21.31					00	
19890712	39361	2	N2	-0.340	-0.012	1	659.730	375.084	21.66		355.46			00	
19890712						2	659.866	375.098	21.83		355.39			00	
19890711						1	784.795	177.694	21.83					00	
19900320	6052	1	N2	-0.313	-0.006	1	661.795	375.115	22.12		357.23			00	
19900320						2	661.878	375.111	22.21		357.22			00	
19900319						1	786.250	177.870	22.25					00	
19900320	6052	2	N2	-0.313	-0.006	1	662.256	375.140	22.05		357.22			00	
19900320						2	662.344	375.108	22.13		357.27			00	
19900320						1	787.136	177.862	22.16					00	
19900321	11081	1	N2	-0.313	-0.006	1	661.754	375.157	21.79		358.17			00	
19900321						2	661.890	375.118	21.97		358.16			00	
19900320						1	784.870	177.912	22.08					00	
19900321	11081	2	N2	-0.313	-0.006	1	661.782	375.134	21.96		358.11			00	
19900321						2	661.986	375.107	22.14		358.17			00	
19900321						1	784.121	177.801	21.86					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19900322	39239	1	N2	-0.313	-0.006	1	643.557	375.162	21.89		333.02			00	
19900322						2	643.653	375.137	21.98		333.06			00	
19900321						1	788.740	177.916	22.00					00	
19900322	39272	1	N2	-0.313	-0.006	1	664.877	375.156	21.86		360.62			0F	
19900322						2	665.128	375.140	21.95		360.84			00	
19900322						1	786.819	177.878	21.93					00	
19900322	39272	2	N2	-0.313	-0.006	1	666.198	375.154	21.89		360.83			00	
19900322						2	666.300	375.145	22.00		360.83			00	
19900322						1	789.123	177.909	21.89					00	
19900327	39256	1	N2	-0.313	-0.006	1	652.988	375.212	21.74		345.93			00	HG CONTACTED POINTER PREMATURELY
19900327						2	653.120	375.167	21.87		345.99			00	
19900327						1	785.736	177.878	21.49					00	
19900328	39256	2	N2	-0.313	-0.006	1	654.457	375.188	22.07		345.99			00	
19900328						2	654.468	375.152	22.18		345.91			00	
19900327						1	788.938	177.961	21.80					00	
19900328	71341	1	AIR	-0.313	-0.006	1	632.979	375.178	21.91		322.58	0.31	322.27	00	
19900328						2	633.116	375.164	22.04		322.62	0.31	322.31	00	
19900328						1	783.689	177.891	22.13					00	
19900328	71341	2	AIR	-0.313	-0.006	1	632.438	375.190	21.84		322.59	0.31	322.28	00	
19900328						2	632.553	375.189	21.90		322.67	0.31	322.36	00	
19900328						1	782.181	177.962	21.94					00	
19900402	11092	1	N2	-0.313	-0.006	1	640.936	375.177	21.90		330.23			00	
19900402						2	641.036	375.168	22.00		330.25			00	
19900402						1	786.978	177.858	21.65					00	
19900403	11092	2	N2	-0.313	-0.006	1	641.015	375.236	21.61		330.30			00	
19900403						2	641.176	375.217	21.79		330.31			00	
19900402						1	788.229	177.918	21.94					00	
19900403	73292	1	N2	-0.313	-0.006	1	640.871	375.230	21.85		330.55			00	HG CONTACTED POINTER PREMATURELY
19900403						2	641.028	375.225	21.98		330.60			00	
19900403						1	786.391	177.936	21.69					00	
19900404	73292	2	N2	-0.313	-0.006	1	640.124	375.270	22.06		330.57			00	
19900404						2	640.174	375.274	22.16		330.51			00	
19900403						1	784.560	177.952	21.90					00	
19900409	66638	1	AIR	-0.313	-0.006	1	649.611	375.288	21.78		338.85	0.31	338.54	00	
19900409						2	649.807	375.285	21.94		338.90	0.31	338.59	00	
19900409						1	790.665	178.024	21.48					00	
19900410	66638	2	AIR	-0.313	-0.006	1	648.888	375.315	21.82		338.90	0.31	338.59	00	
19900410						2	649.095	375.280	22.01		338.97	0.31	338.66	00	
19900409						1	789.472	177.902	21.84					00	
19900410	6078	1	N2	-0.313	-0.006	1	625.932	375.300	21.94		311.09			00	
19900410						2	626.044	375.292	22.06		311.10			00	
19900410						1	788.160	178.025	21.89					00	
19900410	6078	2	N2	-0.313	-0.006	1	627.253	375.272	22.01		311.09			00	
19900410						2	627.384	375.288	22.15		311.08			00	
19900410						1	791.509	178.030	21.99					00	
19900417	66625	1	AIR	-0.313	-0.006	1	651.245	375.322	22.01		345.03	0.29	344.74	00	
19900417						2	651.420	375.283	22.11		345.17	0.29	344.88	00	
19900416						1	783.525	177.980	21.87					00	
19900418	66625	2	AIR	-0.313	-0.006	1	650.812	375.300	21.96		345.14	0.29	344.85	00	
19900418						2	650.894	375.282	22.08		345.12	0.29	344.83	00	
19900417						1	782.955	177.998	22.06					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19900418	2399	1	N2	-0.313	-0.006	1	633.678	375.284	22.13		324.31			00	
19900418						2	633.734	375.266	22.25		324.26			00	
19900418						1	781.334	178.064	22.00					00	
19900419	2399	2	N2	-0.313	-0.006	1	634.952	375.310	21.82		324.17			00	
19900419						2	635.232	375.305	22.00		324.32			00	
19900418						1	785.520	177.985	22.19					00	
19900419	39239	2	N2	-0.313	-0.006	1	642.939	375.304	21.88		333.00			00	
19900420						2	642.979	375.335	21.88		333.01			00	
19900419						1	786.850	178.041	21.85					00	
19900510	66696	1	AIR	-0.313	-0.006	1	664.865	375.296	21.24		360.79	0.31	360.48	00	HG CONTACTED POINTER PREMATURELY
19900510						2	664.989	375.280	21.41		360.75	0.31	360.44	00	
19900509						1	788.100	178.012	22.14					00	
19900510	66696	2	AIR	-0.313	-0.006	1	663.734	375.304	21.39		360.30	0.31	359.99	0F	HG CONTACTED POINTER PREMATURELY
19900510						2	664.033	375.261	21.53		360.55	0.31	360.24	0F	
19900510						1	784.386	178.009	21.31					0F	
19900511	71308	1	AIR	-0.313	-0.006	1	677.304	375.314	21.93		376.66	0.32	376.34	00	
19900511						2	677.313	375.273	22.01		376.62	0.32	376.30	00	
19900510						1	784.483	177.966	21.45					00	
19900511	71308	2	AIR	-0.313	-0.006	1	675.312	375.285	21.74		376.59	0.32	376.27	00	
19900511						2	675.556	375.288	21.84		376.76	0.32	376.44	00	
19900511						1	782.248	178.035	21.97					00	
19900511	1540	1	N2	-0.313	-0.006	1	679.810	375.298	21.66		380.80			00	
19900511						2	679.989	375.273	21.76		380.92			00	
19900511						1	784.325	178.004	21.78					00	
19900521	1540	2	N2	-0.313	-0.006	1	680.464	375.312	21.62		381.07			00	
19900522						2	680.536	375.295	21.77		380.98			00	
19900521						1	784.731	177.938	21.57					00	
19900522	66696	3	AIR	-0.313	-0.006	1	663.595	375.305	21.79		360.77	0.31	360.46	00	
19900522						2	663.578	375.308	21.91		360.59	0.31	360.28	00	
19900521						1	783.184	178.004	21.66					00	
19900523	71286	1	AIR	-0.313	-0.006	1	612.890	375.340	21.86		297.34	0.32	297.02	00	
19900523						2	612.946	375.320	22.04		297.24	0.32	296.92	00	
19900522						1	782.953	178.060	21.82					00	
19900523	71286	2	AIR	-0.313	-0.006	1	612.150	375.336	21.88		297.34	0.32	297.02	00	
19900523						2	612.138	375.311	21.96		297.27	0.32	296.95	00	
19900523						1	781.184	178.038	21.90					00	
19900524	7366	1	N2	-0.313	-0.006	1	594.502	375.324	21.83		276.89			00	
19900524						2	594.558	375.328	21.93		276.85			00	
19900523						1	777.508	178.000	21.91					00	
19900524	7366	2	N2	-0.313	-0.006	1	595.106	375.329	21.85		276.89			00	
19900524						2	595.078	375.310	21.88		276.85			00	
19900524						1	778.988	177.974	21.87					00	
19900611	71370	1	AIR	-0.313	-0.006	1	700.414	375.367	22.48		407.11	0.31	406.80	00	
19900611						2	700.595	375.366	22.55		407.24	0.31	406.93	00	
19900611						1	782.645	178.145	22.17					00	
19900612	71370	2	AIR	-0.313	-0.006	1	700.080	375.398	22.08		407.16	0.31	406.85	00	
19900612						2	700.134	375.364	22.14		407.18	0.31	406.87	00	
19900611						1	783.315	178.008	22.49					00	
19900612	35299	1	N2	-0.313	-0.006	1	706.772	375.350	21.99		415.40			00	
19900612						2	706.870	375.339	22.08		415.41			00	
19900612						1	783.148	178.082	22.10					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19900613	35299	2	N2	-0.313	-0.006	1	706.754	375.345	22.37		415.48			00	
19900613						2	706.726	375.337	22.39		415.42			00	
19900612						1	781.970	178.012	22.03					00	
19900614	39239	3	N2	-0.313	-0.006	1	640.111	375.368	21.65		332.88			00	
19900614						2	640.262	375.298	21.74		333.05			00	
19900613						1	782.125	178.043	22.38					00	
19900615	34819	1	AIR	-0.313	-0.006	1	577.724	375.352	21.83		252.39	0.24	252.15	00	
19900615						2	577.835	375.341	21.88		252.49	0.24	252.25	00	
19900614						1	784.616	178.040	21.68					00	
19900620	34819	2	AIR	-0.313	-0.006	1	577.618	375.348	22.21		252.48	0.24	252.24	00	
19900620						2	577.676	375.355	22.28		252.48	0.24	252.24	00	
19900619						1	783.985	178.030	22.02					00	
19900702	3753	1	N2	-0.313	-0.006	1	572.887	375.348	22.80		246.52			00	HG CONTACTED POINTER PREMATURELY
19900702						2	573.058	375.356	23.07		246.48			00	
19900702						1	783.231	178.116	22.15					00	
19900703	3753	2	N2	-0.313	-0.006	1	571.595	375.360	22.06		246.53			00	
19900703						2	571.604	375.364	22.11		246.49			00	
19900702						1	782.221	178.040	22.85					00	
19900703	71479	1	AIR	-0.313	-0.006	1	737.860	375.332	22.78		454.13	0.30	453.83	00	
19900703						2	737.942	375.350	22.87		454.06	0.30	453.76	00	
19900703						1	782.671	178.029	22.48					00	
19900705	71479	2	AIR	-0.313	-0.006	1	737.929	375.314	22.17		454.17	0.30	453.87	00	
19900705						2	738.108	375.294	22.31		454.19	0.30	453.89	00	
19900705						1	782.195	178.000	21.62					00	
19900706	35316	1	N2	-0.313	-0.006	1	752.288	375.338	22.06		473.31			00	
19900706						2	752.438	375.338	22.18		473.30			00	
19900705						1	782.360	177.964	22.24					00	
19900709	35316	2	N2	-0.313	-0.006	1	753.748	375.333	22.08		473.18			00	
19900709						2	753.970	375.298	22.25		473.21			00	
19900709						1	783.599	178.104	21.60					00	
19900710	71251	1	AIR	-0.313	-0.006	1	546.468	375.343	21.97		213.71	0.34	213.37	00	
19900710						2	546.709	375.352	22.32		213.73	0.34	213.39	00	
19900709						1	784.136	177.990	22.14					00	
19900710	71251	2	AIR	-0.313	-0.006	1	546.195	375.320	22.65		213.74	0.34	213.40	00	
19900710						2	546.338	375.327	22.89		213.73	0.34	213.39	00	
19900710						1	781.454	178.029	22.02					00	
19900711	2408	1	N2	-0.313	-0.006	1	532.377	375.338	22.27		197.09			00	
19900711						2	532.491	375.324	22.50		197.09			00	HG CONTACTED POINTER PREMATURELY
19900710						1	781.724	178.016	22.75					00	
19900712	2408	2	N2	-0.313	-0.006	1	531.968	375.358	22.76		197.10			00	
19900712						2	531.972	375.310	22.86		197.09			00	
19900711						1	778.124	178.016	22.34					00	
19900712	67615	1	AIR	-0.313	-0.006	1	775.870	375.328	22.67		504.45	0.30	504.15	00	HG CONTACTED POINTER PREMATURELY
19900712						2	776.144	375.277	22.82		504.59	0.30	504.29	00	
19900712						1	780.502	177.972	22.80					00	
19900712	67615	2	AIR	-0.313	-0.006	1	777.594	375.340	23.00		504.39	0.30	504.09	00	
19900712						2	777.942	375.279	23.19		504.56	0.30	504.26	00	
19900712						1	782.314	178.012	22.72					00	
19900713	39239	4	N2	-0.313	-0.006	1	640.012	375.300	22.74		333.18			00	
19900713						2	640.172	375.317	22.88		333.20			00	
19900712						1	780.538	177.934	23.08					00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	Mercury Column Data for CO2 & Total Gas Vols. Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19900821	66556	1	AIR	-0.313	-0.006	1 457.461	375.312	22.79		101.50	0.37	101.13	00	HG CONTACTED POINTER PREMATURELY
19900821						2 457.454	375.282	22.86		101.51	0.37	101.14	00	HG CONTACTED POINTER PREMATURELY
19900820						1 787.620	177.974	22.32					00	
19900821	66556	2	AIR	-0.313	-0.006	1 457.170	375.282	22.89		101.46	0.37	101.09	00	
19900821						2 457.187	375.260	23.04		101.45	0.37	101.08	00	HG CONTACTED POINTER PREMATURELY
19900821						1 786.898	178.051	22.82					00	
19900822	62807	1	AIR	-0.313	-0.006	1 651.074	375.276	22.67		339.49	0.29	339.20	0F	TEMP UNCERTAINTY-ALL FANS OFF IN CABINET
19900822						2 650.941	375.264	22.69		339.31	0.29	339.02	00	HG CONTACTED POINTER PREMATURELY
19900822						3 651.032	375.204	22.78		339.39	0.29	339.10	00	
19900821						1 794.083	178.041	22.94					00	
19900823	62807	2	AIR	-0.313	-0.006	1 646.918	375.266	22.62		339.29	0.29	339.00	00	
19900823						2 647.149	375.263	22.78		339.39	0.29	339.10	00	
19900822						1 784.611	177.931	22.69					0F	TEMP UNCERTAINTY-ALL FANS OFF
19900822						2 784.641	177.962	22.74					00	IN CABINET
19900823	62817	1	AIR	-0.313	-0.006	1 668.453	375.258	22.67		366.26	0.28	365.98	00	HG CONTACTED POINTER PREMATURELY
19900823						2 668.520	375.260	22.79		366.19	0.28	365.91	00	HG CONTACTED POINTER PREMATURELY
19900823						3 668.514	375.228	22.85		366.14	0.28	365.86	00	
19900823						1 784.499	177.947	22.67					00	
19900824	62817	2	AIR	-0.313	-0.006	1 668.244	375.220	22.85		366.26	0.28	365.98	00	
19900824						2 668.328	375.210	22.97		366.22	0.28	365.94	00	
19900823						1 783.950	178.024	22.72					00	
19900824	34891	1	AIR	-0.313	-0.006	1 613.540	375.242	22.96		298.84	0.24	298.60	00	HG CONTACTED POINTER PREMATURELY
19900824						2 613.741	375.250	23.22		298.80	0.24	298.56	00	HG CONTACTED POINTER PREMATURELY
19900824						3 613.686	375.226	23.26		298.72	0.24	298.48	00	
19900824						1 781.675	177.968	22.90					00	
19900828	34891	2	AIR	-0.313	-0.006	1 615.448	375.250	23.05		298.75	0.24	298.51	00	
19900828						2 615.512	375.247	23.11		298.77	0.24	298.53	00	
19900827						1 786.155	177.956	22.75					00	
19900828	62814	1	AIR	-0.313	-0.006	1 714.716	375.244	22.74		425.45	0.31	425.14	00	
19900828						2 714.838	375.220	22.85		425.47	0.31	425.16	00	
19900828						1 783.526	177.968	23.06					00	
19900829	62814	2	AIR	-0.313	-0.006	1 716.524	375.256	23.16		425.53	0.31	425.22	00	
19900829						2 716.588	375.232	23.21		425.56	0.31	425.25	00	
19900828						1 785.051	177.910	22.78					00	
19900829	39239	5	N2	-0.313	-0.006	1 642.227	375.252	23.02		333.13			00	
19900829						2 642.272	375.229	23.10		333.12			00	
19900829						1 785.424	177.948	23.18					00	
19920219	1607	1	AIR	-0.340	0.000	1 815.577	375.070	21.03		796.09	0.30	795.79	00	
19920219						2 815.633	375.092	21.10		795.95	0.30	795.65	00	
19920219						1 597.438	177.704	20.94					00	
19920220	1641	1	AIR	-0.340	0.000	1 845.728	375.080	21.08		1661.47	0.30	1661.17	00	
19920220						2 845.828	375.106	21.17		1661.19	0.30	1660.89	00	
19920219						1 392.796	177.798	21.05					00	
19920305	73292	1	N2	-0.340	0.000	1 641.176	375.175	20.90		330.50			00	HG CONTACTED POINTER PREMATURELY
19920305						2 641.374	375.154	20.98		330.67			00	
19920305						1 787.569	177.806	20.94					00	
19920306	73292	2	N2	-0.340	0.000	1 642.891	375.181	20.91		330.77			00	
19920306						2 643.056	375.185	21.08		330.77			00	
19920305						1 790.888	177.790	20.91					00	
19920312	39354	1	N2	-0.340	0.000	1 665.106	375.160	21.94		358.44			00	
19920312						2 665.312	375.146	22.15		358.44			00	
19920312						1 787.530	177.776	20.50					00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	Mercury Column Data for CO2 & Total Gas Vols. Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19920313	39354	2	N2	-0.340	0.000	1 665.994	375.185	21.09		358.47			00	
19920313						2 666.194	375.068	21.39		358.48			00	
19920312						1 794.562	177.798	22.03					00	
19920330	6052	1	N2	-0.340	0.000	1 669.304	375.138	20.71		362.98			00	
19920331						2 669.808	375.134	21.03		363.19			00	
19920330						1 791.426	177.794	20.50					00	
19920331	6052	2	N2	-0.340	0.000	1 668.160	375.163	20.80		363.19			00	
19920331						2 668.188	375.162	20.87		363.14			00	
19920330						1 789.049	177.790	20.79					00	
19920421	1607	2	AIR	-0.340	0.000	1 797.088	375.178	20.94		796.18	0.30	795.88	00	
19920421						2 797.178	375.136	21.00		796.26	0.30	795.96	00	
19920420						1 579.217	177.915	20.43					00	
19920421	75593	1	N2	-0.340	0.000	1 641.976	375.156	21.09		331.51			00	
19920421						2 642.116	375.162	21.14		331.61			00	
19920421						1 787.240	177.832	20.96					00	
19920421	75593	2	N2	-0.340	0.000	1 639.692	375.140	21.21		331.68			00	
19920421						2 639.744	375.156	21.25		331.68			00	
19920421						1 781.793	177.840	21.11					00	
19920514	1641	2	AIR	-0.340	0.000	1 794.834	375.182	21.09		1505.71	0.30	1505.41	00	
19920914						2 794.947	375.125	21.15		1506.00	0.30	1505.70	00	
19920513						1 389.579	177.896	21.38					00	
19920514	181	1	N2	-0.340	0.000	1 640.068	375.162	21.16		333.95			00	
19920514						2 640.209	375.115	21.23		334.10			00	
19920514						1 778.632	177.855	21.11					00	
19920514	181	2	N2	-0.340	0.000	1 641.188	375.154	21.27		334.10			00	
19920514						2 641.261	375.166	21.33		334.10			00	
19920514						1 780.888	177.910	21.18					00	
19920604	1641	3	AIR	-0.340	0.000	1 803.500	375.146	21.37		1505.97	0.30	1505.67	00	
19920604						2 803.772	375.118	21.47		1506.49	0.30	1506.19	00	
19920604						1 393.779	177.962	21.36					00	
19921216	6052	3	N2	-0.340	0.000	1 670.560	375.074	21.28		363.33			00	
19921216						2 670.780	375.064	21.37		363.50			00	
19921216						1 793.528	177.748	21.07					00	
19921217	6052	4	N2	-0.340	0.000	1 669.917	375.091	20.86		363.46			00	
19921217						2 670.564	375.098	21.46		363.47			00	
19921216						1 793.467	177.802	21.32					00	
19930120	39361	1	N2	-0.310	0.083	1 672.274	375.161	21.45		363.62			00	
19930120						2 672.458	375.134	21.59		363.69			00	
19930119						1 797.250	177.884	21.55					00	
19930120	39361	2	N2	-0.310	0.083	1 671.037	375.156	21.61		363.63			00	HG CONTACTED POINTER PREMATURELY
19930120						2 671.253	375.148	21.74		363.74			00	
19930120						1 794.226	177.944	21.49					00	
19930210	181	1	N2	-0.310	0.083	1 645.188	375.186	21.60		334.15			00	
19930210						2 645.329	375.140	21.70		334.27			00	HG CONTACTED POINTER PREMATURELY
19930210						1 790.054	177.798	21.68					00	
19930210	181	2	N2	-0.310	0.083	1 648.194	375.151	21.52		334.22			00	
19930210						2 648.251	375.146	21.61		334.19			00	
19930210						1 796.967	177.876	21.62					00	
19930223	39239	1	N2	-0.310	0.083	1 646.502	375.142	21.39		333.24			00	
19930223						2 646.578	375.121	21.49		333.24			00	
19930223						1 794.847	177.940	21.41					00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	Mercury Column Data for CO2 & Total Gas Vols.	Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19930223	39239	2	N2	-0.310	0.083	1	644.764	375.156	21.55		333.19			00	
19930223						2	644.924	375.142	21.74		333.18			00	
19930223						1	790.686	177.978	21.44					00	
19930224	39272	1	N2	-0.310	0.083	1	667.280	375.158	21.32		360.90			00	
19930224						2	667.527	375.127	21.44		361.09			00	
19930223						1	791.700	177.810	21.59					00	
19930224	39272	2	N2	-0.310	0.083	1	666.729	375.152	21.40		360.87			00	HG CONTACTED POINTER PREMATURELY
19930224						2	666.918	375.146	21.44		361.06			00	
19930224						1	790.040	177.928	21.36					00	
19930324	11092	1	N2	-0.310	0.083	1	642.931	375.212	21.52		329.24			00	
19930324						2	643.043	375.166	21.58		329.36			00	
19930324						1	793.676	177.832	21.47					00	
19930325	11092	2	N2	-0.310	0.083	1	642.243	375.192	21.61		329.36			00	
19930325						2	642.342	375.222	21.64		329.41			00	HG CONTACTED POINTER PREMATURELY
19930324						1	791.943	177.924	21.54					00	
19930426	66638	1	AIR	-0.310	0.083	1	648.674	375.176	21.70		339.04	0.31	338.73	00	
19930426						2	648.790	375.159	21.73		339.17	0.31	338.86	00	
19930426						1	788.893	177.978	21.65					00	
19930427	66638	2	AIR	-0.310	0.083	1	649.576	375.184	21.84		339.17	0.31	338.86	00	
19930427						2	649.541	375.151	21.87		339.13	0.31	338.82	00	
19930426						1	790.475	177.957	21.71					00	
19930427	66696	1	AIR	-0.310	0.083	1	665.538	375.190	21.62		360.82	0.31	360.51	00	HG CONTACTED POINTER PREMATURELY
19930427						2	665.630	375.160	21.65		360.93	0.31	360.62	00	
19930427						1	788.103	177.948	21.86					00	
19930427	66696	2	AIR	-0.310	0.083	1	666.248	375.196	21.57		360.92	0.31	360.61	00	
19930427						2	666.276	375.202	21.61		360.89	0.31	360.58	00	HG CONTACTED POINTER PREMATURELY
19930427						1	788.943	177.879	21.62					00	
19930506	71479	1	AIR	-0.310	0.083	1	742.139	375.202	21.41		454.07	0.30	453.77	00	
19930506						2	742.494	375.180	21.57		454.28	0.30	453.98	00	
19930505						1	791.136	177.859	21.68					00	
19930506	71479	2	AIR	-0.310	0.083	1	743.316	375.210	21.51		454.16	0.30	453.86	00	
19930506						2	743.540	375.191	21.63		454.27	0.30	453.97	00	
19930506						1	792.297	177.916	21.45					00	
19930514	71251	1	AIR	-0.310	0.083	1	548.208	375.226	21.16		213.61	0.34	213.27	00	
19930514						2	548.210	375.188	21.24		213.60	0.34	213.26	00	HG CONTACTED POINTER PREMATURELY
19930513						1	790.927	177.998	21.32					00	
19930514	71251	2	AIR	-0.310	0.083	1	548.130	375.164	21.28		213.73	0.34	213.39	00	
19930514						2	548.262	375.179	21.43		213.76	0.34	213.42	00	
19930514						1	789.869	177.928	21.18					00	
19930514	4274	1	N2	-0.310	0.083	1	572.556	375.181	21.57		243.53			00	
19930514						2	572.583	375.178	21.63		243.52			00	
19930514						1	790.763	177.920	21.33					00	
19930520	4274	2	N2	-0.310	0.083	1	571.286	375.220	22.07		243.37			00	
19930520						2	571.303	375.194	22.07		243.42			00	
19930520						1	786.781	178.050	21.63					00	
19930520	6071	1	N2	-0.310	0.083	1	625.090	375.230	21.81		310.43			00	
19930520						2	625.044	375.182	21.88		310.35			00	
19930520						1	788.049	177.910	22.07					00	
19930521	6071	2	N2	-0.310	0.083	1	625.040	375.214	21.51		310.48			00	
19930521						2	625.196	375.196	21.66		310.53			00	
19930520						1	788.049	177.972	21.83					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19930526	4296	1	N2	-0.310	0.083	1	634.253	375.185	21.60		320.69			00	
19930526						2	634.416	375.178	21.69		320.80			00	
19930526						1	789.759	177.937	21.58					00	
19930526	4296	2	N2	-0.310	0.083	1	635.604	375.208	21.79		320.77			00	
19930526						2	635.665	375.172	21.84		320.84			00	
19930526						1	792.444	177.916	21.64					00	
19930527	39256	1	N2	-0.310	0.083	1	654.869	375.199	21.73		346.10			00	
19930527						2	654.958	375.162	21.85		346.11			00	
19930526						1	790.302	177.936	21.82					00	
19930527	39256	2	N2	-0.310	0.083	1	655.504	375.188	21.77		346.09			00	
19930527						2	655.556	375.182	21.82		346.10			00	
19930527						1	791.526	177.930	21.76					00	
19930602	66625	1	AIR	-0.310	0.083	1	655.927	375.220	21.95		345.15	0.29	344.86	00	
19930602						2	656.074	375.160	22.02		345.32	0.29	345.03	00	
19930602						1	793.476	177.954	21.70					00	
19930603	66625	2	AIR	-0.310	0.083	1	654.377	375.222	21.47		345.61	0.29	345.32	0F	
19930603						2	654.502	375.148	21.60		345.69	0.29	345.40	0F	
19930602						1	790.903	177.925	21.98					0F	
19930604	39239	3	N2	-0.310	0.083	1	644.678	375.211	21.57		333.14			00	
19930604						2	644.780	375.182	21.72		333.12			00	
19930603						1	790.540	177.924	21.52					00	
19930604	71341	1	AIR	-0.310	0.083	1	635.518	375.214	21.76		322.75	0.31	322.44	00	
19930604						2	635.610	375.190	21.87		322.76	0.31	322.45	00	
19930604						1	788.540	177.956	21.65					00	
19930609	71341	2	AIR	-0.310	0.083	1	635.882	375.218	21.83		322.59	0.31	322.28	00	
19930609						2	635.918	375.157	21.89		322.64	0.31	322.33	00	
19930609						1	789.795	177.892	21.80					00	
19930610	66625	3	AIR	-0.310	0.083	1	653.701	375.210	21.47		345.20	0.29	344.91	00	
19930610						2	653.756	375.173	21.60		345.15	0.29	344.86	00	
19930609						1	789.850	177.914	21.84					00	
19930610	34819	1	AIR	-0.310	0.083	1	578.252	375.214	21.88		252.54	0.24	252.30	00	
19930610						2	578.282	375.180	21.91		252.59	0.24	252.35	00	
19930610						1	785.645	177.999	21.51					00	
19930610	34819	2	AIR	-0.310	0.083	1	579.131	375.206	22.48		252.49	0.24	252.25	00	
19930610						2	579.211	375.180	22.52		252.58	0.24	252.34	00	
19930610						1	787.901	177.924	21.90					00	
19930611	71370	1	AIR	-0.310	0.083	1	702.030	375.198	21.77		407.14	0.31	406.83	00	
19930611						2	702.140	375.202	21.84		407.17	0.31	406.86	00	
19930610						1	787.837	177.862	22.50					00	
19930611	71370	2	AIR	-0.310	0.083	1	702.905	375.190	22.24		407.17	0.31	406.86	00	
19930611						2	703.018	375.202	22.26		407.27	0.31	406.96	00	
19930611						1	786.936	177.915	21.80					00	
19930616	35299	1	N2	-0.310	0.083	1	713.219	375.210	21.64		415.22			0F	HG CONTACTED POINTER PREMATURELY
19930616						2	713.602	375.176	21.69		415.66			00	
19930616						1	794.512	177.920	21.42					00	
19930616	35299	2	N2	-0.310	0.083	1	708.764	375.194	21.91		415.43			00	
19930616						2	708.830	375.182	21.91		415.53			00	
19930616						1	786.044	177.952	21.66					00	
19930617	3753	1	N2	-0.310	0.083	1	573.784	375.207	21.44		246.65			00	
19930617						2	573.900	375.218	21.60		246.64			00	
19930616						1	788.302	177.950	21.91					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19930617	3753	2	N2	-0.310	0.083	1	572.748	375.207	21.66		246.68			00	
19930617						2	572.768	375.176	21.70		246.71			00	
19930617						1	783.648	177.981	21.48					00	
19930617	6078	1	N2	-0.310	0.083	1	625.993	375.194	22.03		311.27			00	
19930617						2	626.231	375.194	22.29		311.27			00	
19930617						1	787.461	177.986	21.69					00	
19930623	6078	2	N2	-0.310	0.083	1	625.318	375.222	22.54		311.09			00	
19930623						2	625.376	375.167	22.57		311.20			00	
19930623						1	786.010	177.936	22.19					00	
19930624	2399	1	N2	-0.310	0.083	1	635.630	375.205	22.37		324.33			00	
19930624						2	635.624	375.218	22.36		324.32			00	
19930623						1	786.490	177.926	22.55					00	
19930624	2399	2	N2	-0.310	0.083	1	636.578	375.234	22.93		324.19			00	
19930624						2	636.699	375.228	22.90		324.38			00	
19930624						1	787.332	177.929	22.38					00	
19930625	35316	1	N2	-0.310	0.083	1	754.906	375.227	21.72		473.36			00	
19930625						2	755.162	375.200	21.89		473.43			00	
19930624						1	788.824	177.944	22.93					00	
19930630	35316	2	N2	-0.310	0.083	1	756.004	375.202	21.81		473.13			00	HG CONTACTED POINTER PREMATURELY
19930630						2	756.168	375.185	21.83		473.32			00	
19930630						1	788.708	177.942	22.00					00	
19930701	67615	1	AIR	-0.310	0.083	1	780.146	375.214	21.64		504.63	0.30	504.33	00	
19930701						2	780.286	375.188	21.70		504.73	0.30	504.43	00	
19930630						1	786.924	177.947	21.82					00	
19930701	67615	2	AIR	-0.310	0.083	1	780.264	375.210	21.72		504.61	0.30	504.31	00	
19930701						2	780.498	375.182	21.76		504.86	0.30	504.56	00	
19930701						1	786.579	177.910	21.66					00	
19930702	71286	1	AIR	-0.310	0.083	1	614.836	375.235	21.62		297.39	0.32	297.07	00	
19930702						2	614.802	375.194	21.70		297.31	0.32	296.99	00	
19930701						1	788.201	177.909	21.74					00	
19930702	71286	2	AIR	-0.310	0.083	1	613.694	375.196	21.74		297.31	0.32	296.99	00	
19930702						2	613.740	375.186	21.79		297.33	0.32	297.01	00	
19930702						1	785.083	177.907	21.65					00	
19930707	71308	1	AIR	-0.310	0.083	1	679.576	375.176	21.84		376.91	0.32	376.59	00	
19930707						2	679.682	375.166	21.87		377.02	0.32	376.70	00	
19930707						1	789.409	177.912	21.64					00	
19930707	71308	2	AIR	-0.310	0.083	1	679.187	375.175	22.12		376.98	0.32	376.66	00	
19930707						2	679.217	375.158	22.19		376.94	0.32	376.62	00	
19930707						1	788.388	177.934	21.85					00	
19930708	1540	1	N2	-0.310	0.083	1	680.857	375.180	22.12		380.91			00	
19930708						2	680.985	375.158	22.12		381.09			00	
19930707						1	786.132	177.942	22.15					00	
19930708	1540	2	N2	-0.310	0.083	1	682.697	375.180	22.13		381.03			00	
19930708						2	682.725	375.186	22.15		381.03			00	
19930708						1	789.503	177.925	22.12					00	
19930713	2408	1	N2	-0.310	0.083	1	535.039	375.201	21.82		196.95			00	
19930713						2	535.076	375.190	21.84		196.99			00	HG CONTACTED POINTER PREMATURELY
19930713						1	792.069	177.910	21.97					00	
19930714	2408	2	N2	-0.310	0.083	1	534.722	375.216	21.51		197.05			00	
19930714						2	534.806	375.174	21.57		197.17			00	
19930713						1	790.839	177.942	21.82					00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	Mercury Column Data for CO2 & Total Gas Vols.	Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19930714	7366	1	N2	-0.310	0.083	1	598.527	375.170	21.65		276.92			00	
19930714						2	598.658	375.169	21.72		277.01			00	
19930714						1	788.306	177.923	21.53					00	
19930714	7366	2	N2	-0.310	0.083	1	599.548	375.174	21.87		276.83			00	
19930714						2	599.650	375.140	21.92		276.95			00	
19930714						1	791.110	177.906	21.68					00	
19930715	39361	3	N2	-0.310	0.083	1	669.518	375.200	21.68		363.46			0F	
19930715						2	669.841	375.162	21.79		363.76			00	
19930714						1	791.899	177.842	21.90					00	
19930715	39361	4	N2	-0.310	0.083	1	670.372	375.160	22.02		363.78			00	
19930715						2	670.438	375.154	22.09		363.78			00	
19930715						1	792.128	177.904	21.72					00	
19930907	11092	3	N2	-0.310	0.083	1	641.838	375.210	22.34		329.30			00	
19930907						2	641.958	375.198	22.31		329.50			00	
19930907						1	789.300	177.902	21.47					00	
19930908	11092	4	N2	-0.310	0.083	1	641.498	375.222	22.23		329.34			00	
19930908						2	641.530	375.209	22.22		329.41			00	
19930907						1	790.655	177.989	22.34					00	
19930909	11081	1	N2	-0.310	0.083	1	664.027	375.208	21.79		357.69			00	
19930909						2	664.030	375.180	21.78		357.74			00	
19930908						1	790.703	177.938	22.24					00	
19930909	11081	2	N2	-0.310	0.083	1	662.945	375.216	22.26		357.61			00	HG CONTACTED POINTER PREMATURELY
19930909						2	663.053	375.178	22.25		357.81			00	
19930909						1	786.522	177.952	21.79					00	
19930910	11076	1	N2	-0.310	0.083	1	645.188	375.218	21.58		336.06			00	
19930910						2	645.292	375.192	21.70		336.08			00	
19930909						1	787.984	177.946	22.27					00	
19930910	11076	2	N2	-0.310	0.083	1	644.390	375.210	21.97		336.12			00	
19930910						2	644.505	375.210	22.07		336.14			00	
19930910						1	783.790	177.958	21.60					00	
19940725	4286	1	N2	-0.340	0.000	1	648.434	375.259	22.11		338.09			00	
19940725						2	648.413	375.171	22.16		338.11			00	
19940725						1	790.469	177.867	22.34					00	
19940726	4286	2	N2	-0.340	0.000	1	647.059	375.188	21.99		337.80			0F	CO2 LOSS DURING EXTRACTION-TRANSFERS
19940726						2	647.100	375.152	22.03		337.85			0F	CO2 LOSS DURING EXTRACTION-TRANSFERS
19940725						1	787.829	177.842	22.13					0F	
19940726	75593	1	N2	-0.340	0.000	1	667.857	375.186	22.06		362.98			00	
19940726						2	667.915	375.168	22.14		362.97			00	
19940726						1	788.725	177.915	22.00					00	
19940727	75593	2	N2	-0.340	0.000	1	669.504	375.214	22.23		363.13			00	
19940727						2	669.488	375.191	22.24		363.13			00	
19940726						1	791.655	177.890	22.09					00	
19940802	11076	1	N2	-0.340	0.000	1	646.390	375.200	22.11		336.21			00	HG CONTACTED POINTER PREMATURELY
19940802						2	646.340	375.155	22.12		336.19			00	
19940801						1	790.046	177.914	22.61					00	
19940802	11076	2	N2	-0.340	0.000	1	645.002	375.162	21.98		336.03			00	
19940802						2	645.198	375.158	22.05		336.19			00	
19940802						1	786.506	177.910	22.11					00	
19940803	11081	1	N2	-0.340	0.000	1	661.875	375.198	22.05		357.86			00	HG CONTACTED POINTER PREMATURELY
19940803						2	661.839	375.182	22.10		357.78			00	
19940802						1	784.795	177.955	22.00					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19940803	11081	2	N2	-0.340	0.000	1	662.238	375.184	22.04		357.78			00	
19940803						2	662.279	375.152	22.07		357.83			00	
19940803						1	785.875	177.912	22.07					00	
19940804	4286	3	N2	-0.340	0.000	1	645.359	375.170	22.06		338.18			00	
19940804						2	645.433	375.173	22.18		338.12			00	
19940803						1	783.138	177.930	22.05					00	
19940913	1607	1	AIR	-0.340	0.000	1	804.000	375.185	21.93		795.75	0.30	795.45	00	
19940913						2	804.052	375.150	21.97		795.80	0.30	795.50	00	
19940913						1	586.842	177.918	21.98					00	
19940914	1607	2	AIR	-0.340	0.000	1	804.426	375.200	22.12		796.02	0.30	795.72	00	
19940914						2	804.634	375.142	22.20		796.29	0.30	795.99	00	
19940913						1	586.834	177.967	21.96					00	
19940914	1641	1	AIR	-0.340	0.000	1	795.732	375.176	22.33		1504.31	0.30	1504.01	00	
19940914						2	795.690	375.142	22.34		1504.23	0.30	1503.93	00	
19940914						1	389.956	177.990	22.14					00	
19940915	1641	2	AIR	-0.340	0.000	1	796.986	375.194	22.34		1504.67	0.30	1504.37	00	
19940915						2	797.062	375.185	22.36		1504.87	0.30	1504.57	00	
19940914						1	390.686	178.002	22.34					00	
19950322	181	1	N2	-0.340	0.000	1	645.516	375.073	21.56		338.54			0F	HG CONTACTED POINTER PREMATURELY
19950322						2	645.914	375.072	21.67		338.91			00	HG CONTACTED POINTER PREMATURELY
19950322						1	782.800	177.822	21.48					00	
19950322	181	2	N2	-0.340	0.000	1	648.781	375.068	21.75		338.91			00	
19950322						2	648.851	375.035	21.89		338.87			00	
19950322						1	789.392	177.902	21.60					00	
19950323	6052	1	N2	-0.340	0.000	1	668.291	375.100	21.80		365.40			0F	HG CONTACTED POINTER PREMATURELY
19950323						2	668.648	375.065	21.92		365.73			00	
19950322						1	785.844	177.862	21.80					00	
19950323	6052	2	N2	-0.340	0.000	1	668.196	375.056	22.07		365.75			00	
19950323						2	668.332	375.063	22.14		365.82			00	
19950323						1	784.636	177.847	21.84					00	
19950626	6052	3	N2	-0.340	0.000	1	669.942	375.097	21.78		365.75			00	
19950626						2	670.092	375.059	21.98		365.72			00	
19950626						1	788.520	177.850	21.70					00	
19950627	6052	4	N2	-0.340	0.000	1	666.403	375.102	21.63		365.82			00	
19950627						2	666.455	375.070	21.78		365.73			00	
19950626						1	781.650	177.854	21.83					00	
19950627	181	3	N2	-0.340	0.000	1	646.534	375.109	21.87		338.88			00	
19950627						2	646.607	375.062	21.98		338.89			00	
19950627						1	784.220	177.860	21.69					00	
19950628	181	4	N2	-0.340	0.000	1	647.304	375.093	21.71		338.57			00	
19950628						2	647.458	375.072	21.92		338.53			00	
19950627						1	787.393	177.882	21.91					00	
19950628	75593	1	N2	-0.340	0.000	1	666.723	375.088	22.12		363.49			00	
19950628						2	666.812	375.056	22.17		363.58			00	
19950628						1	785.022	177.842	21.78					00	
19950629	75593	2	N2	-0.340	0.000	1	667.052	375.113	21.73		363.31			00	
19950629						2	667.139	375.094	21.86		363.28			00	
19950628						1	787.621	177.872	22.14					00	
19950629	11094	1	N2	-0.340	0.000	1	649.700	375.100	22.00		340.98			00	
19950629						2	649.834	375.103	22.13		340.98			00	
19950629						1	787.488	177.879	21.78					00	

				Meniscus Corr.			Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19950629	11094	2	N2	-0.340	0.000	1	648.779	375.132	22.34		340.63			00	HG CONTACTED POINTER PREMATURELY
19950630						2	648.354	375.106	21.81		340.78			00	
19950629						1	785.785	177.870	22.03					00	
19950630	10067	1	N2	-0.340	0.000	1	669.363	375.095	22.13		366.83			00	
19950630						2	669.501	375.082	22.25		366.86			00	
19950630						1	785.119	177.826	21.88					00	
19950630	10067	2	N2	-0.340	0.000	1	670.098	375.103	22.34		366.81			00	
19950630						2	670.148	375.079	22.40		366.82			00	
19950630						1	786.893	177.876	22.17					00	
19950701	4286	1	N2	-0.340	0.000	1	646.696	375.098	22.17		338.37			00	
19950701						2	646.747	375.090	22.27		338.32			00	
19950630						1	786.320	177.880	22.35					00	
19950701	4286	2	N2	-0.340	0.000	1	646.688	375.112	22.39		338.35			00	
19950701						2	646.741	375.095	22.42		338.40			00	
19950701						1	785.468	177.822	22.21					00	
19950921	66625	1	AIR	-0.276	-0.026	1	652.183	375.125	22.44		345.22	0.29	344.93	00	
19950921						2	652.276	375.103	22.48		345.31	0.29	345.02	00	
19950921						1	785.759	177.780	22.38					00	
19950921	66625	2	AIR	-0.276	-0.026	1	653.044	375.102	22.40		345.25	0.29	344.96	00	
19950921						2	653.084	375.084	22.47		345.23	0.29	344.94	00	
19950921						1	787.854	177.739	22.45					00	
19950922	66638	1	AIR	-0.276	-0.026	1	648.284	375.128	22.23		339.14	0.31	338.83	00	
19950922						2	648.308	375.108	22.27		339.14	0.31	338.83	00	
19950921						1	788.417	177.732	22.42					00	
19950926	66638	2	AIR	-0.276	-0.026	1	649.589	375.160	22.08		339.24	0.31	338.93	00	
19950926						2	649.542	375.094	22.16		339.17	0.31	338.86	00	
19950926						1	790.646	177.847	22.02					00	
19950927	66696	1	AIR	-0.276	-0.026	1	665.958	375.112	21.95		361.05	0.31	360.74	00	
19950927						2	666.034	375.085	22.04		361.06	0.31	360.75	00	
19950926						1	788.632	177.832	22.10					00	
19950927	66696	2	AIR	-0.276	-0.026	1	663.780	375.130	22.17		361.07	0.31	360.76	00	
19950927						2	663.790	375.094	22.25		361.03	0.31	360.72	00	
19950927						1	783.229	177.834	21.98					00	
19950927	71251	1	AIR	-0.276	-0.026	1	548.486	375.130	22.31		213.72	0.34	213.38	00	
19950928						2	548.455	375.112	22.14		213.83	0.34	213.49	00	
19950927						1	791.402	177.832	22.20					00	
19950928	71251	2	AIR	-0.276	-0.026	1	548.070	375.118	22.28		213.76	0.34	213.42	00	
19950928						2	548.099	375.098	22.33		213.78	0.34	213.44	00	
19950927						1	790.167	177.826	22.32					00	
19950928	67615	1	AIR	-0.276	-0.026	1	782.572	375.115	22.24		504.64	0.30	504.34	0F	
19950928						2	782.780	375.096	22.30		504.82	0.30	504.52	00	
19950928						1	790.506	177.844	22.30					00	
19950929	67615	2	AIR	-0.276	-0.026	1	781.344	375.111	22.09		504.97	0.30	504.67	00	
19950929						2	781.492	375.102	22.21		504.95	0.30	504.65	00	
19950928						1	788.480	177.822	22.26					00	
19951004	71341	1	AIR	-0.276	-0.026	1	633.137	375.125	22.30		322.78	0.31	322.47	00	
19951004						2	633.214	375.111	22.33		322.86	0.31	322.55	00	
19951004						1	783.263	177.806	22.26					00	
19951005	71341	2	AIR	-0.276	-0.026	1	634.480	375.146	22.50		322.70	0.31	322.39	00	
19951005						2	634.572	375.102	22.53		322.84	0.31	322.53	00	
19951004						1	786.235	177.840	22.31					00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	-	Mercury Column Data for CO2 & Total Gas Vols. Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19951005	71308	1	AIR	-0.276	-0.026	1	678.210	375.118	22.54		376.82	0.32	376.50	00	
19951005						2	678.330	375.114	22.55		376.96	0.32	376.64	00	
19951005						1	787.378	177.830	22.51					00	
19951006	71308	2	AIR	-0.276	-0.026	1	677.770	375.118	22.18		376.96	0.32	376.64	00	
19951006						2	677.899	375.124	22.27		376.99	0.32	376.67	00	
19951005						1	787.146	177.854	22.54					00	
19951010	71286	1	AIR	-0.276	-0.026	1	617.973	375.142	22.51		297.37	0.32	297.05	00	
19951010						2	617.958	375.112	22.52		297.37	0.32	297.05	00	
19951010						1	795.607	177.793	22.19					00	
19951011	71286	2	AIR	-0.276	-0.026	1	615.948	375.110	22.35		297.43	0.32	297.11	00	
19951011						2	615.948	375.087	22.35		297.46	0.32	297.14	00	
19951010						1	791.522	177.850	22.52					00	
19951011	71370	1	AIR	-0.276	-0.026	1	703.507	375.116	22.34		407.31	0.31	407.00	00	
19951011						2	703.610	375.088	22.43		407.34	0.31	407.03	00	
19951011						1	789.125	177.888	22.35					00	
19951012	71370	2	AIR	-0.276	-0.026	1	703.189	375.126	22.29		407.15	0.31	406.84	00	HG CONTACTED POINTER PREMATURELY
19951012						2	703.266	375.100	22.34		407.20	0.31	406.89	00	
19951011						1	788.829	177.815	22.37					00	
19951012	34819	1	AIR	-0.276	-0.026	1	579.169	375.116	22.37		252.56	0.24	252.32	00	
19951012						2	579.220	375.109	22.39		252.62	0.24	252.38	00	
19951012						1	789.349	177.848	22.30					00	
19951017	34819	2	AIR	-0.276	-0.026	1	580.372	375.137	21.92		252.90	0.24	252.66	0F	
19951017						2	580.474	375.134	22.07		252.89	0.24	252.65	0F	
19951017						1	791.892	177.802	21.78					0F	
19951018	71479	1	AIR	-0.276	-0.026	1	741.386	375.135	22.14		454.37	0.30	454.07	00	
19951018						2	741.380	375.102	22.16		454.37	0.30	454.07	00	
19951017						1	788.660	177.829	21.93					00	
19951018	71479	2	AIR	-0.276	-0.026	1	740.198	375.125	22.10		454.04	0.30	453.74	0F	
19951018						2	740.468	375.116	22.15		454.31	0.30	454.01	00	
19951018						1	787.732	177.869	22.15					00	
19951018	62807	1	AIR	-0.276	-0.026	1	649.106	375.114	22.07		339.45	0.29	339.16	00	
19951018						2	649.145	375.116	22.11		339.45	0.29	339.16	00	
19951018						1	789.512	177.818	22.12					00	
19951024	62807	2	AIR	-0.276	-0.026	1	650.980	375.134	22.04		339.47	0.29	339.18	00	
19951024						2	651.047	375.088	22.12		339.51	0.29	339.22	00	
19951024						1	792.718	177.821	21.68					00	
19951025	62817	1	AIR	-0.276	-0.026	1	671.750	375.134	22.09		366.34	0.28	366.06	00	
19951025						2	671.829	375.084	22.18		366.38	0.28	366.10	00	
19951024						1	791.417	177.832	22.07					00	
19951025	62817	2	AIR	-0.276	-0.026	1	672.278	375.124	21.86		366.22	0.28	365.94	00	
19951025						2	672.435	375.100	22.00		366.26	0.28	365.98	00	
19951025						1	793.340	177.854	22.11					00	
19951026	34891	1	AIR	-0.276	-0.026	1	617.708	375.131	21.94		298.96	0.24	298.72	00	
19951026						2	617.750	375.103	22.03		298.95	0.24	298.71	00	
19951025						1	792.313	177.840	21.89					00	
19951031	34891	2	AIR	-0.276	-0.026	1	617.216	375.116	21.75		298.93	0.24	298.69	00	
19951031						2	617.338	375.132	21.87		298.93	0.24	298.69	00	
19951031						1	789.988	177.821	21.17					00	
19951101	62814	1	AIR	-0.276	-0.026	1	717.041	375.136	21.55		425.54	0.31	425.23	00	
19951101						2	717.185	375.106	21.73		425.49	0.31	425.18	00	
19951031						1	787.541	177.857	21.78					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19951101	62814	2	AIR	-0.276	-0.026	1	716.788	375.110	21.88		425.50	0.31	425.19	00	
19951101						2	716.912	375.108	21.98		425.50	0.31	425.19	00	
19951101						1	786.084	177.836	21.61					00	
19951108	7361	1	N2	-0.340	0.000	1	657.566	375.119	21.83		346.59			00	
19951108						2	657.710	375.086	21.94		346.67			00	
19951108						1	794.926	177.844	21.68					00	
19951108	7361	2	N2	-0.340	0.000	1	657.072	375.108	22.09		346.47			00	
19951108						2	657.116	375.077	22.12		346.53			00	
19951108						1	793.947	177.868	21.87					00	
19951109	39361	1	N2	-0.340	0.000	1	675.620	375.106	21.74		371.39			00	
19951109						2	675.700	375.098	21.84		371.37			00	
19951108						1	791.809	177.852	22.10					00	
19951109	39361	2	N2	-0.340	0.000	1	675.996	375.109	21.89		371.31			00	
19951109						2	676.190	375.110	22.07		371.31			00	
19951109						1	791.678	177.888	21.77					00	
19960328	11094	1	N2	-0.340	0.000	1	646.802	375.078	22.04		340.99			00	
19960328						2	646.852	375.027	22.14		340.99			00	
19960327						1	782.229	177.721	22.43					00	
19960328	11094	2	N2	-0.340	0.000	1	649.612	375.044	22.33		341.02			00	
19960328						2	649.665	375.007	22.37		341.08			00	
19960328						1	787.211	177.813	22.08					00	
19960329	10067	1	N2	-0.340	0.000	1	670.323	375.067	22.05		366.85			00	HG CONTACTED POINTER PREMATURELY
19960329						2	670.418	375.000	22.18		366.88			00	
19960329						1	788.340	177.854	22.34					00	
19960329	10067	2	N2	-0.340	0.000	1	670.408	375.040	22.37		366.88			00	
19960329						2	670.438	375.026	22.42		366.87			00	
19960329						1	787.197	177.774	22.09					00	
19960402	34819	1	AIR	-0.276	-0.026	1	579.312	375.042	22.09		252.69	0.24	252.45	00	
19960402						2	579.330	375.030	22.16		252.67	0.24	252.43	00	
19960402						1	789.725	177.780	22.07					00	
19960403	7358	1	N2	-0.340	0.000	1	657.078	375.030	22.00		348.26			00	
19960403						2	657.114	375.018	22.08		348.22			00	
19960402						1	791.653	177.824	22.11					00	
19960403	7358	2	N2	-0.340	0.000	1	656.678	375.018	21.95		348.18			00	
19960403						2	656.746	375.018	22.01		348.19			00	
19960403						1	790.800	177.752	22.03					00	
19960404	7361	1	N2	-0.340	0.000	1	656.893	375.084	22.20		346.53			00	
19960404						2	656.964	375.047	22.26		346.58			00	
19960403						1	793.262	177.772	21.91					00	
19960404	7361	2	N2	-0.340	0.000	1	657.690	375.053	22.33		346.51			00	
19960404						2	657.654	375.038	22.37		346.44			00	
19960404						1	795.494	177.769	22.22					00	
19960924	39361	1	N2	-0.340	0.000	1	676.873	375.088	22.32		371.73			00	
19960924						2	676.914	375.055	22.35		371.78			00	
19960924						1	791.442	177.896	21.57					00	
19960925	39361	2	N2	-0.340	0.000	1	675.299	375.080	21.48		371.78			00	
19960925						2	675.466	375.054	21.67		371.77			00	HG CONTACTED POINTER PREMATURELY
19960924						1	791.614	177.836	22.33					00	
19960925	3756	1	N2	-0.340	0.000	1	677.250	375.094	22.27		372.43			00	
19960925						2	677.425	375.094	22.33		372.56			00	HG CONTACTED POINTER PREMATURELY
19960925						1	791.032	177.789	21.56					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19960925	3756	2	N2	-0.340	0.000	1	675.970	375.110	22.43		372.51			00	HG CONTACTED POINTER PREMATURELY
19960925						2	675.988	375.096	22.47		372.50			00	
19960925						1	789.597	177.880	22.29					00	
19961205	11081	1	N2	-0.340	0.000	1	655.630	375.070	22.90		349.72			00	
19961205						2	655.643	375.048	22.91		349.75			00	
19961205						1	784.345	177.844	22.31					00	
19961205	11081	2	N2	-0.340	0.000	1	657.800	375.076	22.86		349.64			00	HG CONTACTED POINTER PREMATURELY
19961205						2	657.846	375.052	22.89		349.69			00	
19961205						1	790.546	177.820	22.91					00	
19961206	7358	3	N2	-0.340	0.000	1	655.478	375.075	22.75		348.21			00	
19961206						2	655.545	375.080	22.78		348.25			00	HG CONTACTED POINTER PREMATURELY
19961205						1	788.184	177.846	22.87					00	
19961206	7358	4	N2	-0.340	0.000	1	656.237	375.104	22.70		348.21			00	HG CONTACTED POINTER PREMATURELY
19961206						2	656.208	375.073	22.70		348.21			00	
19961206						1	789.626	177.805	22.77					00	
19971230	11094	1	N2	-0.340	-0.059	1	654.625	375.021	22.52		351.47			00	HG CONTACTED POINTER PREMATURELY
19971230						2	654.839	374.993	22.62		351.65			00	
19971230						1	779.719	177.706	22.18					00	
19971231	11094	2	N2	-0.340	-0.059	1	655.172	375.010	22.08		351.54			00	
19971231						2	655.285	375.002	22.20		351.55			00	
19971230						1	782.548	177.723	22.54					00	
19971231	4289	1	N2	-0.340	-0.059	1	673.220	375.005	22.41		374.22			00	
19971231						2	673.415	375.000	22.53		374.31			00	HG CONTACTED POINTER PREMATURELY
19971231						1	780.957	177.661	22.12					00	
19971231	4289	2	N2	-0.340	-0.059	1	675.022	375.012	22.55		374.21			00	
19971231						2	675.092	375.010	22.62		374.21			00	
19971231						1	785.109	177.712	22.47					00	
19980115	7361	1	N2	-0.340	-0.059	1	659.160	375.081	22.48		352.14			00	
19980115						2	659.180	375.061	22.54		352.12			00	
19980115						1	788.321	177.786	22.15					00	
19980115	7361	2	N2	-0.340	-0.059	1	659.274	375.088	22.57		352.15			00	HG JUMPED INTO CONTACT PREMATURELY-CONSTRUCTION
19980115						2	659.378	375.058	22.65		352.21			00	HG CONTACTED POINTER PREMATURELY
19980115						1	789.119	177.795	22.50					00	
19980116	11076	1	N2	-0.340	-0.059	1	673.949	375.106	22.09		373.56			00	HG JUMPED INTO CONTACT PREMATURELY-CONSTRUCTION
19980116						2	673.910	375.081	22.17		373.44			00	HG JUMPED INTO CONTACT PREMATURELY-CONSTRUCTION
19980116						3	674.217	375.092	22.32		373.61			00	HG JUMPED INTO CONTACT VERY PREMATURELY
19980115						1	785.108	177.772	22.59					00	-CONSTRUCTION
19980116	11076	2	N2	-0.340	-0.059	1	675.518	375.089	22.61		373.54			00	
19980120						2	675.153	375.113	22.14		373.68			00	HG CONTACTED POINTER PREMATURELY
19980120						3	675.120	375.070	22.18		373.64			00	
19980116						1	786.227	177.771	22.12					00	
19980204	11092	1	N2	-0.340	-0.059	1	650.886	375.044	22.13		350.42			00	
19980204						2	651.048	375.046	22.22		350.51			00	
19980203						1	774.698	177.734	22.39					00	
19980204	11092	2	N2	-0.340	-0.059	1	656.096	375.053	22.37		350.46			00	
19980204						2	656.250	375.052	22.42		350.59			00	HG JUMPED INTO CONTACT PREMATURELY
19980204						1	784.999	177.842	22.16					00	
19980205	11081	1	N2	-0.340	-0.059	1	656.258	375.083	22.63		349.73			00	HG JUMPED INTO CONTACT PREMATURELY
19980205						2	656.300	375.030	22.65		349.82			00	
19980204						1	786.464	177.794	22.40					00	
19980206	11081	2	N2	-0.340	-0.059	1	655.124	375.018	22.18		349.77			00	
19980206						2	655.181	375.022	22.27		349.72			00	
19980205						1	785.542	177.786	22.63					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19980206	3756	1	N2	-0.340	-0.059	1	672.898	375.059	22.37		372.45			00	
19980206						2	673.000	375.014	22.46		372.52			00	
19980206						1	783.456	177.793	22.21					00	
19980206	3756	2	N2	-0.340	-0.059	1	672.855	375.087	22.63		372.43			00	HG CONTACTED POINTER PREMATURELY
19980206						2	672.830	375.020	22.66		372.44			00	
19980206						1	783.212	177.784	22.41					00	
19980310	67615	1	AIR	-0.208	-0.059	1	782.704	375.049	22.42		504.64	0.30	504.34	0F	
19980310						2	783.068	375.002	22.52		504.97	0.30	504.67	00	
19980310						1	790.230	177.791	22.18					00	
19980311	71251	1	AIR	-0.208	-0.059	1	543.920	375.070	22.41		213.85	0.34	213.51	00	
19980311						2	543.943	375.031	22.49		213.87	0.34	213.53	00	
19980310						1	775.601	177.802	22.45					00	
19980311	66696	1	AIR	-0.208	-0.059	1	665.629	375.058	22.49		360.95	0.31	360.64	00	
19980311						2	665.844	375.038	22.60		361.11	0.31	360.80	00	
19980311						1	787.906	177.748	22.46					00	
19980312	71479	1	AIR	-0.208	-0.059	1	737.184	375.030	22.14		454.54	0.30	454.24	00	
19980312						2	737.364	375.020	22.32		454.48	0.30	454.18	00	
19980311						1	783.033	177.814	22.54					00	
19980312	34819	1	AIR	-0.208	-0.059	1	577.620	375.052	22.66		252.62	0.24	252.38	00	
19980312						2	577.710	375.013	22.75		252.70	0.24	252.46	00	
19980312						1	784.061	177.754	22.21					00	
19980313	67615	2	AIR	-0.208	-0.059	1	778.074	375.054	22.51		504.96	0.30	504.66	00	
19980313						2	778.272	375.025	22.58		505.11	0.30	504.81	00	
19980312						1	783.746	177.760	22.69					00	
19980318	71286	1	AIR	-0.208	-0.059	1	615.232	375.095	22.36		297.30	0.32	296.98	00	
19980318						2	615.356	375.040	22.45		297.42	0.32	297.10	00	
19980317						1	789.667	177.788	22.31					00	
19980318	71370	1	AIR	-0.208	-0.059	1	700.466	375.076	22.57		407.28	0.31	406.97	00	HG CONTACTED POINTER PREMATURELY
19980318						2	700.584	375.030	22.63		407.40	0.31	407.09	00	
19980318						1	783.234	177.792	22.40					00	
19980319	71251	2	AIR	-0.208	-0.059	1	546.010	375.035	22.51		213.87	0.34	213.53	00	
19980319						2	546.049	375.062	22.57		213.84	0.34	213.50	00	
19980318						1	783.144	177.759	22.60					00	
19980319	66696	2	AIR	-0.208	-0.059	1	664.000	375.062	22.61		360.96	0.31	360.65	00	HG JUMPED INTO CONTACT PREMATURELY
19980319						2	664.097	375.042	22.66		361.04	0.31	360.73	00	
19980319						1	784.415	177.791	22.54					00	
19980401	71341	1	AIR	-0.208	-0.059	1	633.112	375.074	22.35		322.55	0.31	322.24	0F	
19980401						2	633.410	375.032	22.42		322.90	0.31	322.59	00	
19980331						1	784.235	177.783	22.45					00	
19980402	71308	1	AIR	-0.208	-0.059	1	676.298	375.052	22.12		376.99	0.32	376.67	00	
19980402						2	676.566	375.078	22.38		376.95	0.32	376.63	00	
19980401						1	784.167	177.814	22.38					00	
19980402	71479	2	AIR	-0.208	-0.059	1	739.458	375.060	22.57		455.02	0.30	454.72	0F	
19980402						2	739.626	374.984	22.62		455.25	0.30	454.95	0F	
19980402						1	784.445	177.812	22.19					0F	
19980403	34819	2	AIR	-0.208	-0.059	1	579.006	375.056	21.94		252.78	0.24	252.54	00	
19980403						2	579.136	375.060	22.13		252.77	0.24	252.53	00	
19980402						1	790.190	177.722	22.59					00	
19980414	66625	1	AIR	-0.208	-0.059	1	653.740	375.059	22.39		345.25	0.29	344.96	00	
19980414						2	653.934	375.044	22.46		345.43	0.29	345.14	00	
19980414						1	788.853	177.752	22.07					00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	Mercury Column Data for CO2 & Total Gas Vols.	Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19980414	66638	1	AIR	-0.208	-0.059	1	647.300	375.024	22.45		339.21	0.31	338.90	00	
19980414						2	647.406	375.030	22.49		339.29	0.31	338.98	00	
19980414						1	786.060	177.796	22.41					00	
19980415	71370	2	AIR	-0.208	-0.059	1	702.792	375.074	22.16		407.48	0.31	407.17	00	
19980415						2	702.878	375.040	22.28		407.45	0.31	407.14	00	
19980414						1	788.310	177.766	22.47					00	
19980415	71286	2	AIR	-0.208	-0.059	1	614.488	375.045	22.37		297.42	0.32	297.10	00	
19980415						2	614.556	375.060	22.42		297.43	0.32	297.11	00	
19980415						1	787.285	177.716	22.19					00	
19980506	2408	1	N2	-0.208	-0.059	1	533.938	375.110	21.30		197.27			00	
19980506						2	534.006	375.110	21.49		197.22			00	
19980505						1	787.356	177.804	21.33					00	
19980506	35316	1	N2	-0.208	-0.059	1	754.684	375.009	22.04		473.49			00	
19980506						2	754.960	375.086	22.17		473.51			00	
19980506						1	784.756	177.808	21.38					00	
19980507	66638	2	AIR	-0.208	-0.059	1	647.770	375.116	21.52		339.24	0.31	338.93	00	
19980507						2	647.962	375.070	21.72		339.29	0.31	338.98	00	
19980506						1	787.965	177.789	21.99					00	
19980507	71308	2	AIR	-0.208	-0.059	1	677.990	375.088	21.97		376.93	0.32	376.61	00	
19980507						2	678.161	375.079	22.08		377.00	0.32	376.68	00	HG CONTACTED POINTER PREMATURELY
19980507						1	786.200	177.792	21.59					00	
19980508	4274	1	N2	-0.208	-0.059	1	571.226	375.132	21.61		243.67			00	
19980508						2	571.332	375.099	21.76		243.71			00	
19980507						1	788.124	177.784	22.00					00	
19980707	35299	1	N2	-0.208	-0.059	1	709.898	375.176	22.29		415.66			00	
19980707						2	710.022	375.118	22.35		415.80			00	
19980707						1	786.759	177.861	21.45					00	
19980708	7366	1	N2	-0.208	-0.059	1	597.113	375.141	21.91		276.94			00	
19980708						2	597.280	375.108	22.02		277.08			00	
19980707						1	785.933	177.826	22.32					00	
19980709	71341	2	AIR	-0.208	-0.059	1	633.570	375.147	21.58		322.77	0.31	322.46	00	
19980709						2	633.836	375.126	21.73		322.96	0.31	322.65	00	
19980708						1	785.361	177.829	21.95					00	
19980709	66625	2	AIR	-0.208	-0.059	1	651.762	375.138	22.25		345.43	0.29	345.14	00	
19980709						2	651.912	375.119	22.36		345.51	0.29	345.22	00	
19980709						1	783.482	177.819	21.65					00	
19980710	71479	3	AIR	-0.208	-0.059	1	739.151	375.142	21.70		454.52	0.30	454.22	00	
19980710						2	739.359	375.116	21.87		454.54	0.30	454.24	00	
19980709						1	786.544	177.822	22.27					00	
19980717	7361	3	N2	-0.340	-0.059	1	656.451	375.148	22.28		352.33			00	
19980717						2	656.503	375.116	22.37		352.33			00	
19980717						1	781.371	177.835	21.63					00	
19980804	7361	4	N2	-0.340	-0.059	1	657.898	375.124	22.34		352.39			00	
19980804						2	657.987	375.118	22.41		352.42			00	
19980804						1	785.005	177.857	21.94					00	
19980805	7358	1	N2	-0.340	-0.059	1	654.398	375.116	22.18		349.78			00	
19980805						2	654.476	375.132	22.25		349.77			00	
19980804						1	783.164	177.782	22.37					00	
19980805	7358	2	N2	-0.340	-0.059	1	654.280	375.126	22.37		349.78			00	
19980805						2	654.307	375.096	22.42		349.79			00	
19980805						1	782.172	177.829	22.21					00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	Mercury Column Data for CO2 & Total Gas Vols.	Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19980806	39361	1	N2	-0.340	-0.059	1	676.892	375.136	21.79		376.10			00	
19980806						2	676.986	375.120	21.90		376.09			00	
19980805						1	787.173	177.807	22.39					00	
19980806	39361	2	N2	-0.340	-0.059	1	675.970	375.149	22.11		376.13			00	HG CONTACTED POINTER PREMATURELY
19980806						2	676.034	375.096	22.16		376.21			00	
19980806						1	783.399	177.845	21.85					00	
19980806	4289	3	N2	-0.340	-0.059	1	675.230	375.122	22.27		374.12			00	HG JUMPED INTO CONTACT PREMATURELY
19980806						2	675.390	375.080	22.34		374.28			00	
19980806						1	785.451	177.856	22.12					00	
19980807	4289	4	N2	-0.340	-0.059	1	674.118	375.143	21.81		374.19			00	
19980807						2	674.250	375.126	21.93		374.22			00	
19980806						1	784.367	177.800	22.30					00	
19980812	6071	1	N2	-0.208	-0.059	1	624.263	375.132	22.42		310.95			00	
19980812						2	624.340	375.141	22.46		310.99			00	HG CONTACTED POINTER PREMATURELY
19980811						1	785.763	177.795	22.80					00	
19980812	1540	1	N2	-0.208	-0.059	1	680.619	375.145	22.68		381.22			00	
19980812						2	680.755	375.112	22.81		381.25			00	
19980812						1	784.905	177.926	22.41					00	
19980813	2408	2	N2	-0.208	-0.059	1	533.609	375.132	22.73		197.28			00	
19980813						2	533.596	375.116	22.73		197.28			00	
19980812						1	785.914	177.840	22.72					00	
19980813	35316	2	N2	-0.208	-0.059	1	752.403	375.119	22.59		473.60			00	
19980813						2	752.480	375.104	22.68		473.56			00	
19980813						1	782.587	177.890	22.73					00	
19980819	6078	1	N2	-0.208	-0.059	1	624.270	375.112	22.30		311.27			00	
19980819						2	624.351	375.084	22.40		311.30			00	
19980819						1	783.531	177.870	21.87					00	
19980820	39272	1	N2	-0.208	-0.059	1	664.583	375.106	22.36		361.30			00	
19980820						2	664.590	375.120	22.43		361.20			00	
19980819						1	785.263	177.922	22.33					00	
19980820	4274	2	N2	-0.208	-0.059	1	570.830	375.113	22.58		243.81			00	
19980820						2	570.852	375.070	22.58		243.89			00	
19980820						1	785.367	177.837	22.38					00	
19980821	35299	2	N2	-0.208	-0.059	1	707.874	375.116	22.31		415.93			00	
19989821						2	707.832	375.126	22.37		415.77			00	
19980820						1	785.216	177.880	22.58					00	
19980908	4296	1	N2	-0.208	-0.059	1	633.638	375.120	22.39		320.98			00	
19980908						2	633.823	375.130	22.50		321.07			00	
19980908						1	787.891	177.847	22.23					00	
19980909	39256	1	N2	-0.208	-0.059	1	650.660	375.120	22.35		346.44			00	
19980909						2	650.790	375.114	22.46		346.47			00	
19980908						1	780.945	177.890	22.43					00	
19980909	7366	2	N2	-0.208	-0.059	1	597.308	375.114	22.90		277.06			00	
19980909						2	597.366	375.100	22.91		277.14			00	HG CONTACTED POINTER PREMATURELY
19980909						1	784.305	177.844	22.39					00	
19980910	1540	2	N2	-0.208	-0.059	1	678.128	375.103	22.63		381.23			00	
19980910						2	678.213	375.101	22.68		381.27			00	
19980909						1	781.105	177.842	22.91					00	
19981020	2399	1	N2	-0.208	-0.059	1	634.160	375.076	22.42		324.38			00	
19981020						2	634.330	375.060	22.48		324.55			00	
19981019						1	782.587	177.829	22.16					00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	Mercury Column Data for CO2 & Total Gas Vols.	Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19981020	39239	1	N2	-0.208	-0.059	1	640.351	375.070	22.55		333.35			00	HG CONTACTED POINTER PREMATURELY
19981020						2	640.330	375.046	22.59		333.31			00	
19981020						1	780.780	177.832	22.45					00	
19981021	6071	2	N2	-0.208	-0.059	1	623.027	375.086	22.19		310.95			00	
19981021						2	623.169	375.054	22.29		311.06			00	HG CONTACTED POINTER PREMATURELY
19981020						1	782.820	177.779	22.56					00	
19981021	39272	2	N2	-0.208	-0.059	1	663.368	375.070	22.32		361.22			00	HG CONTACTED POINTER PREMATURELY
19981021						2	663.382	375.042	22.39		361.18			00	
19981021						1	782.632	177.769	22.23					00	
19981022	6078	2	N2	-0.208	-0.059	1	624.683	375.060	22.04		311.42			00	
19981022						2	624.717	375.079	22.13		311.34			00	
19981021						1	785.881	177.773	22.35					00	
19981105	4296	2	N2	-0.208	-0.059	1	633.216	375.086	22.39		320.98			00	
19981105						2	633.361	375.060	22.44		321.14			00	HG CONTACTED POINTER PREMATURELY
19981105						1	786.987	177.817	22.25					00	
19981105	39256	2	N2	-0.208	-0.059	1	651.918	375.047	22.43		346.45			00	
19981105						2	651.924	375.025	22.52		346.37			00	
19981105						1	783.585	177.824	22.42					00	
19981106	2399	2	N2	-0.208	-0.059	1	635.519	375.062	22.16		324.46			00	
19981106						2	635.526	375.022	22.25		324.42			00	
19981105						1	786.839	177.780	22.47					00	
19981106	39239	2	N2	-0.208	-0.059	1	642.070	375.060	22.45		333.12			00	
19981106						2	642.172	375.040	22.49		333.23			00	
19981106						1	784.770	177.792	22.20					00	
19981216	62814	1	AIR	-0.219	-0.041	1	715.150	374.994	22.78		425.02	0.31	424.71	00	HG JUMPED INTO CONTACT PREMATURELY
19981216						2	715.517	374.948	22.80		425.51	0.31	425.20	00	
19981216						1	783.863	177.736	22.42					00	
19981217	62814	2	AIR	-0.219	-0.041	1	717.465	374.988	22.74		425.47	0.31	425.16	00	
19981217						2	717.498	374.946	22.82		425.44	0.31	425.13	00	
19981216						1	788.206	177.704	22.78					00	
19981217	62817	1	AIR	-0.219	-0.041	1	668.750	374.990	22.95		366.23	0.28	365.95	00	HG JUMPED INTO CONTACT PREMATURELY
19981217						2	668.842	374.964	23.00		366.32	0.28	366.04	00	
19981217						1	785.375	177.742	22.78					00	
19981217	62817	2	AIR	-0.219	-0.041	1	669.203	374.982	23.07		366.25	0.28	365.97	00	
19981217						2	669.286	374.970	23.11		366.31	0.28	366.03	00	
19981217						1	786.386	177.692	22.96					00	
19990128	39354	1	N2	-0.340	-0.043	1	662.075	374.993	22.20		353.48			00	HG CONTACTED POINTER PREMATURELY
19990128						2	662.237	374.922	22.30		353.64			00	
19990128						1	792.251	177.718	21.81					00	
19990129	39354	2	N2	-0.340	-0.043	1	660.028	374.939	21.57		353.78			00	
19990129						2	660.289	374.951	21.76		353.84			00	HG CONTACTED POINTER PREMATURELY
19990128						1	789.844	177.760	22.25					00	
19990129	10067	1	N2	-0.340	-0.043	1	678.662	374.936	22.22		377.18			00	
19990129						2	678.620	374.868	22.31		377.09			00	
19990129						1	786.709	177.712	21.64					00	
19990129	10067	2	N2	-0.340	-0.043	1	680.460	374.926	22.44		377.26			00	
19990201						2	680.194	374.976	22.27		377.10			00	
19990129						1	791.060	177.672	22.26					00	
19990224	39361	1	N2	-0.340	-0.043	1	679.715	374.955	23.18		376.25			00	
19990224						2	679.590	374.949	23.18		376.10			00	
19990223						1	790.334	177.659	22.64					00	

				Meniscus Corr.		Mercury Column Data for CO2 & Total Gas Vols.				Volume Ratio: 5014.9 cc/3.7974 cc				
Date	Cyl. No.	Run No.	Gas Type	CO2 (mm)	GAS (mm)		Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19990225	39361	2	N2	-0.340	-0.043	1	677.522	374.978	22.75		376.38			00	
19990225						2	677.522	375.005	22.83		376.23			00	
19990224						1	787.763	177.650	23.18					00	
19990225	7358	1	N2	-0.340	-0.043	1	655.916	375.001	23.06		349.71			00	
19990225						2	655.860	374.978	23.06		349.67			00	
19990225						1	785.671	177.682	22.77					00	
19990226	7358	2	N2	-0.340	-0.043	1	657.298	374.953	22.50		349.82			00	
19990226						2	657.424	374.932	22.66		349.80			00	
19990225						1	790.439	177.679	23.06					00	
19990302	66556	1	AIR	-0.267	-0.012	1	457.190	375.048	22.99		101.49	0.37	101.12	00	HG CONTACTED POINTER PREMATURELY
19990302						2	457.114	374.976	23.06		101.46	0.37	101.09	00	
19990302						1	788.545	177.710	22.90					00	
19990303	66556	2	AIR	-0.267	-0.012	1	456.577	375.002	22.55		101.49	0.37	101.12	00	
19990303						2	456.506	374.957	22.64		101.43	0.37	101.06	00	
19990302						1	785.513	177.672	23.03					00	
19990303	110	1	AIR	-0.267	-0.012	1	573.680	375.004	22.79		247.13	0.29	246.84	00	
19990303						2	573.641	374.988	22.82		247.07	0.29	246.78	00	
19990303						1	785.795	177.668	22.57					00	
19990304	110	2	AIR	-0.267	-0.012	1	573.514	374.991	22.32		247.07	0.29	246.78	00	
19990304						2	573.516	374.973	22.40		247.03	0.29	246.74	00	
19990303						1	786.956	177.666	22.79					00	
19990304	111	1	AIR	-0.267	-0.012	1	635.110	374.990	22.54		324.59	0.29	324.30	00	HG CONTACTED POINTER PREMATURELY
19990304						2	635.091	374.964	22.60		324.53	0.29	324.24	00	
19990304						1	784.386	177.658	22.36					00	
19990305	111	2	AIR	-0.267	-0.012	1	636.070	374.978	22.45		324.59	0.29	324.30	00	
19990305						2	636.098	374.983	22.52		324.53	0.29	324.24	00	
19990304						1	787.308	177.675	22.56					00	
19990310	103	1	AIR	-0.267	-0.012	1	656.196	374.950	22.43		349.08	0.31	348.77	0F	EXTRACTION BLUNDER
19990310						2	656.186	374.960	22.46		349.02	0.31	348.71	0F	HG JUMPED INTO CONTACT PREMATURELY
19990309						1	788.325	177.670	22.50					0F	EXTRACTION BLUNDER
19990310	103	2	AIR	-0.267	-0.012	1	659.141	374.980	22.42		353.48	0.31	353.17	00	HG JUMPED INTO CONTACT PREMATURELY
19990310						2	659.222	374.950	22.48		353.54	0.31	353.23	00	HG JUMPED INTO CONTACT PREMATURELY
19990310						1	786.830	177.609	22.44					00	
19990311	139	1	AIR	-0.267	-0.012	1	666.430	374.963	22.26		361.56	0.31	361.25	00	
19990311						2	666.481	374.952	22.33		361.55	0.31	361.24	00	
19990310						1	788.959	177.657	22.44					00	
19990311	139	2	AIR	-0.267	-0.012	1	665.551	374.938	22.56		361.37	0.31	361.06	00	
19990311						2	665.682	374.955	22.64		361.41	0.31	361.10	00	
19990311						1	786.534	177.686	22.29					00	
19990316	107	1	AIR	-0.267	-0.012	1	739.829	374.978	22.56		453.71	0.31	453.40	00	HG JUMPED INTO CONTACT PREMATURELY
19990316						2	739.871	374.924	22.59		453.78	0.31	453.47	00	
19990316						1	787.600	177.692	22.60					00	
19990317	107	2	AIR	-0.267	-0.012	1	738.844	374.950	22.53		453.96	0.31	453.65	00	
19990317						2	738.901	374.926	22.60		453.95	0.31	453.64	00	
19990316						1	785.674	177.702	22.57					00	
19990317	103	3	AIR	-0.267	-0.012	1	658.619	374.932	22.81		353.10	0.31	352.79	00	
19990317						2	658.722	374.930	22.84		353.19	0.31	352.88	00	
19990317						1	785.993	177.730	22.56					00	
19990318	101	1	AIR	-0.267	-0.012	1	693.786	374.976	22.52		396.61	0.31	396.30	00	HG CONTACTED POINTER PREMATURELY
19990318						2	693.929	374.950	22.61		396.69	0.31	396.38	00	
19990317						1	787.716	177.732	22.82					00	

Date	Cyl. No.	Run No.	Gas Type	Meniscus Corr. CO2 (mm)	Meniscus Corr. GAS (mm)	Mercury Column Data for CO2 & Total Gas Vols.	Vac.Col. (mm)	Samp.Col. (mm)	T (deg.C)	OxyFr	Volume Ratio: 5014.9 cc/3.7974 cc CO2 Conc. (ppm)	N2O Conc. (ppm)	CO2-N2O Conc. (ppm)	Flg	Comments
19990318	101	2	AIR	-0.267	-0.012	1	695.896	374.946	22.72		396.85	0.31	396.54	00	
19990318						2	695.925	374.932	22.76		396.85	0.31	396.54	00	
19990318						1	790.427	177.737	22.55					00	
19990324	136	1	AIR	-0.267	-0.012	1	686.102	374.978	22.94		382.08	0.31	381.77	00	
19990324						2	686.154	374.960	22.92		382.20	0.31	381.89	00	
19990324						1	793.956	177.700	22.51					00	
19990325	136	2	AIR	-0.267	-0.012	1	680.973	374.962	22.59		382.09	0.31	381.78	00	
19990325						2	681.000	374.944	22.68		382.02	0.31	381.71	00	
19990324						1	785.450	177.694	22.93					00	
19990325	105	1	AIR	-0.267	-0.012	1	672.184	374.964	22.75		369.80	0.31	369.49	00	
19990325						2	672.274	374.934	22.76		369.94	0.31	369.63	00	
19990325						1	786.580	177.672	22.65					00	
19990326	105	2	AIR	-0.267	-0.012	1	671.716	374.962	22.22		370.30	0.31	369.99	00	
19990326						2	671.790	374.950	22.30		370.30	0.31	369.99	00	
19990325						1	786.219	177.713	22.75					00	
19990330	103	4	AIR	-0.267	-0.012	1	666.882	374.973	22.99		353.80	0.31	353.49	00	
19990330						2	666.864	374.952	22.99		353.80	0.31	353.49	00	
19990329						1	802.089	177.584	22.65					00	
19990331	105	3	AIR	-0.267	-0.012	1	667.050	374.998	22.68		363.73	0.31	363.42	0F	HG JUMPED INTO CONTACT PREMATURELY
19990331						2	667.227	374.970	22.68		363.99	0.31	363.68	0F	EXTRACTION BLUNDER
19990331						3	667.330	374.950	22.71		364.10	0.31	363.79	0F	EXTRACTION BLUNDER
19990330						1	786.906	177.742	22.99					0F	EXTRACTION BLUNDER
19990413	105	4	AIR	-0.267	-0.012	1	674.341	374.942	22.66		370.28	0.31	369.97	00	
19990413						2	674.135	374.912	22.73		369.97	0.31	369.66	00	
19990413						1	789.605	177.650	22.27					00	
19990414	35355	1	N2	-0.340	-0.012	1	663.218	375.034	22.95		353.98			00	
19990414						2	663.083	375.009	22.90		353.90			00	
19990413						1	794.077	177.772	22.70					00	
19990414	35355	2	N2	-0.340	-0.012	1	661.627	375.048	22.65		354.04			00	HG CONTACTED POINTER PREMATURELY
19990414						2	661.541	375.000	22.67		353.97			00	
19990414						1	791.770	177.862	22.93					00	
19990415	39354	3	N2	-0.340	-0.012	1	659.336	375.036	22.55		353.73			00	
19990415						2	659.305	375.004	22.56		353.72			00	
19990414						1	786.889	177.726	22.65					00	
19990415	39354	4	N2	-0.340	-0.012	1	660.574	375.022	22.60		353.88			00	
19990415						2	660.510	375.011	22.62		353.79			00	
19990415						1	789.031	177.772	22.55					00	

Appendix A2. Calculation of s_i from Replicate Manometric Measurements of Primary Reference Gas Standards, 1985 – 1999. **Page 1**

Measurements on the mercury manometer of the CO_2 mole fraction in reference gases were always made in replicate, usually in duplicate. Individual measurements (determinations) of the CO_2 fraction on the small manometer were usually made in duplicate. After the first measurement had been completed, the mercury was lowered, then raised, and the temperature allowed to re-equilibrate for at least 15 minutes, before a second measurement was made. Occasionally, a third determination was made, usually when one of the first two was doubtful. Also, there were a few instances when the measurement of the total gas fraction on the large manometer was repeated. Each gas was also analyzed at least twice during a year's set of calibrations. Each analysis (run) consists normally of a total gas fraction measurement of a discrete sample from the cylinder of reference gas and a replicate pair of measurements of the CO_2 gas fraction. Thus for each gas there are two sets of replicates, one of determinations or individual measurements of the CO_2 fraction on the small manometer combined with a total gas fraction measurement, and another of runs, or independent calibrations of the reference gas.

An estimate of the precision of measurement can be made by calculating the sample standard deviation of a single measurement in a set of replicate measurements. The following general equation is used

$$S_i = \sqrt{\frac{1}{N-k}\sum_k \sum_i (X_i - \overline{X}_i)^2}$$

where there are N total determinations of k subgroups (in our case, the subgroups are individual runs or gases). When all of the replicate determinations are in fact duplicates, the equation simplifies to the following

$$S_i = \sqrt{\frac{\sum_i \Delta_i^2}{2n}}$$

for a set of n duplicates, with individual differences Δ_i.

Replicate standard deviations were calculated for the individual determinations, affording an estimate of the precision of an individual manometric measurement, and for the run data, affording an estimate of the precision of an entire manometric calibration of a reference gas. Further, calculations were made separately for the two sets of primary reference gas standards, the N_2 standards and the natural-air standards, for each of the five years during which these standards were analyzed, from 1985 until 1999.

Data were rejected from consideration according to a "3 sigma" criterion: in particular, a delta (difference between replicates) was rejected if it was more than three times the standard deviation calculated with the entire set of data. If one of a pair of determinations agreed with both determinations of its paired run, then the outlier determination only was rejected for the calculation of the average for that gas and for the run statistics calculations. The following table summarizes these calculations and the notes below give details of rejection of data (see Table 9.1, on which the rejected data are flagged).

Appendix A2. Calculation of s_i from Replicate Manometric Measurements of Primary Reference Gas Standards, 1985 – 1999. **Page 2**

Replicate Precision of Manometric Reference Gas Measurements, 1985-1999

Year	No. of Gases		Replicate Determination Data				Replicate Run Data					
	Air	N_2	Air		N_2		Air		N_2		All Gases	
			No. of Det'ns	s_i	No. of Det'ns	s_i	No. of Runs	S_i	No. of Runs	s_i	No. of Runs	s_i
1985	12	11	52	.032	48	.048	24	.067[1]	24	.065	48	.066
1990	12	11	50	.072[2]	48	.046[3]	24	.033[2]	25	.063	49	.050
1993	11	14	46	.073	56	.070[4]	22	.050[5]	29	.072	51	.063
1995	11		42	.044[6]			22	.057[7]			22	.057
1998-99	12	13	44	.066[8]	52	.063	24	.049[9]	26	.061	50	.056

Notes

1. 1985 Air. Two runs were rejected: <71308>-1 and <71308>-3. The latter was 0.24 different from <71308>-2, just on the borderline of 3s. Accepted were <71308>-2 and <71308>-4. [1a. 1985 N_2. One determination delta was slightly > 3s, but was not rejected.]
2. 1990 N_2. One determination, <39272>-1(1), was rejected by 3s criterion. Another determination slightly >3s was not rejected.
3. 1990 Air. One run, <66696>-2, was rejected by 3s criterion. A third run, <66696>-3 was made and included in statistics.
4. 1993 N_2. One determination, <35299>-1(1), was rejected by 3s criterion.
5. 1993 Air. One run, <66625>-2, was rejected. A third run, <66625>-3 was made and included in statistics. [5a. 1993 Air. Two deltas of determinations were slightly >3s, but were not rejected.]
6. 1995 Air. Two determinations were rejected, <71479>-2(1) and <67615>-1(1). The former was >3s, but the latter was slightly <3s, although >3s of the entire manometric reference gas data set in 1995.
7. 1995 Air. In addition to determinations in Note 6, one run, <34819>-2, was rejected for >3s. A third run, <34819>-3, was made in early 1996 and included in average and statistics.
8. 1998-99 Air. Two determinations were rejected, <71341>-1(1) and <67615>-1(1), because both had deltas well >3s. Although the delta for the determinations of <71479>-2, was < 3s, it was also rejected from statistics calculation (see 9).
9. 1998-99 Air. One run, <71479>-2, was rejected by 3s criterion. A third run, <71479>-3, was made and included in statistics.

APPENDIX A3. VOLUME CALIBRATIONS OF SMALL MANOMETER: ORIGINAL DATA

Mercury column data are listed for all measurements comprising volume calibrations of the small manometer between June 1974 and January 1999. All measurements were made by Peter Guenther. Notes on the columns in the table follow.

Date — Date of the measurement, in YYYYMMDD.

Exp. No. — Consecutive experiment number during a volume-calibration period. The missing experiment in 1974 (No. 5) was not a volume calibration.

Plenum/ Chamber — Identification of the line of data as a plenum fill (P - No.) or as a measurement in an indicated chamber of the manometer. In addition to the 4 cc chamber, volume calibration measurements were also made in the 64 cc and 250 cc chambers in 1990 and 1993-94.

Plenum Volume — Volume of the indicated plenum, in cc. The volumes of plenum numbers P-3 and P-7 used in the 1974 calibration [Guenther, 1981] were .0001 cc different from the final values shown here. The 1974 results shown in Keeling et al. [1986] also used the preliminary 1974 volumes for these two plenums. Use of the final volumes in the 1974 calculation leads to an average volume of 3.7975 cc, instead of 3.7974 cc.

Mercury Column Data... — For each experiment the first line lists the observed data for the filling of the plenum with CO2 gas: the uncorrected barometer reading in the column headed Vac. Col., followed by the barometer correction (if any). The sample column reading is zero in this case. The temperature in the Hg column is that of the barometer mercury column, in the Plen. column that of the water bath in which the plenum was immersed. The manometric data in the lines following are the observed vacuum and sample column heights, followed by the temperature observed on a mercury thermometer near the 4 cc chamber.

Meniscus Corr. — Correction applied to the manometric mercury-column measurements to account for differing sizes of the glass tubing on the vacuum and sample columns and for non-level swing of the cathetometer telescope. Measured meniscus corrections, as indicated, were applied for all calibrations of the 4 cc chamber. The calibrations of the 64 cc and 250 cc chambers in 1990 and 1993 used a nominal meniscus correction of 0.000 mm.

Plenum Moles — Number of moles of CO2 gas contained in the plenum and transferred into the manometric chamber, calculated from the barometer data, filling temperature, and plenum volume, using the virial equation of state.

V/N — Specific molar volume calculated from the manometric mercury column data, using the virial equation of state.

Manometric Chamber Volume	**Number of moles in the plenum multiplied by the specific molar volume calculated for each manometric measurement.**
Mano Run Comment	**Comment indicating how well the pointer in the manometer chamber was approached for a reproducible measurement. XLNT indicates an optimum approach as described in Guenther and Keeling [1981]. VERY GOOD indicates a somewhat less than optimum approach, e.g. greater than .200 mm between vacuum column readings. OK indicates that the mercury in the sample column made contact with the pointer while the first vacuum column reading was being made. FAIR indicates a premature contact with the point, prior to the vacuum column measurement.**

Date	Exp. No.	Plenum/ Chamber	Plenum Volume (cc)	Mercury Column Data for Barometer and Manometer Chamber Measurements: Vac.Col. (mm)	Barom. Corr. (mm)	Samp.Col. (mm)	Temp.(deg.C) Hg	Temp.(deg.C) Plen. Manometer	Meniscus Corr. (mm)	Plenum Moles (*E+05)	V/N (cc/mol)	Mano. Chamber Volume Indiv. (cc)	Mano. Chamber Volume Average (cc)	Mano.Run Comment
19740620	1	P-7	2.2733	761.4			20.8	20.78		9.44623				
19740621		4cc		827.298		370.618		20.54	-0.366		40206.4	3.79799	3.79840	OK
19740621		4cc		826.917		370.566		20.40	-0.366		40215.1	3.79881		OK
19740620	2	P-1	1.2978	761.4			20.8	20.78		5.39274				
19740621		4cc		631.725		370.605		20.28	-0.366		70390.4	3.79597	3.79588	OK
19740621		4cc		631.515		370.580		20.07	-0.366		70387.0	3.79579		OK
19740626	3	P-1	1.2978	760.8			20.5	20.75		5.38932				
19740626		4cc		631.522		370.838		19.76	-0.366		70376.1	3.79280	3.79273	OK
19740626		4cc		631.485		370.820		19.73	-0.366		70373.6	3.79266		FAIR
19740626	4	P-7	2.2733	760.8			20.5	20.75		9.44024				
19740627		4cc		826.306		370.820		19.97	-0.366		40229.0	3.79771	3.79819	OK
19740627		4cc		826.096		370.792		19.90	-0.366		40234.9	3.79827		OK
19740628		4cc		826.475		370.830		20.13	-0.366		40238.3	3.79859		OK
19740709	6	P-7	2.2733	763.8			20.7	20.77		9.47666				
19740709		4cc		827.928		370.798		20.87	-0.366		40214.7	3.81101	3.81078	XLNT
19740709		4cc		827.923		370.804		20.83	-0.366		40209.8	3.81055		XLNT
19740709	7	P-1	1.2978	763.8			20.7	20.77		5.41011				
19740710		4cc		633.268		370.806		20.91	-0.366		70188.6	3.79728	3.79711	OK
19740710		4cc		633.304		370.818		20.91	-0.366		70182.1	3.79693		VERY GOOD
19740729	8	P-7	2.2733	761.7			21.2	20.75		9.45026				
19740729		4cc		826.286		370.798		19.60	-0.366		40174.8	3.79662	3.79662	VERY GOOD
19740729	9	P-1	1.2978	761.7			21.2	20.75		5.39504				
19740730		4cc		630.979		370.822		19.28	-0.366		70396.8	3.79793	3.79755	OK
19740730		4cc		630.953		370.818		19.20	-0.366		70382.3	3.79716		OK
19740730	10	P-1	1.2978	763.4			20.4	20.75		5.40794				
19740730		4cc		631.683		370.800		19.39	-0.366		70228.2	3.79790	3.79790	OK
19740730		4cc		631.513		370.800		19.31	-0.366		70253.8	3.79928*		OK
19740730	11	P-7	2.2733	763.4			20.4	20.75		9.47285				
19740730		4cc		826.460		370.788		19.06	-0.366		40079.7	3.79669	3.79701	XLNT
19740730		4cc		826.322		370.791		19.02	-0.366		40086.4	3.79732		OK

				Mercury Column Data for Barometer and Manometer Chamber Measurements										
							Temp.(deg.C)					Mano. Chamber Volume		
Date	Exp. No.	Plenum/ Chamber	Plenum Volume (cc)	Vac.Col. (mm)	Barom. Corr. (mm)	Samp.Col. (mm)	Hg Manometer	Plen.	Meniscus Corr. (mm)	Plenum Moles (*E+05)	V/N (cc/mol)	Indiv. (cc)	Average (cc)	Mano.Run Comment
19740801	12	P-7	2.2733	763.1			20.2	20.77		9.46880				
19740801		4cc		827.544		371.094		19.73	-0.366		40108.7	3.79781	3.79758	XLNT
19740801		4cc		827.421		371.064		19.64	-0.366		40103.8	3.79735		XLNT
19740801	13	P-1	1.2978	763.1			20.2	20.77		5.40562				
19740801		4cc		631.828		371.018		19.47	-0.366		70268.3	3.79844	3.79815	VERY GOOD
19740802		4cc		631.954		371.058		19.52	-0.366		70257.7	3.79787		VERY GOOD
19740807	14	P-3	1.6360	760.8			20.3	20.75		6.79400				
19740807		4cc		699.303		371.073		19.96	-0.366		55891.3	3.79725	3.79734	XLNT
19740807		4cc		699.182		371.074		19.87	-0.366		55893.9	3.79743		XLNT
19740807	15	P-5	1.8359	760.8			20.3	20.75		7.62415				
19740808		4cc		738.966		371.084		19.72	-0.366		49803.9	3.79712	3.79746	VERY GOOD
19740808		4cc		738.667		371.076		19.55	-0.366		49812.7	3.79779		FAIR
19740807	16	P-4	1.7457	760.8			20.3	20.75		7.24956				
19740808		4cc		719.972		371.044		19.03	-0.366		52387.8	3.79789	3.79796	OK
19740808		4cc		719.888		371.036		18.98	-0.366		52389.7	3.79803		GOOD
19740807	17	P-1	1.2978	760.8			20.3	20.75		5.38952				
19740809		4cc		631.340		371.070		19.60	-0.366		70447.7	3.79679	3.79725	FAIR
19740809		4cc		631.257		371.060		19.59	-0.366		70464.9	3.79772		OK

Date	Exp. No.	Plenum/ Chamber	Plenum Volume (cc)	Mercury Column Data for Barometer and Manometer Chamber Measurements: Vac.Col. (mm)	Barom. Corr. (mm)	Samp.Col. (mm)	Temp.(deg.C) Hg Manometer	Temp.(deg.C) Plen.	Meniscus Corr. (mm)	Plenum Moles (*E+05)	V/N (cc/mol)	Mano. Chamber Volume Indiv. (cc)	Mano. Chamber Volume Average (cc)	Mano.Run Comment
19851024	1	P-1	1.2978	765.3	-0.2		21.5	21.86		5.39821				
19851024		4cc		637.122		374.874	21.20		-0.340		70312.4	3.79562	3.79539	XLNT
19851024		4cc		637.252		374.860	21.32		-0.340		70304.1	3.79517		XLNT
19851024	2	P-7	2.2733	765.3	-0.2		21.5	21.86		9.45582				
19851024		4cc		833.848		374.860	21.54		-0.340		40146.1	3.79614	3.79588	XLNT
19851024		4cc		834.170		374.872	21.69		-0.340		40140.6	3.79562		XLNT
19851024	3	P-1	1.2978	763.2	-0.2		21.3	21.86		5.38352				
19851025		4cc		637.272		374.885	21.98		-0.340		70472.4	3.79389	3.79389	VERY GOOD
19851025		4cc		637.292		374.886	22.00		-0.340		70472.3	3.79389		XLNT
19851024	4	P-7	2.2733	763.2	-0.2		21.3	21.86		9.43007				
19851025		4cc		833.337		374.894	21.98		-0.340		40257.8	3.79634	3.79625	XLNT
19851025		4cc		833.336		374.886	21.97		-0.340		40255.8	3.79615		VERY GOOD
19851030	5	P-1	1.2978	764.4	-0.2		21.2	21.96		5.39027				
19851030		4cc		636.956		374.903	21.38		-0.340		70410.5	3.79531	3.79518	XLNT
19851030		4cc		637.071		374.906	21.48		-0.340		70405.6	3.79505		XLNT
19851030	6	P-3	1.6360	764.4	-0.2		21.2	21.96		6.79494				
19851030		4cc		705.414		374.887	21.74		-0.340		55854.8	3.79530	3.79538	VERY GOOD
19851030		4cc		705.606		374.914	21.89		-0.340		55857.0	3.79545		XLNT
19851030	7	P-4	1.7457	764.4	-0.2		21.2	21.96		7.25057				
19851031		4cc		727.812		374.910	22.16		-0.340		52381.0	3.79793	3.79780	XLNT
19851031		4cc		727.800		374.887	22.15		-0.340		52377.5	3.79767		XLNT
19851030	8	P-5	1.8359	764.4	-0.2		21.2	21.96		7.62521				
19851031		4cc		745.868		374.884	22.13		-0.340		49814.1	3.79843	3.79858	XLNT
19851031		4cc		745.880		374.886	22.16		-0.340		49818.1	3.79873		XLNT
19851030	9	P-7	2.2733	764.4	-0.2		21.2	21.96		9.44190				
19851031		4cc		834.332		374.872	22.20		-0.340		40200.2	3.79567	3.79576	XLNT
19851031		4cc		834.346		374.892	22.21		-0.340		40202.2	3.79585		XLNT

Date	Exp. No.	Plenum/ Chamber	Plenum Volume (cc)	Mercury Column Data for Barometer and Manometer Chamber Measurements: Vac.Col. (mm)	Barom. Corr. (mm)	Samp.Col. (mm)	Temp.(deg.C) Hg	Temp.(deg.C) Plen. Manometer	Meniscus Corr. (mm)	Plenum Moles (*E+05)	V/N (cc/mol)	Mano. Chamber Volume Indiv. (cc)	Mano. Chamber Volume Average (cc)	Mano.Run Comment
19860121	10	P-1	1.2978	764.5	-0.2		20.7	21.96		5.39147				
19860121		4cc		636.946		374.830		21.38	-0.340		70393.5	3.79525	3.79531	XLNT
19860121		4cc		637.048		374.847		21.48	-0.340		70396.0	3.79538		XLNT
19860121	11	P-2	1.4619	764.5	-0.2		20.7	21.96		6.07319				
19860122		4cc		670.337		374.854		21.68	-0.340		62488.3	3.79504	3.79467	XLNT
19860122		4cc		670.418		374.846		21.71	-0.340		62476.2	3.79430		XLNT
19860121	12	P-3	1.6360	764.5	-0.2		20.7	21.96		6.79646				
19860122		4cc		705.354		374.848		21.73	-0.340		55856.3	3.79625	3.79612	XLNT
19860122		4cc		705.400		374.824		21.77	-0.340		55852.5	3.79599		XLNT
19860121	13	P-6	2.0367	764.5	-0.2		20.7	21.96		8.46109				
19860122		4cc		786.092		374.866		21.78	-0.340		44866.3	3.79618	3.79610	XLNT
19860122		4cc		786.106		374.834		21.80	-0.340		44864.5	3.79603		XLNT
19860121	14	P-7	2.2733	764.5	-0.2		20.7	21.96		9.44400				
19860123		4cc		833.883		374.858		21.84	-0.340		40186.3	3.79520	3.79526	XLNT
19860123		4cc		833.700		374.856		21.74	-0.340		40187.7	3.79533		VERY GOOD
19860123	15	P-1	1.2978	767.4	-0.2		21.0	21.96		5.41174				
19860124		4cc		638.445		374.834		21.86	-0.340		70113.9	3.79438	3.79437	XLNT
19860124		4cc		638.440		374.846		21.84	-0.340		70113.4	3.79436		XLNT
19860123	16	P-3	1.6360	767.4	-0.2		21.0	21.96		6.82201				
19860124		4cc		706.632		374.872		21.75	-0.340		55648.5	3.79635	3.79627	XLNT
19860124		4cc		706.596		374.859		21.72	-0.340		55646.4	3.79620		XLNT
19860123	17	P-5	1.8359	767.4	-0.2		21.0	21.96		7.65558				
19860124		4cc		746.440		374.831		21.52	-0.340		49620.9	3.79877	3.79892	XLNT
19860124		4cc		746.436		374.829		21.54	-0.340		49624.8	3.79906		XLNT
19860123	18	P-7	2.2733	767.4	-0.2		21.0	21.96		9.47951				
19860124		4cc		834.976		374.836		21.54	-0.340		40045.2	3.79608	3.79605	XLNT
19860124		4cc		834.988		374.824		21.55	-0.340		40044.5	3.79602		OK
19860123	19	P-4	1.7457	767.4	-0.2		21.0	21.96		7.27945				
19860127		4cc		727.628		374.836		21.13	-0.340		52203.5	3.80013	3.80013	FAIR

Date	Exp. No.	Plenum/ Chamber	Plenum Volume (cc)	Mercury Column Data for Barometer and Manometer Chamber Measurements: Vac.Col. (mm)	Barom. Corr. (mm)	Samp.Col. (mm)	Temp.(deg.C) Hg	Temp.(deg.C) Plen. Manometer	Meniscus Corr. (mm)	Plenum Moles (*E+05)	V/N (cc/mol)	Mano. Chamber Volume Indiv. (cc)	Mano. Chamber Volume Average (cc)	Mano.Run Comment
19880219	1	P-1	1.2978	766.6	-0.2		21.0	21.87		5.40774				
19880219		4cc		637.473		374.830		21.20	-0.294		70194.0	3.79591	3.79553	FAIR
19880219		4cc		637.585		374.814		21.28	-0.294		70179.9	3.79515		FAIR
19880219	2	P-7	2.2733	766.6	-0.2		21.0	21.87		9.47251				
19880222		4cc		834.938		374.822		21.73	-0.294		40070.7	3.79570	3.79539	XLNT
19880222		4cc		835.898		374.780		22.29	-0.294		40064.1	3.79508		XLNT
19880223	3	P-1	1.2978	764.9	-0.2		21.5	21.87		5.39519				
19880223		4cc		636.999		374.824		21.30	-0.294		70345.0	3.79525	3.79491	OK
19880223		4cc		637.050		374.814		21.35	-0.294		70341.2	3.79504		FAIR
19880223		4cc		637.097		374.791		21.38	-0.294		70330.0	3.79444		VERY GOOD
19880223	4	P-2	1.4619	764.9	-0.2		21.5	21.87		6.07739				
19880224		4cc		669.866		374.814		21.12	-0.294		62444.1	3.79497	3.79523	VERY GOOD
19880224		4cc		669.906		374.820		21.19	-0.294		62452.6	3.79549		XLNT
19880223	5	P-3	1.6360	764.9	-0.2		21.5	21.87		6.80115				
19880224		4cc		704.841		374.828		21.30	-0.294		55845.7	3.79815	3.79733	FAIR
19880224		4cc		705.011		374.772		21.37	-0.294		55821.4	3.79650		XLNT
19880223	6	P-6	2.0367	764.9	-0.2		21.5	21.87		8.46693				
19880224		4cc		785.696		374.813		21.44	-0.294		44843.8	3.79690	3.79665	XLNT
19880224		4cc		785.803		374.777		21.50	-0.294		44837.9	3.79639		XLNT
19880223	7	P-7	2.2733	764.9	-0.2		21.5	21.87		9.45052				
19880225		4cc		833.400		374.835		21.46	-0.294		40167.6	3.79605	3.79613	XLNT
19880225		4cc		833.537		374.826		21.56	-0.294		40169.3	3.79621		XLNT
19880225	8	P-7	2.2733	764.5	-0.2		21.3	21.86		9.44622				
19880225		4cc		833.090		374.822		21.42	-0.294		40187.9	3.79624	3.79595	XLNT
19880225		4cc		833.220		374.800		21.47	-0.294		40181.8	3.79566		XLNT
19880225	9	P-6	2.0367	764.5	-0.2		21.3	21.86		8.46308				
19880225		4cc		785.245		374.796		21.54	-0.294		44907.6	3.80057*	3.79773	FAIR
19880225		4cc		785.558		374.788		21.55	-0.294		44874.0	3.79773		XLNT

Date	Exp. No.	Plenum/ Chamber	Plenum Volume (cc)	Mercury Column Data for Barometer and Manometer Chamber Measurements: Vac.Col. (mm)	Barom. Corr. (mm)	Samp.Col. (mm)	Temp.(deg.C) Hg	Temp.(deg.C) Plen. Manometer	Meniscus Corr. (mm)	Plenum Moles (*E+05)	V/N (cc/mol)	Mano. Chamber Volume Indiv. (cc)	Mano. Chamber Volume Average (cc)	Mano.Run Comment
19880225	10	P-3	1.6360	764.5	-0.2		21.3	21.86		6.79806				
19880226		4cc		704.916		374.816		21.40	-0.294		55851.1	3.79679	3.79667	XLNT
19880226		4cc		704.990		374.822		21.44	-0.294		55847.6	3.79655		XLNT
19880225	11	P-2	1.4619	764.5	-0.2		21.3	21.86		6.07462				
19880226		4cc		670.058		374.824		21.54	-0.294		62499.9	3.79663	3.79665	FAIR
19880226		4cc		670.064		374.800		21.57	-0.294		62500.3	3.79666		XLNT
19880225	12	P-1	1.2978	764.5	-0.2		21.3	21.86		5.39274				
19880226		4cc		637.078		374.795		21.65	-0.294		70404.5	3.79673	3.79637	XLNT
19880226		4cc		637.148		374.796		21.67	-0.294		70391.0	3.79600		XLNT
19880302	13	P-1	1.2978	763.4	-0.2		21.4	21.86		5.38484				
19880302		4cc		635.978		374.843		20.71	-0.294		70476.1	3.79502	3.79496	XLNT
19880302		4cc		636.080		374.842		20.81	-0.294		70473.6	3.79489		XLNT
19880302	14	P-2	1.4619	763.4	-0.2		21.4	21.86		6.06572				
19880302		4cc		669.190		374.832		21.08	-0.294		62582.8	3.79610	3.79571	XLNT
19880302		4cc		669.329		374.838		21.15	-0.294		62570.2	3.79533		OK
19880302	15	P-4	1.7457	763.4	-0.2		21.4	21.86		7.24327				
19880303		4cc		726.209		374.848		21.38	-0.294		52457.2	3.79961	3.79945	VERY GOOD
19880303		4cc		726.314		374.834		21.45	-0.294		52452.6	3.79928		XLNT
19880302	16	P-5	1.8359	763.4	-0.2		21.4	21.86		7.61752				
19880303		4cc		744.208		374.832		21.42	-0.294		49897.7	3.80097	3.80076	XLNT
19880303		4cc		744.376		374.879		21.48	-0.294		49892.1	3.80054		OK
19880302	17	P-7	2.2733	763.4	-0.2		21.4	21.86		9.43239				
19880303		4cc		832.530		374.848		21.45	-0.294		40243.9	3.79596	3.79607	XLNT
19880303		4cc		832.589		374.851		21.50	-0.294		40246.3	3.79618		XLNT

Date	Exp. No.	Plenum/ Chamber	Plenum Volume (cc)	Mercury Column Data for Barometer and Manometer Chamber Measurements: Barom. Vac.Col. (mm)	Barom. Corr. (mm)	Samp.Col. (mm)	Temp.(deg.C) Hg	Temp.(deg.C) Plen. Manometer	Meniscus Corr. (mm)	Plenum Moles (*E+05)	V/N (cc/mol)	Mano. Chamber Volume Indiv. (cc)	Mano. Chamber Volume Average (cc)	Mano.Run Comment
19900208	1	P-1	1.2978	765.5	-0.1		20.5	21.87		5.40114				
19900209		4cc		638.096		375.108		21.73	-0.313		70240.5	3.79379	3.79384	OK
19900209		4cc		638.127		375.090		21.79	-0.313		70242.5	3.79390		FAIR
19900208	2	P-7	2.2733	765.5	-0.1		20.5	21.87		9.46095				
19900209		4cc		834.755		375.054		21.83	-0.313		40123.2	3.79603	3.79524	XLNT
19900209		4cc		835.097		375.088		21.90	-0.313		40106.3	3.79444		FAIR
19900208	3	P-8	51.455	765.5	-0.1		20.5	21.87		214.14379				
19900209		64cc		855.163		232.413		21.84	0.0		29565.6	63.31296	63.31222	VERY GOOD
19900209		64cc		855.408		232.419		21.94	0.0		29564.9	63.31147		XLNT
19900209		250cc		304.780		182.502		22.02	0.0		151191.5	323.76711	323.81812	FAIR
19900209		250cc		304.689		182.432		22.06	0.0		151239.1	323.86913		FAIR
19900212	4	P-1	1.2978	763.5	-0.1		20.2	21.89		5.38688				
19900212		4cc		637.248		375.128		21.58	-0.313		70435.8	3.79429*	3.79750	OK
19900212		4cc		637.097		375.113		21.67	-0.313		70495.3	3.79750		XLNT
19900212	5	P-7	2.2733	763.5	-0.1		20.2	21.89		9.43596				
19900213		4cc		833.224		375.100		21.70	-0.313		40242.9	3.79731	3.79718	XLNT
19900213		4cc		833.423		375.104		21.80	-0.313		40240.3	3.79706		OK
19900212	6	P-8	51.455	763.5	-0.1		20.2	21.89		213.57825				
19900213		64cc		853.540		232.458		21.90	0.0		29651.8	63.32982	63.32728	XLNT
19900213		64cc		853.887		232.442		22.04	0.0		29649.4	63.32474		XLNT
19900213		250cc		304.299		182.372		22.10	0.0		151670.5	323.93517	323.91533	OK
19900213		250cc		304.347		182.392		22.13	0.0		151651.9	323.89549		OK
19900214	7	P-1	1.2978	762.4	-0.1		20.9	21.87		5.37876				
19900215		4cc		636.083		375.088		20.91	-0.313		70570.0	3.79579	3.79563	XLNT
19900215		4cc		636.189		375.078		21.01	-0.313		70564.0	3.79546		OK
19900214	8	P-7	2.2733	762.4	-0.1		20.9	21.87		9.42174				
19900215		4cc		831.744		375.086		21.14	-0.313		40291.1	3.79612	3.79616	XLNT
19900215		4cc		831.856		375.060		21.23	-0.313		40291.9	3.79620		OK
19900214	9	P-2	1.4619	762.4	-0.1		20.9	21.87		6.05887				
19900215		4cc		669.296		375.056		21.31	-0.313		62663.9	3.79673	3.79644	XLNT
19900215		4cc		669.432		375.052		21.40	-0.313		62654.3	3.79614		XLNT

Date	Exp. No.	Plenum/ Chamber	Plenum Volume (cc)	Mercury Column Data for Barometer and Manometer Chamber Measurements: Vac.Col. (mm)	Barom. Corr. (mm)	Samp.Col. (mm)	Temp.(deg.C) Hg	Temp.(deg.C) Plen. Manometer	Meniscus Corr. (mm)	Plenum Moles (*E+05)	V/N (cc/mol)	Mano. Chamber Volume: Indiv. (cc)	Mano. Chamber Volume: Average (cc)	Mano.Run Comment
19900214	10	P-3	1.6360	762.4	-0.1		20.9	21.87		6.78044				
19900216		4cc		704.165		375.067		21.30	-0.313		56004.7	3.79736	3.79750	XLNT
19900216		4cc		704.280		375.064		21.42	-0.313		56008.8	3.79764		XLNT
19900214	11	P-6	2.0367	762.4	-0.1		20.9	21.87		8.44115				
19900216		4cc		785.062		375.079		21.73	-0.313		44991.8	3.79782	3.79752	XLNT
19900216		4cc		785.215		375.079		21.79	-0.313		44984.6	3.79722		OK
19900214	12	P-8	51.455	762.4	-0.1		20.9	21.87		213.25631				
19900216		250cc		304.058		182.416		21.74	0.0		151830.3	323.78775	323.79981	FAIR
19900216		250cc		304.076		182.430		21.77	0.0		151841.6	323.81187		FAIR
19900216		64cc		852.477		232.460		21.80	0.0		29692.2	63.32052	63.32052	XLNT
19901004	13	P-1	1.2978	764.5	-0.1		21.7	22.04		5.38971				
19901004		4cc		638.148		375.285		22.15	-0.313		70380.1	3.79328	3.79371	OK
19901004		4cc		638.156		375.277		22.23	-0.313		70396.0	3.79414		OK
19901004	14	P-7	2.2733	764.5	-0.1		21.7	22.04		9.44092				
19901005		4cc		834.889		375.256		22.28	-0.313		40194.3	3.79471	3.79476	XLNT
19901005		4cc		835.051		375.266		22.38	-0.313		40195.4	3.79481		XLNT
19901004	15	P-2	1.4619	764.5	-0.1		21.7	22.04		6.07121				
19901005		4cc		671.334		375.235		22.42	-0.313		62518.1	3.79561	3.79515	OK
19901005		4cc		671.458		375.225		22.48	-0.313		62503.2	3.79470		OK
19901004	16	P-3	1.6360	764.5	-0.1		21.7	22.04		6.79424				
19901005		4cc		706.425		375.244		22.54	-0.313		55900.0	3.79798	3.79790	FAIR
19901005		4cc		706.500		375.234		22.60	-0.313		55897.7	3.79782		XLNT
19901004	17	P-6	2.0367	764.5	-0.1		21.7	22.04		8.45833				
19901005		4cc		787.442		375.232		22.60	-0.313		44888.2	3.79679	3.79623	XLNT
19901005		4cc		787.725		375.262		22.69	-0.313		44875.0	3.79568		FAIR
19901005	18	P-7	2.2733	763.1	-0.1		21.8	22.32		9.41428				
19901006		4cc		833.783		375.241		22.46	-0.313		40316.4	3.79550	3.79538	XLNT
19901006		4cc		833.887		375.218		22.52	-0.313		40313.9	3.79526		XLNT

Date	Exp. No.	Plenum/ Chamber	Plenum Volume (cc)	Mercury Column Data for Barometer and Manometer Chamber Measurements: Vac.Col. (mm)	Barom. Corr. (mm)	Samp.Col. (mm)	Temp.(deg.C) Hg	Temp.(deg.C) Plen. Manometer	Meniscus Corr. (mm)	Plenum Moles (*E+05)	V/N (cc/mol)	Mano. Chamber Volume: Indiv. (cc)	Mano. Chamber Volume: Average (cc)	Mano.Run Comment
19901005	19	P-1	1.2978	763.1	-0.1		21.8	22.32		5.37450				
19901006		4cc		637.510		375.261		22.55	-0.313		70646.6	3.79690	3.79675	FAIR
19901006		4cc		637.516		375.218		22.58	-0.313		70640.9	3.79660		XLNT
19901008	20	P-3	1.6360	764.0	-0.1		20.5	22.05		6.79102				
19901009		4cc		705.597		375.184		21.93	-0.313		55907.7	3.79671	3.79651	XLNT
19901009		4cc		705.829		375.204		22.08	-0.313		55901.9	3.79631		XLNT
19901008	21	P-1	1.2978	764.0	-0.1		20.5	22.05		5.38716				
19901009		4cc		637.878		375.204		22.25	-0.313		70456.1	3.79558	3.79561	XLNT
19901009		4cc		637.988		375.215		22.36	-0.313		70457.3	3.79565		XLNT
19901008	22	P-7	2.2733	764.0	-0.1		20.5	22.05		9.43645				
19901009		4cc		834.522		375.220		22.40	-0.313		40240.7	3.79730	3.79732	FAIR
19901009		4cc		834.506		375.194		22.41	-0.313		40241.3	3.79735		XLNT
19901008	23	P-2	1.4619	764.0	-0.1		20.5	22.05		6.06834				
19901010		4cc		670.800		375.171		22.07	-0.313		62539.2	3.79509	3.79574	XLNT
19901010		4cc		671.010		375.186		22.35	-0.313		62560.7	3.79640		XLNT
19901008	24	P-6	2.0367	764.0	-0.1		20.5	22.05		8.45433				
19901010		4cc		787.027		375.208		22.56	-0.313		44924.5	3.79806	3.79832	OK
19901010		4cc		787.039		375.188		22.62	-0.313		44930.6	3.79858		XLNT

Date	Exp. No.	Plenum/ Chamber	Plenum Volume (cc)	Mercury Column Data for Barometer and Manometer Chamber Measurements: Vac.Col. (mm)	Barom. Corr. (mm)	Samp.Col. (mm)	Temp.(deg.C) Hg	Temp.(deg.C) Plen. Manometer	Meniscus Corr. (mm)	Plenum Moles (*E+05)	V/N (cc/mol)	Mano. Chamber Volume: Indiv. (cc)	Mano. Chamber Volume: Average (cc)	Mano.Run Comment
19931012	1	P-1	1.2978	764.1	-0.4		21.2	21.92		5.38747				
19931013		4cc		637.849		375.226		21.86	-0.288		70364.5	3.79087	3.79067	XLNT
19931013		4cc		637.884		375.196		21.90	-0.288		70357.2	3.79047		XLNT
19931012	2	P-7	2.2733	764.1	-0.4		21.2	21.92		9.43699				
19931013		4cc		834.444		375.213		21.96	-0.288		40181.0	3.79188	3.79205	XLNT
19931013		4cc		834.444		375.204		21.99	-0.288		40184.6	3.79222		XLNT
19931012	3	P-8	51.455	764.1	-0.4		21.2	21.92		213.60152				
19931014		64cc		851.945		232.552		21.84	0.0		29726.6	63.49638	63.49825	XLNT
19931014		64cc		852.012		232.499		21.91	0.0		29728.3	63.50011		XLNT
19931015		250cc		303.885		182.512		21.69	0.0		152139.9	324.97305	325.00928	OK
19931015		250cc		303.858		182.499		21.72	0.0		152173.8	325.04550		OK
19940131	4	P-1	1.2978	769.4	-0.4		19.8	21.92		5.42644				
19940201		4cc		639.217		375.064		21.67	-0.288		69908.1	3.79352	3.79366	XLNT
19940201		4cc		639.224		375.043		21.72	-0.288		69913.2	3.79380		XLNT
19940131	5	P-7	2.2733	769.4	-0.4		19.8	21.92		9.50526				
19940201		4cc		836.846		375.051		21.86	-0.288		39942.7	3.79666	3.79621	VERY GOOD
19940201		4cc		837.086		375.099		21.91	-0.288		39933.2	3.79576		XLNT
19940131	6	P-2	1.4619	769.4	-0.4		19.8	21.92		6.11259				
19940201		4cc		672.645		375.065		21.74	-0.288		62049.1	3.79280	3.79268	XLNT
19940201		4cc		672.684		375.052		21.77	-0.288		62044.9	3.79255		XLNT
19940131	7	P-3	1.6360	769.4	-0.4		19.8	21.92		6.84054				
19940202		4cc		707.851		375.064		21.76	-0.288		55469.5	3.79442	3.79405	XLNT
19940202		4cc		707.987		375.041		21.84	-0.288		55458.9	3.79369		OK
19940131	8	P-6	2.0367	769.4	-0.4		19.8	21.92		8.51597				
19940202		4cc		788.806		375.048		21.86	-0.288		44598.0	3.79795*	3.79448	XLNT
19940202		4cc		789.300		375.046		21.94	-0.288		44557.2	3.79448		XLNT
19940202	9	P-1	1.2978	765.0	-0.4		20.1	21.92		5.39493				
19940203		4cc		637.954		375.071		21.78	-0.288		70274.6	3.79126	3.79154	XLNT
19940203		4cc		637.987		375.039		21.89	-0.288		70284.9	3.79182		XLNT

				Mercury Column Data for Barometer and Manometer Chamber Measurements										
							Temp.(deg.C)					Mano. Chamber Volume		
Date	Exp. No.	Plenum/ Chamber	Plenum Volume (cc)	Vac.Col. (mm)	Barom. Corr. (mm)	Samp.Col. (mm)	Hg Manometer	Plen.	Meniscus Corr. (mm)	Plenum Moles (*E+05)	V/N (cc/mol)	Indiv. (cc)	Average (cc)	Mano.Run Comment
19940202	10	P-7	2.2733	765.0	-0.4		20.1	21.92		9.45007				
19940203		4cc		834.727		375.066	22.03		-0.288		40153.4	3.79453	3.79454	OK
19940203		4cc		834.981		375.058	22.19		-0.288		40153.6	3.79454		XLNT
19940202	11	P-8	51.455	765.0	-0.4		20.1	21.92		213.89754				
19940203		64cc		855.740		232.421	22.33		0.0		29590.9	63.29425	63.30144	OK
19940203		64cc		855.745		232.410	22.40		0.0		29597.6	63.30863		XLNT
19940203		250cc		304.653		182.372	22.50		0.0		151447.5	323.94245	323.89738	FAIR
19940203		250cc		304.621		182.306	22.50		0.0		151405.3	323.85231		OK
19940207	12	P-1	1.2978	757.3	-0.4		21.6	22.97		5.31960				
19940208		4cc		634.582		375.080	22.17		-0.288		71292.6	3.79248	3.79311	OK
19940208		4cc		634.514		375.060	22.21		-0.288		71316.0	3.79373		XLNT
19940207	13	P-7	2.2733	757.3	-0.4		21.6	22.97		9.31812				
19940208		4cc		828.360		375.070	22.04		-0.288		40721.4	3.79447	3.79445	OK
19940208		4cc		828.434		375.041	22.10		-0.288		40720.9	3.79442		XLNT
19940207	14	P-2	1.4619	757.3	-0.4		21.6	22.97		5.99224				
19940208		4cc		667.016		375.078	22.21		-0.288		63358.8	3.79661	3.79585	OK
19940208		4cc		667.113		375.059	22.21		-0.288		63333.5	3.79510		XLNT
19940207	15	P-3	1.6360	757.3	-0.4		21.6	22.97		6.70587				
19940208		4cc		702.052		375.048	22.34		-0.288		56571.4	3.79360	3.79355	XLNT
19940208		4cc		702.155		375.072	22.40		-0.288		56569.9	3.79350		XLNT
19940207	16	P-6	2.0367	757.3	-0.4		21.6	22.97		8.34831				
19940209		4cc		781.010		375.090	22.03		-0.288		45490.0	3.79765	3.79752	XLNT
19940209		4cc		781.308		375.084	22.22		-0.288		45487.0	3.79739		XLNT
19940207	17	P-8	51.455	757.3	-0.4		21.6	22.97		210.91093				
19940209		64cc		846.706		232.400	22.21		0.0		30013.9	63.30263	63.30608	XLNT
19940209		64cc		846.798		232.404	22.28		0.0		30017.2	63.30953		XLNT
19940209		250cc		302.939		182.374	22.41		0.0		153555.4	323.86517	323.83859	OK
19940209		250cc		302.974		182.372	22.45		0.0		153530.2	323.81202		OK

Date	Exp. No.	Plenum/ Chamber	Plenum Volume (cc)	Mercury Column Data for Barometer and Manometer Chamber Measurements: Vac.Col. (mm)	Barom. Corr. (mm)	Samp.Col. (mm)	Temp.(deg.C) Hg	Temp.(deg.C) Plen. Manometer	Meniscus Corr. (mm)	Plenum Moles (*E+05)	V/N (cc/mol)	Mano. Chamber Volume Indiv. (cc)	Mano. Chamber Volume Average (cc)	Mano.Run Comment
19981210	1	P-1	1.2978	771.9	-0.3		20.4	21.92		5.44429				
19981210		4cc		640.728		374.999		22.44	-0.208		69663.6	3.79269	3.79236	XLNT
19981210		4cc		640.808		374.976		22.50	-0.208		69651.5	3.79203		OK
19981210	2	P-7	2.2733	771.9	-0.3		20.4	21.92		9.53653				
19981211		4cc		838.767		374.952		22.08	-0.208		39792.7	3.79484	3.79474	XLNT
19981211		4cc		839.054		374.964		22.23	-0.208		39790.6	3.79464		XLNT
19981214	3	P-1	1.2978	766.7	-0.3		20.7	21.92		5.40711				
19981214		4cc		638.566		374.982		22.10	-0.208		70146.3	3.79289	3.79270	VERY GOOD
19981214		4cc		638.696		374.982		22.21	-0.208		70139.4	3.79251		XLNT
19981214	4	P-2	1.4619	766.7	-0.3		20.7	21.92		6.09081				
19981214		4cc		671.985		374.982		22.42	-0.208		62305.2	3.79489	3.79476	FAIR
19981214		4cc		672.065		374.978		22.48	-0.208		62300.9	3.79463		FAIR
19981214	5	P-3	1.6360	766.7	-0.3		20.7	21.92		6.81617				
19981215		4cc		707.174		374.953		22.41	-0.208		55680.8	3.79530	3.79545	XLNT
19981215		4cc		707.341		374.980		22.55	-0.208		55685.3	3.79560		XLNT
19981214	6	P-6	2.0367	766.7	-0.3		20.7	21.92		8.48563				
19981215		4cc		788.677		374.961		22.84	-0.208		44751.4	3.79744	3.79672	OK
19981215		4cc		788.880		374.978		22.86	-0.208		44734.4	3.79600		XLNT
19981214	7	P-7	2.2733	766.7	-0.3		20.7	21.92		9.47140				
19981216		4cc		835.716		374.979		22.38	-0.208		40102.9	3.79830	3.79824	XLNT
19981216		4cc		835.680		374.952		22.49	-0.208		40119.5	3.79988*		FAIR
19981216		4cc		836.118		374.969		22.62	-0.208		40101.5	3.79817		XLNT

Date	Exp. No.	Plenum/ Chamber	Plenum Volume (cc)	Mercury Column Data for Barometer and Manometer Chamber Measurements: Vac.Col. (mm)	Barom. Corr. (mm)	Samp.Col. (mm)	Temp.(deg.C) Hg Manometer	Temp.(deg.C) Plen.	Meniscus Corr. (mm)	Plenum Moles (*E+05)	V/N (cc/mol)	Mano. Chamber Volume Indiv. (cc)	Mano. Chamber Volume Average (cc)	Mano.Run Comment
19990106	8	P-2	1.4619	766.7	-0.3		21.2	21.92		6.09025				
19990106		4cc		672.224		374.991	22.61		-0.208		62299.3	3.79418	3.79417	XLNT
19990106		4cc		672.300		374.990	22.68		-0.208		62298.7	3.79415		XLNT
19990106	9	P-7	2.2733	766.7	-0.3		21.2	21.92		9.47053				
19990107		4cc		836.028		375.042	22.55		-0.208		40105.6	3.79822	3.79810	XLNT
19990107		4cc		836.136		374.972	22.64		-0.208		40103.1	3.79798		XLNT
19990106	10	P-1	1.2978	766.7	-0.3		21.2	21.92		5.40661				
19990107		4cc		638.930		374.978	22.85		-0.208		70236.9	3.79744	3.79658	FAIR
19990107		4cc		639.062		374.972	22.87		-0.208		70205.1	3.79572		OK
19990106	11	P-6	2.0367	766.7	-0.3		21.2	21.92		8.48486				
19990107		4cc		788.644		374.993	23.01		-0.208		44785.7	3.80001	3.79911	OK
19990107		4cc		788.850		375.004	23.01		-0.208		44764.6	3.79821		XLNT
19990106	12	P-3	1.6360	766.7	-0.3		21.2	21.92		6.81555				
19990107		4cc		707.442		374.964	23.04		-0.208		55763.5	3.80059	3.79988	XLNT
19990107		4cc		707.602		375.000	23.04		-0.208		55742.7	3.79917		XLNT
19990113	13	P-1	1.2978	768.0	-0.3		20.7	21.92		5.41633				
19990113		4cc		639.326		375.035	22.49		-0.208		70056.1	3.79447	3.79381	XLNT
19990113		4cc		639.518		375.059	22.57		-0.208		70031.6	3.79314		XLNT
19990113	14	P-7	2.2733	768.0	-0.3		20.7	21.92		9.48755				
19990113		4cc		837.558		374.977	22.75		-0.208		39995.6	3.79460	3.79461	VERY GOOD
19990113		4cc		837.642		374.997	22.79		-0.208		39995.8	3.79462		XLNT
19990113	15	P-2	1.4619	768.0	-0.3		20.7	21.92		6.10119				
19990114		4cc		672.691		374.994	22.51		-0.208		62179.6	3.79370	3.79354	XLNT
19990114		4cc		672.788		374.960	22.61		-0.208		62174.5	3.79339		XLNT
19990113	16	P-6	2.0367	768.0	-0.3		20.7	21.92		8.50010				
19990114		4cc		789.648		374.996	22.85		-0.208		44651.6	3.79543	3.79530	XLNT
19990114		4cc		789.768		374.999	22.91		-0.208		44648.6	3.79518		XLNT
19990113	17	P-3	1.6360	768.0	-0.3		20.7	21.92		6.82780				
19990114		4cc		708.470		375.027	23.01		-0.208		55595.7	3.79596	3.79584	XLNT
19990114		4cc		708.490		375.014	23.02		-0.208		55592.2	3.79572		XLNT

				Mercury Column Data for Barometer and Manometer Chamber Measurements										
							Temp.(deg.C)					Mano. Chamber Volume		
Date	Exp. No.	Plenum/ Chamber	Plenum Volume (cc)	Vac.Col. (mm)	Barom. Corr. (mm)	Samp.Col. (mm)	Hg Manometer	Plen.	Meniscus Corr. (mm)	Plenum Moles (*E+05)	V/N (cc/mol)	Indiv. (cc)	Average (cc)	Mano.Run Comment
19990121	18	P-1	1.2978	768.7	-0.3		21.1	21.92		5.42090				
19990121		4cc		639.787		375.116	22.42		-0.208		69937.7	3.79125	3.79126	FAIR
19990121		4cc		639.887		375.132	22.51		-0.208		69938.0	3.79127		FAIR
19990121	19	P-7	2.2733	768.7	-0.3		21.1	21.92		9.49555				
19990121		4cc		838.038		375.082	22.74		-0.208		39961.7	3.79458	3.79441	XLNT
19990121		4cc		838.186		375.089	22.80		-0.208		39958.1	3.79424		XLNT
19990121	20	P-2	1.4619	768.7	-0.3		21.1	21.92		6.10634				
19990122		4cc		673.146		375.164	22.50		-0.208		62117.7	3.79312	3.79309	XLNT
19990122		4cc		673.152		375.091	22.57		-0.208		62116.8	3.79307		XLNT
19990121	21	P-6	2.0367	768.7	-0.3		21.1	21.92		8.50727				
19990122		4cc		789.904		375.115	22.74		-0.208		44619.2	3.79588	3.79597	XLNT
19990122		4cc		789.960		375.117	22.79		-0.208		44621.4	3.79606		OK
19990121	22	P-3	1.6360	768.7	-0.3		21.1	21.92		6.83355				
19990122		4cc		708.675		375.106	22.90		-0.208		55552.7	3.79623	3.79594	FAIR
19990122		4cc		708.741		375.110	22.91		-0.208		55544.4	3.79566		XLNT

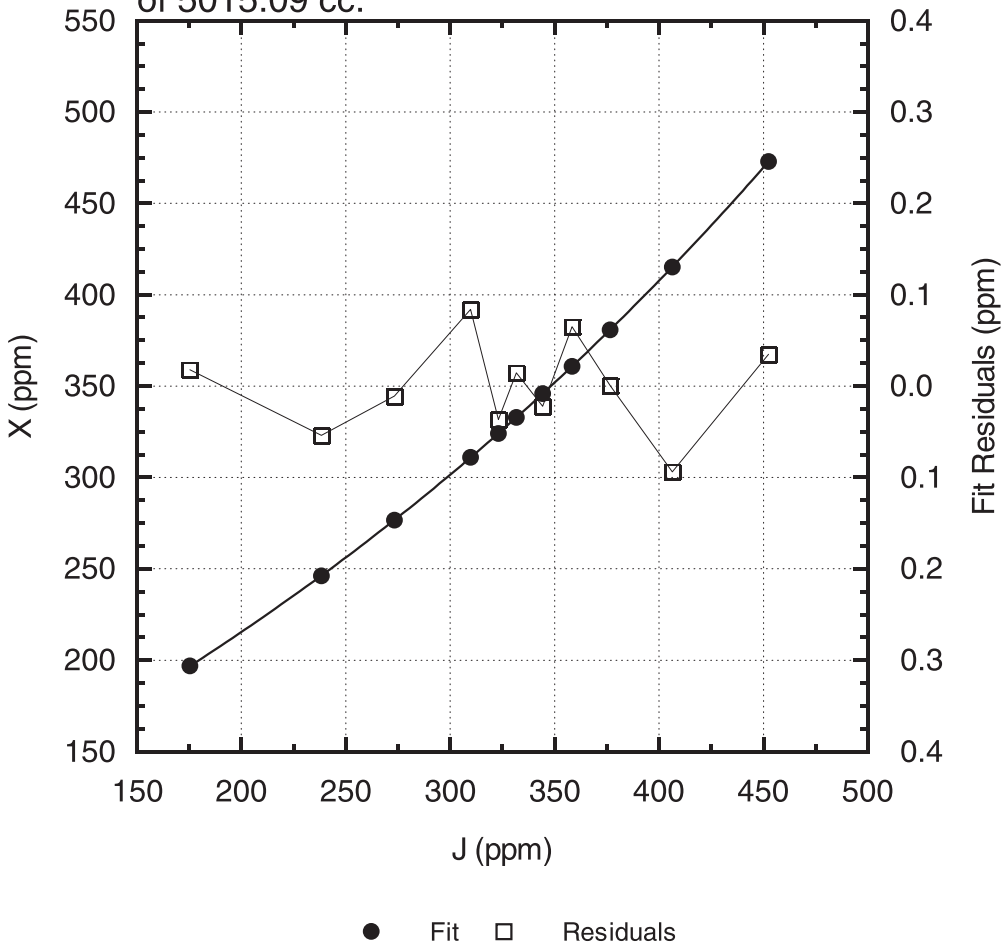
* Measurement rejected

Appendix A4. Cubic Calibration Curves for APC Infrared Analyzer, 1985-1999: Data, Plots

The following pages display plots of the individual cubic calibration curves derived for N_2 and air primary reference gases, separately, for each calibration year from 1985 through 1999. The data pairs, index (J) from Table 9.3 and mole fraction (X) from Table 9.5, are listed in a table opposite the cylinder numbers of the primary reference gases. Also listed and plotted are the residuals for each fit, the standard error of the fit (standard deviation of the residuals, accounting for the loss of four degrees of freedom in making the fit), and the derived cubic coefficients. The manometric chamber volumes used to calculate each set of X values are explicitly noted.

Appendix A4. N_2 Cubic for 1985

Third order fit to NDIR index (J) vs. 1985 Manometric (X) runs adjusted to 4cc volume of 3.7961 and large volume of 5015.09 cc.



Fit Data and Results

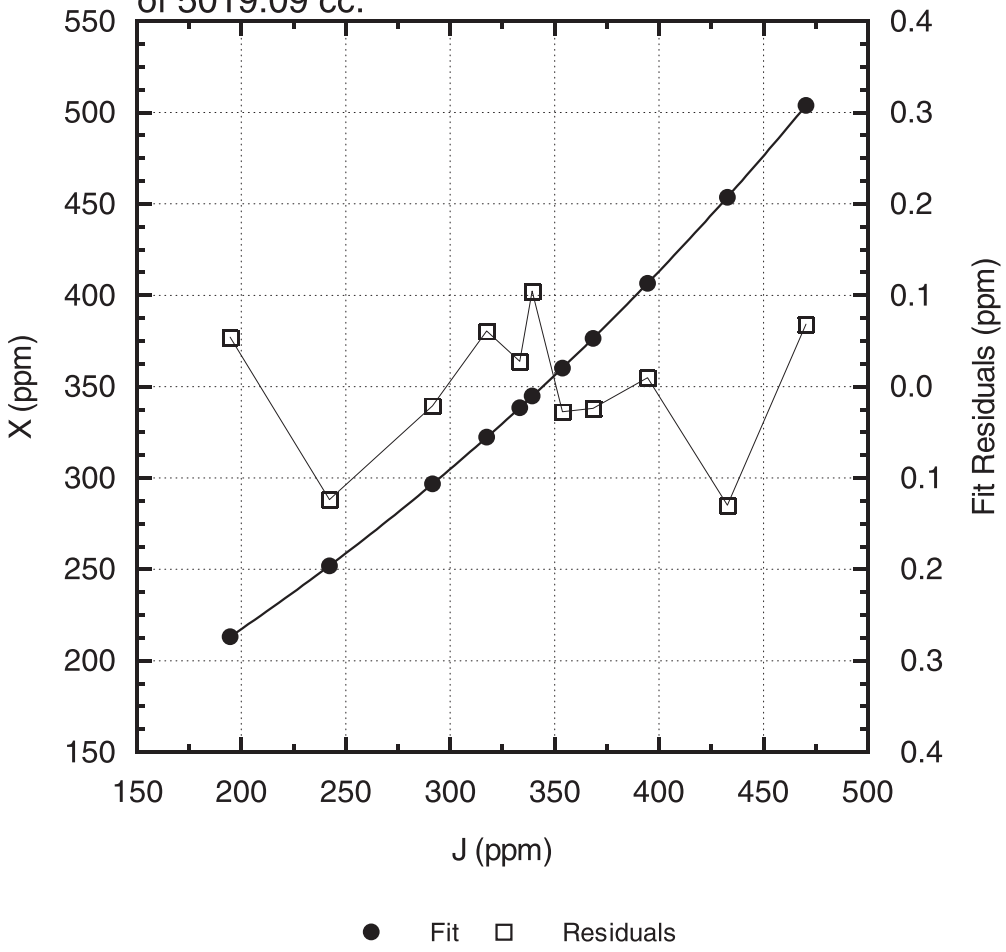
Cyl	J	X	Fit	Resids
2408	175.366	196.881	196.863	0.018
3753	238.238	246.193	246.247	0.054
7366	273.293	276.734	276.745	0.011
6078	309.768	311.050	310.966	0.084
2399	323.104	324.113	324.150	0.037
39239	331.712	332.872	332.857	0.015
39256	344.308	345.864	345.886	0.022
39272	358.253	360.781	360.716	0.065
1540	376.498	380.781	380.780	0.001
35299	406.295	415.128	415.222	0.094
35316	452.471	472.951	472.916	0.035
			Standard error:	0.062
			Number of points:	11

Coefficients:

0:	8.7513161E+01
1:	5.3244395E 01
2:	4.0168494E 04
3:	6.7200368E 07

Appendix A4. Air Cubic for 1985

Third order fit to NDIR index (J) vs.
1985 Manometric (X) runs adjusted to
4cc volume of 3.7961 and large volume
of 5019.09 cc.



Fit Data and Results

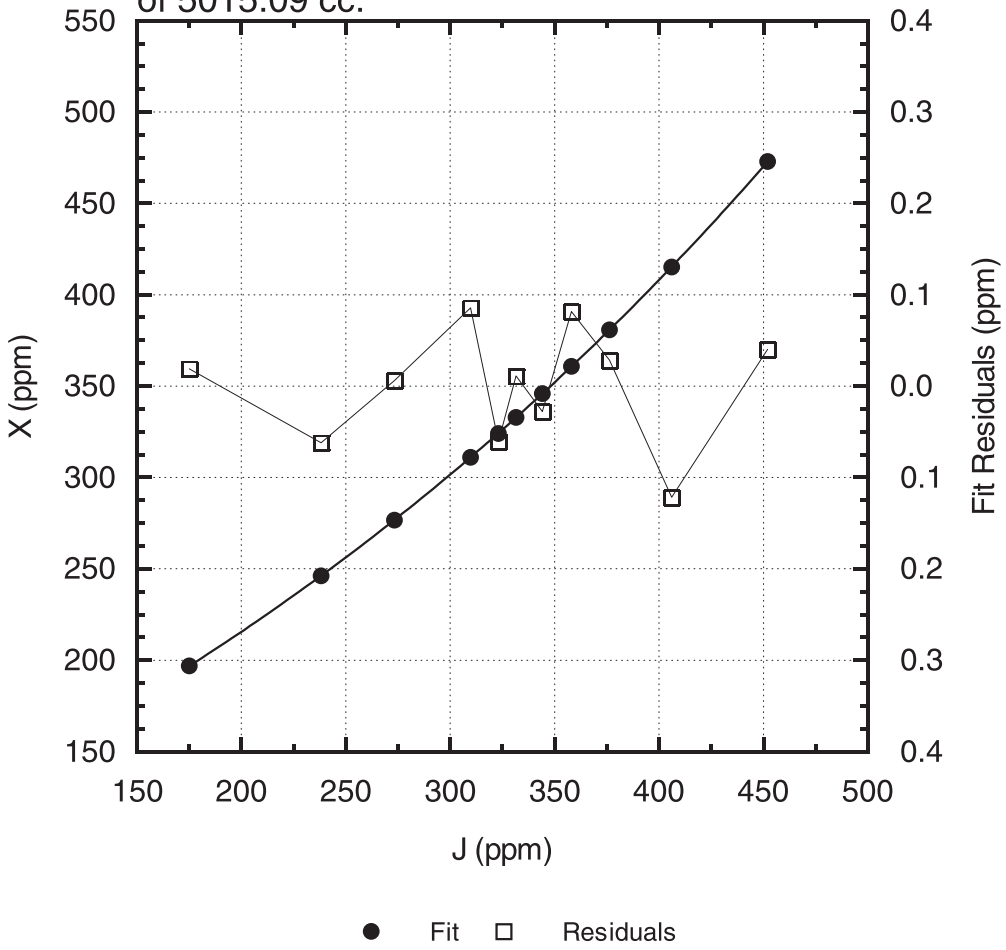
Cyl	J	X	Fit	Resids
71251	194.625	213.208	213.154	0.054
34819	242.140	251.888	252.012	0.124
71286	291.559	296.778	296.799	0.021
71341	317.479	322.300	322.239	0.061
66638	333.250	338.444	338.416	0.028
66625	339.277	344.847	344.743	0.104
66696	353.720	360.206	360.234	0.028
71308	368.353	376.392	376.416	0.024
71370	394.516	406.621	406.611	0.010
71479	432.676	453.563	453.693	0.130
67615	470.279	503.886	503.818	0.068
		Standard error:		0.090
		Number of points:		11

Coefficients:

0:	8.7419149E+01
1:	5.4082850E 01
2:	4.0485895E 04
3:	6.9724009E 07

Appendix A4. N_2 Cubic for 1987

Third order fit to NDIR index (J) vs. 1985 Manometric (X) runs adjusted to 4cc volume of 3.7961 and large volume of 5015.09 cc.



Fit Data and Results

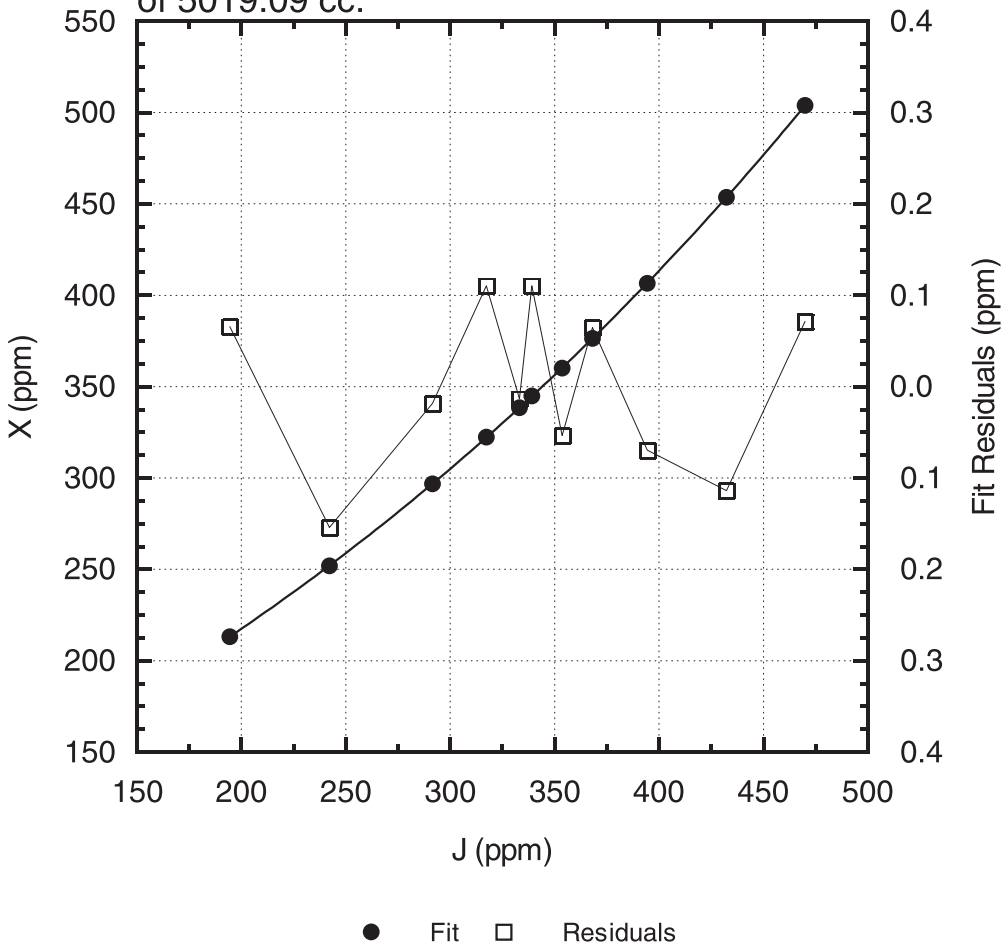
Cyl	J	X	Fit	Resids
2408	175.102	196.881	196.862	0.019
3753	238.182	246.193	246.255	0.062
7366	273.214	276.734	276.728	0.006
6078	309.663	311.050	310.964	0.086
2399	323.001	324.113	324.174	0.061
39239	331.571	332.872	332.861	0.011
39256	344.142	345.864	345.892	0.028
39272	358.034	360.781	360.699	0.082
1540	376.225	380.781	380.753	0.028
35299	405.995	415.128	415.249	0.121
35316	452.032	472.951	472.911	0.040
		Standard error:		0.076
		Number of points:		11

Coefficients:

0:	8.9358125E+01
1:	5.1640083E 01
2:	4.4480490E 04
3:	6.4131077E 07

Appendix A4. Air Cubic for 1987

Third order fit to NDIR index (J) vs.
1985 Manometric (X) runs adjusted to
4cc volume of 3.7961 and large volume
of 5019.09 cc.



Fit Data and Results

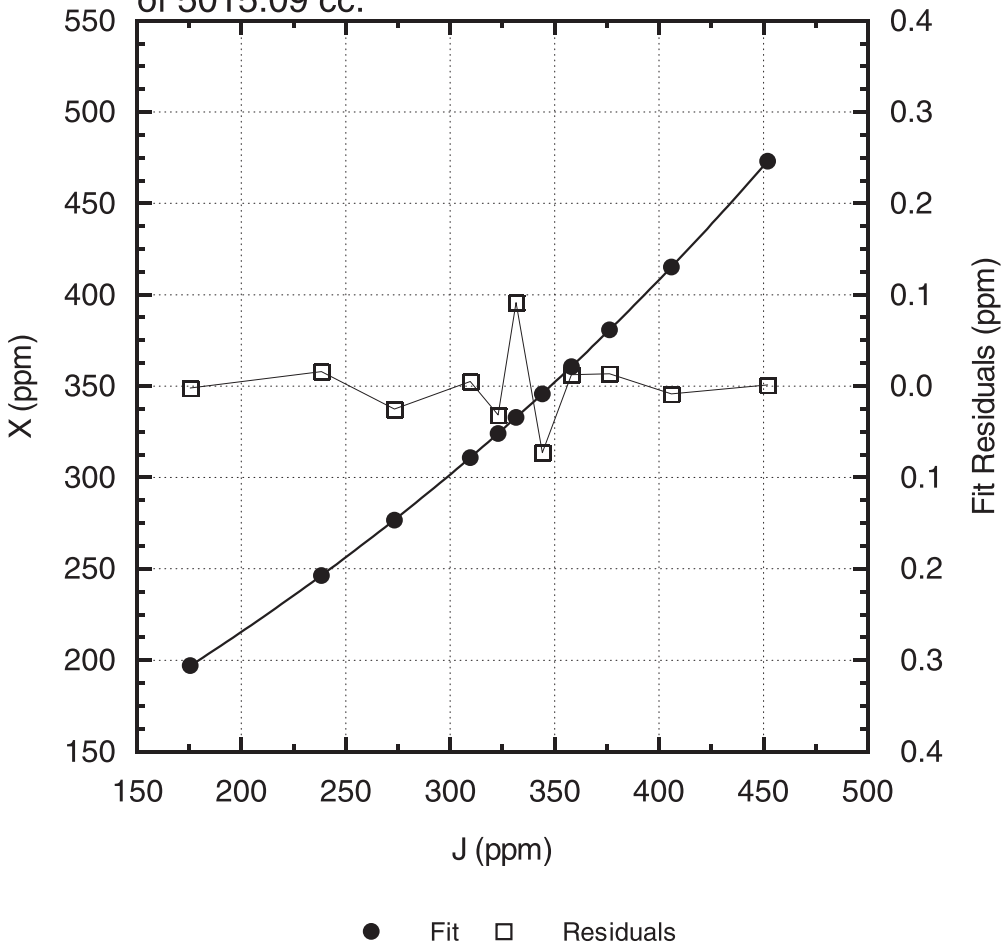
Cyl	J	X	Fit	Resids
71251	194.451	213.208	213.142	0.066
34819	242.086	251.888	252.042	0.154
71286	291.459	296.778	296.796	0.018
71341	317.306	322.300	322.190	0.110
66638	333.143	338.444	338.457	0.013
66625	339.116	344.847	344.737	0.110
66696	353.564	360.206	360.259	0.053
71308	368.068	376.392	376.327	0.065
71370	394.324	406.621	406.691	0.070
71479	432.322	453.563	453.677	0.114
67615	469.850	503.886	503.814	0.072
		Standard error:		0.109
		Number of points:		11

Coefficients:

0:	8.8502907E+01
1:	5.3226297E 01
2:	4.2540437E 04
3:	6.8755693E 07

Appendix A4. N_2 Cubic for 1989

Third order fit to NDIR index (J) vs.
1990 Manometric (X) runs adjusted to
4cc volume of 3.7958 and large volume
of 5015.09 cc.



Fit Data and Results

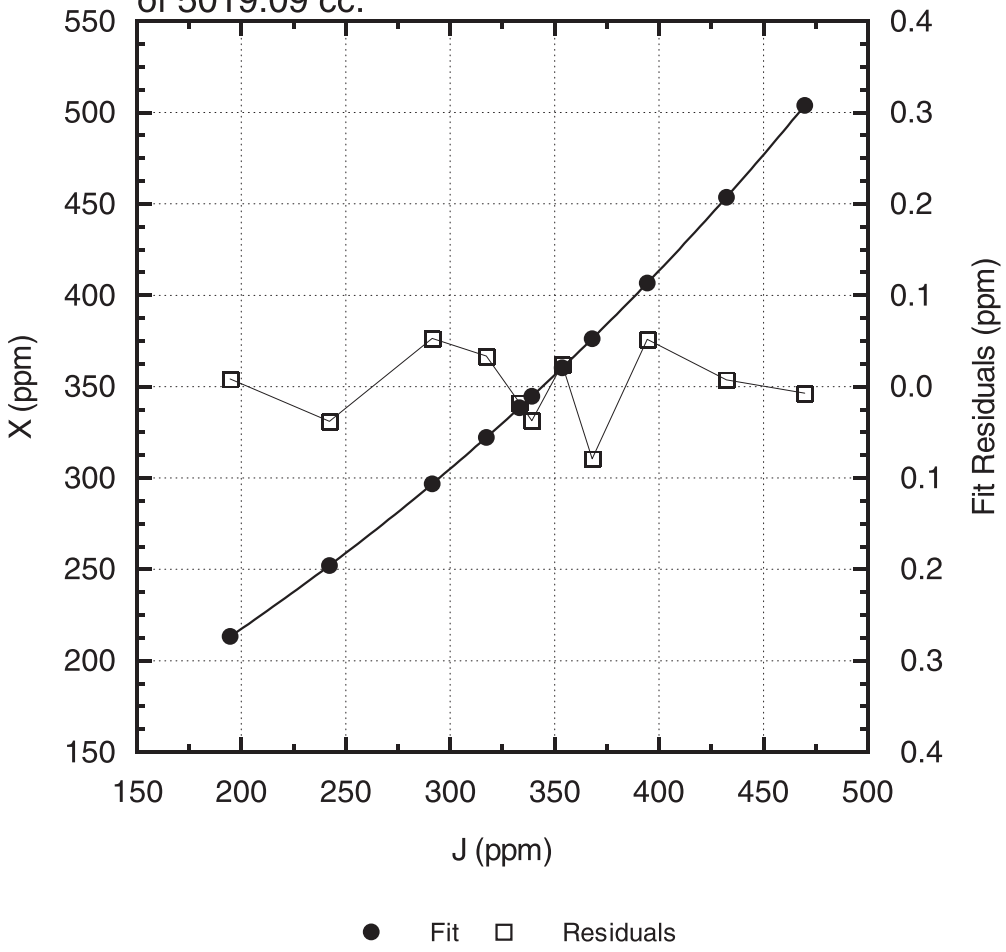
Cyl	J	X	Fit	Resids
2408	175.512	197.001	197.003	0.002
3753	238.294	246.391	246.375	0.016
7366	273.214	276.742	276.767	0.025
6078	309.616	310.946	310.941	0.005
2399	322.958	324.114	324.146	0.032
39239	331.519	332.910	332.819	0.091
39256	344.112	345.795	345.868	0.073
39272	357.983	360.665	360.652	0.013
1540	376.208	380.766	380.752	0.014
35299	405.930	415.234	415.243	0.009
35316	451.915	473.030	473.029	0.001
			Standard error:	0.048
			Number of points:	11

Coefficients:

0:	8.6302911E+01
1:	5.4754797E 01
2:	3.4180235E 04
3:	7.5276581E 07

Appendix A4. Air Cubic for 1989

Third order fit to NDIR index (J) vs.
1990 Manometric (X) runs adjusted to
4cc volume of 3.7958 and large volume
of 5019.09 cc.



Fit Data and Results

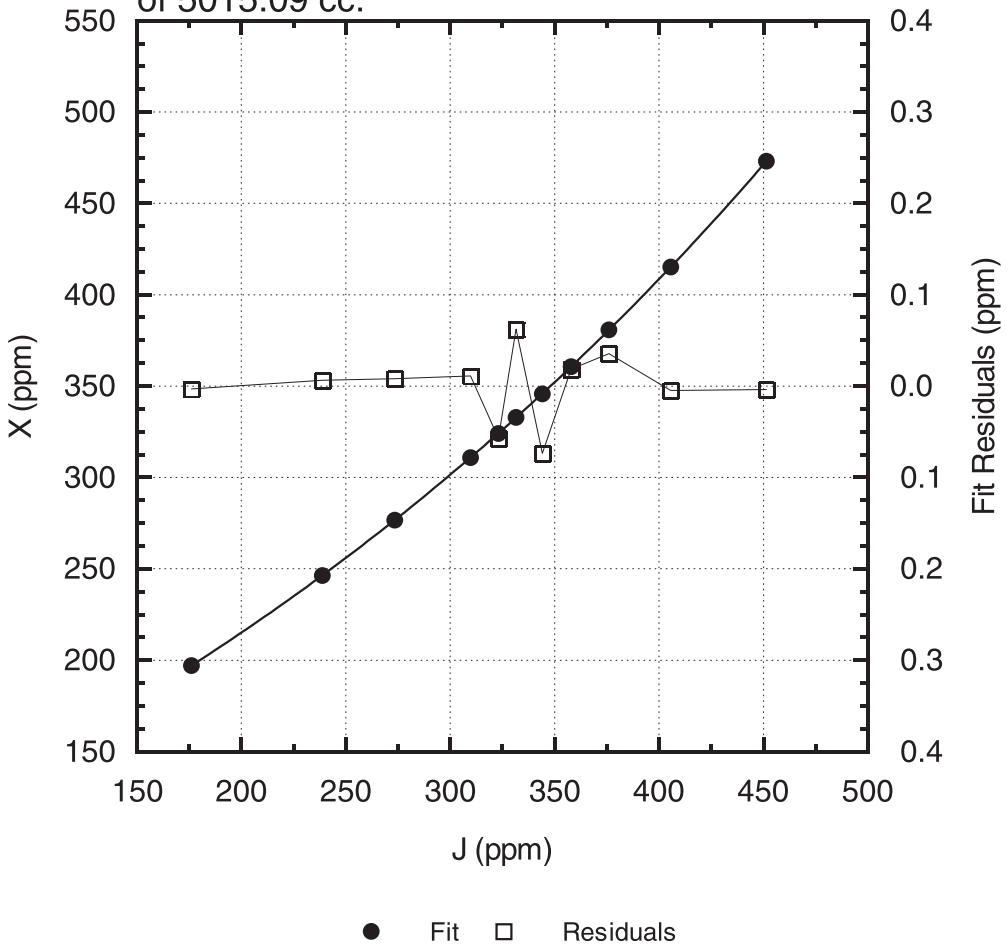
Cyl	J	X	Fit	Resids
71251	194.666	213.289	213.280	0.009
34819	242.120	252.103	252.141	0.038
71286	291.388	296.840	296.787	0.053
71341	317.208	322.156	322.123	0.033
66638	333.128	338.438	338.456	0.018
66625	339.075	344.664	344.701	0.037
66696	353.535	360.247	360.223	0.024
71308	368.004	376.163	376.242	0.079
71370	394.275	406.673	406.621	0.052
71479	432.237	453.627	453.619	0.008
67615	469.809	503.964	503.971	0.007
			Standard error:	0.049
			Number of points:	11

Coefficients:

0:	8.5543016E+01
1:	5.6263054E 01
2:	3.2667906E 04
3:	7.9071496E 07

Appendix A4. N_2 Cubic for 1990

Third order fit to NDIR index (J) vs. 1990 Manometric (X) runs adjusted to 4cc volume of 3.7958 and large volume of 5015.09 cc.



Fit Data and Results

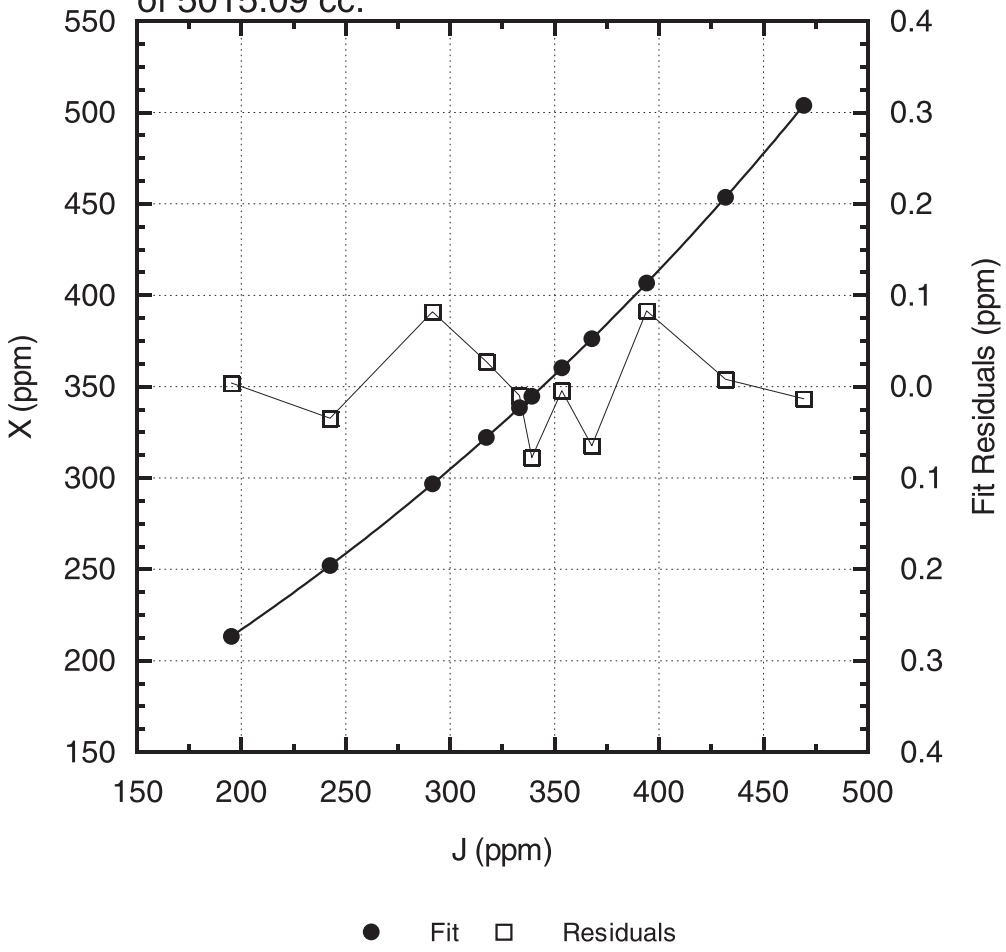
Cyl	J	X	Fit	Resids
2408	176.021	197.001	197.004	0.003
3753	238.708	246.391	246.385	0.006
7366	273.448	276.742	276.734	0.008
6078	309.716	310.946	310.935	0.011
2399	323.026	324.114	324.171	0.057
39239	331.549	332.910	332.848	0.062
39256	344.054	345.795	345.868	0.073
39272	357.853	360.665	360.647	0.018
1540	375.979	380.766	380.731	0.035
35299	405.586	415.234	415.239	0.005
35316	451.400	473.030	473.034	0.004
		Standard error:		0.045
		Number of points:		11

Coefficients:

0:	8.7137369E+01
1:	5.3370884E 01
2:	3.8760652E 04
3:	7.1756893E 07

Appendix A4. Air Cubic for 1990

Third order fit to NDIR index (J) vs.
1990 Manometric (X) runs adjusted to
4cc volume of 3.7958 and large volume
of 5015.09 cc.



Fit Data and Results

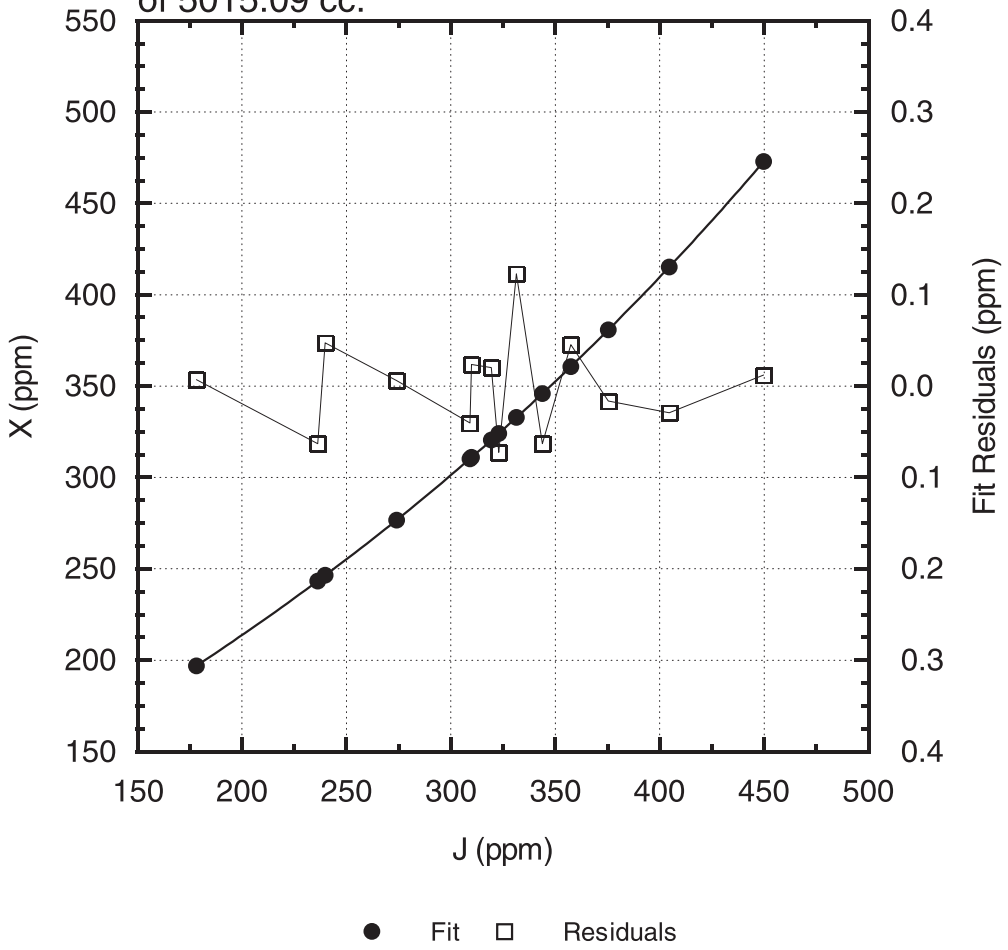
Cyl	J	X	Fit	Resids
71251	195.148	213.289	213.285	0.004
34819	242.508	252.103	252.137	0.034
71286	291.557	296.840	296.758	0.082
71341	317.293	322.156	322.129	0.027
66638	333.123	338.438	338.448	0.010
66625	339.087	344.664	344.742	0.078
66696	353.466	360.247	360.251	0.004
71308	367.829	376.163	376.228	0.065
71370	393.970	406.673	406.590	0.083
71479	431.810	453.627	453.619	0.008
67615	469.272	503.964	503.977	0.013
			Standard error:	0.061
			Number of points:	11

Coefficients:

0:	8.6814525E+01
1:	5.4455882E 01
2:	3.8561694E 04
3:	7.4217446E 07

Appendix A4. N_2 Cubic for 1993

Third order fit to NDIR index (J) vs. 1993 Manometric (X) runs adjusted to 4cc volume of 3.7947 and large volume of 5015.09 cc.



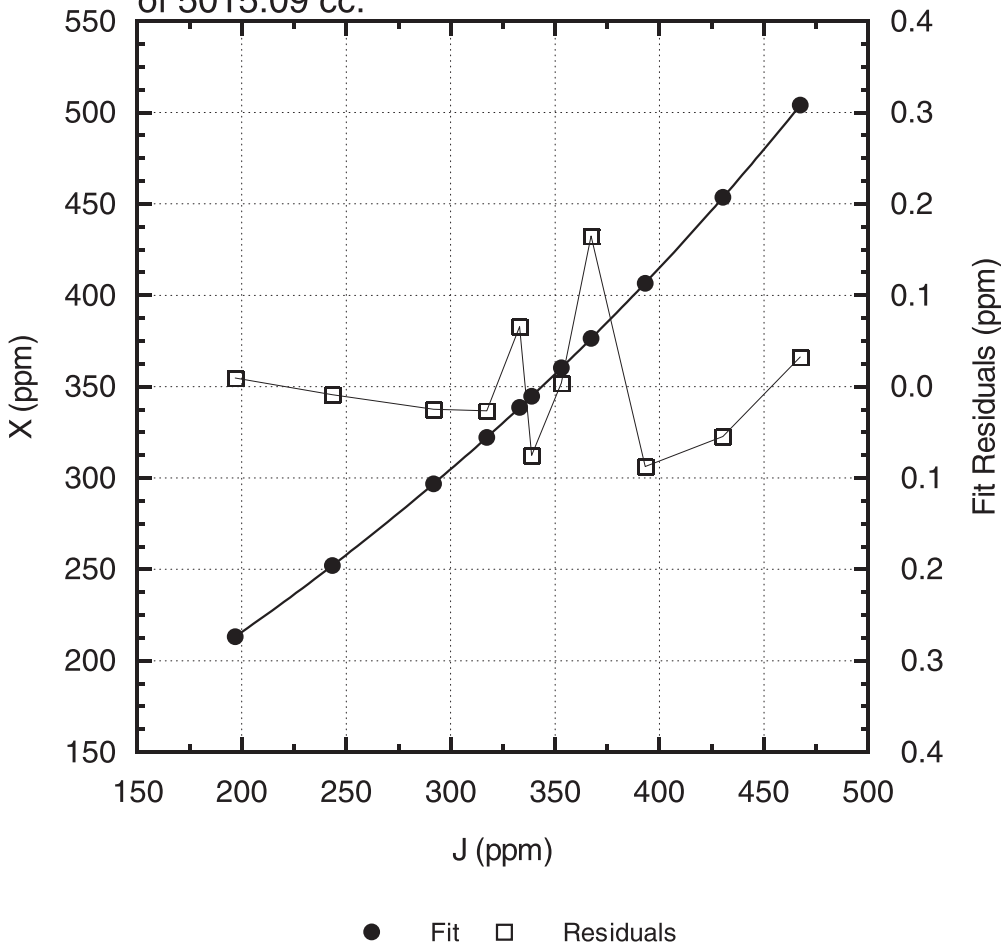
Fit Data and Results

Cyl	J	X	Fit	Resids
2408	178.107	196.892	196.885	0.007
4274	236.208	243.277	243.340	0.063
3753	239.844	246.484	246.437	0.047
7366	274.001	276.719	276.713	0.006
6071	309.146	310.213	310.253	0.040
6078	309.848	310.973	310.949	0.024
4296	319.387	320.533	320.513	0.020
2399	322.948	324.061	324.133	0.072
39239	331.373	332.934	332.811	0.123
39256	343.800	345.839	345.902	0.063
39272	357.424	360.708	360.663	0.045
1540	375.340	380.728	380.744	0.016
35299	404.606	415.227	415.256	0.029
35316	449.780	472.953	472.941	0.012
		Standard error:		0.060
		Number of points:		14

Coefficients:	
0:	8.1695112E+01
1:	5.6585868E 01
2:	3.0877551E 04
3:	8.1620869E 07

Appendix A4. Air Cubic for 1993

Third order fit to NDIR index (J) vs.
1993 Manometric (X) runs adjusted to
4cc volume of 3.7947 and large volume
of 5015.09 cc.



Fit Data and Results

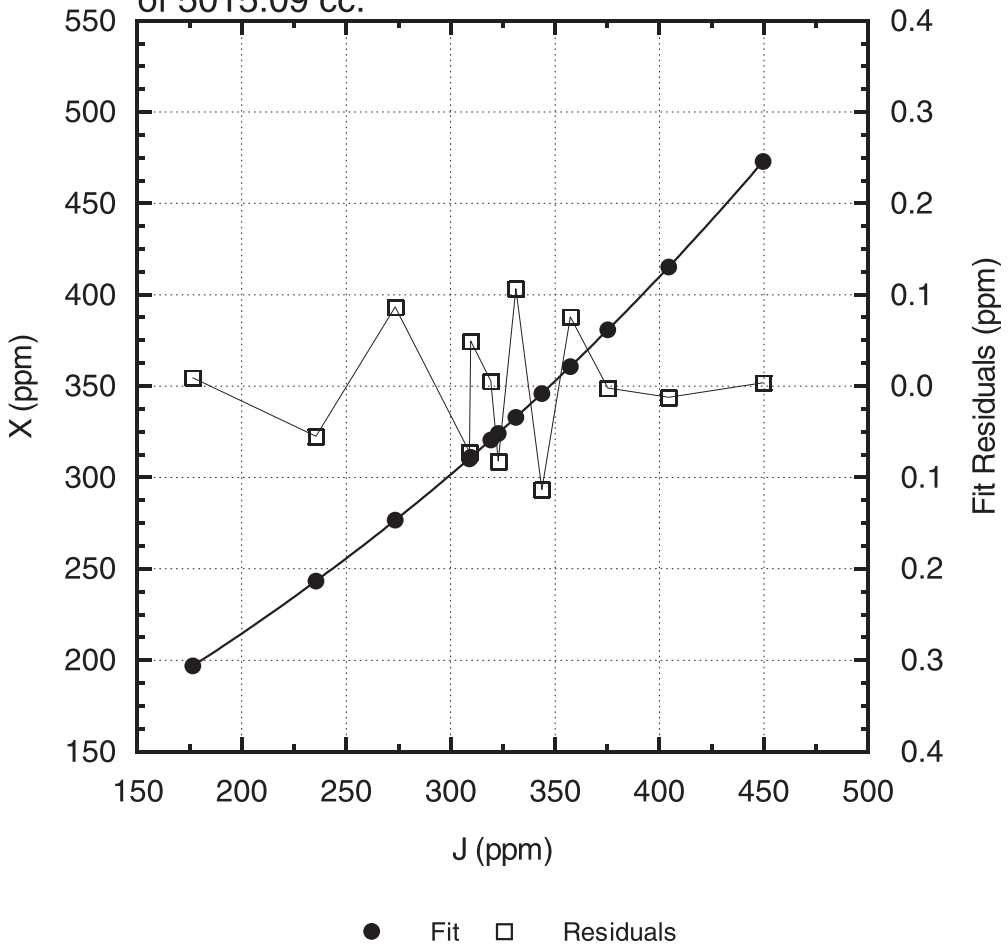
Cyl	J	X	Fit	Resids
71251	196.879	213.174	213.165	0.009
34819	243.410	252.120	252.129	0.009
71286	291.839	296.791	296.816	0.025
71341	317.247	322.131	322.157	0.026
66638	332.923	338.563	338.497	0.066
66625	338.765	344.655	344.730	0.075
66696	353.047	360.308	360.304	0.004
71308	367.176	376.359	376.194	0.165
71370	393.105	406.571	406.658	0.087
71479	430.401	453.552	453.606	0.054
67615	467.337	504.028	503.996	0.032
			Standard error:	0.085
			Number of points:	11

Coefficients:

0:	7.8320108E+01
1:	6.0631894E 01
2:	2.1541476E 04
3:	9.3342364E 07

Appendix A4. N_2 Cubic for 1995

Third order fit to NDIR index (J) vs. 1993 Manometric (X) runs adjusted to 4cc volume of 3.7947 and large volume of 5015.09 cc.



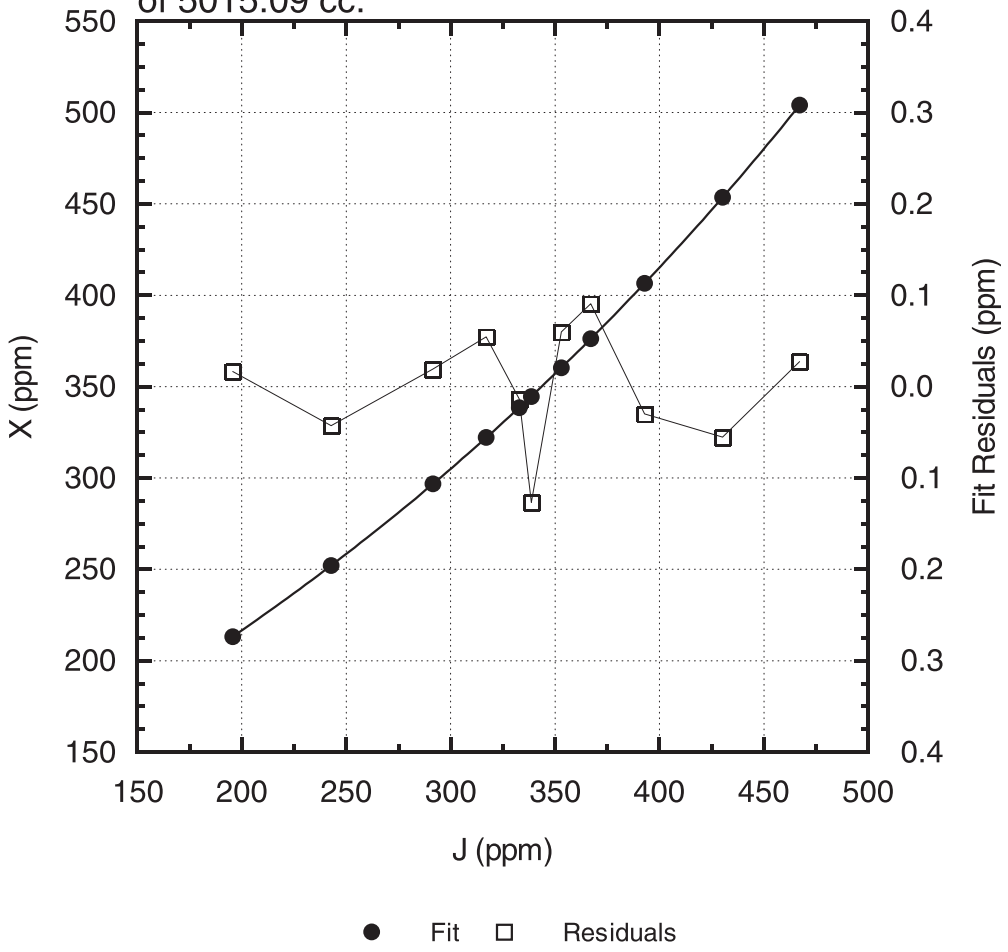
Fit Data and Results

Cyl	J	X	Fit	Resids
2408	176.582	196.892	196.883	0.009
4274	235.472	243.277	243.332	0.055
7366	273.485	276.719	276.632	0.087
6071	308.914	310.213	310.285	0.072
6078	309.560	310.973	310.924	0.049
4296	319.168	320.533	320.527	0.006
2399	322.733	324.061	324.143	0.082
39239	331.183	332.934	332.827	0.107
39256	343.662	345.839	345.952	0.113
39272	357.225	360.708	360.632	0.076
1540	375.162	380.728	380.730	0.002
35299	404.411	415.227	415.239	0.012
35316	449.538	472.953	472.949	0.004
		Standard error:		0.078
		Number of points:		13

Coefficients:	
0:	8.6051334E+01
1:	5.3976669E 01
2:	3.5785910E 04
3:	7.9184346E 07

Appendix A4. Air Cubic for 1995

Third order fit to NDIR index (J) vs.
1995 Manometric (X) runs adjusted to
4cc volume of 3.7937 and large volume
of 5015.09 cc.



Fit Data and Results

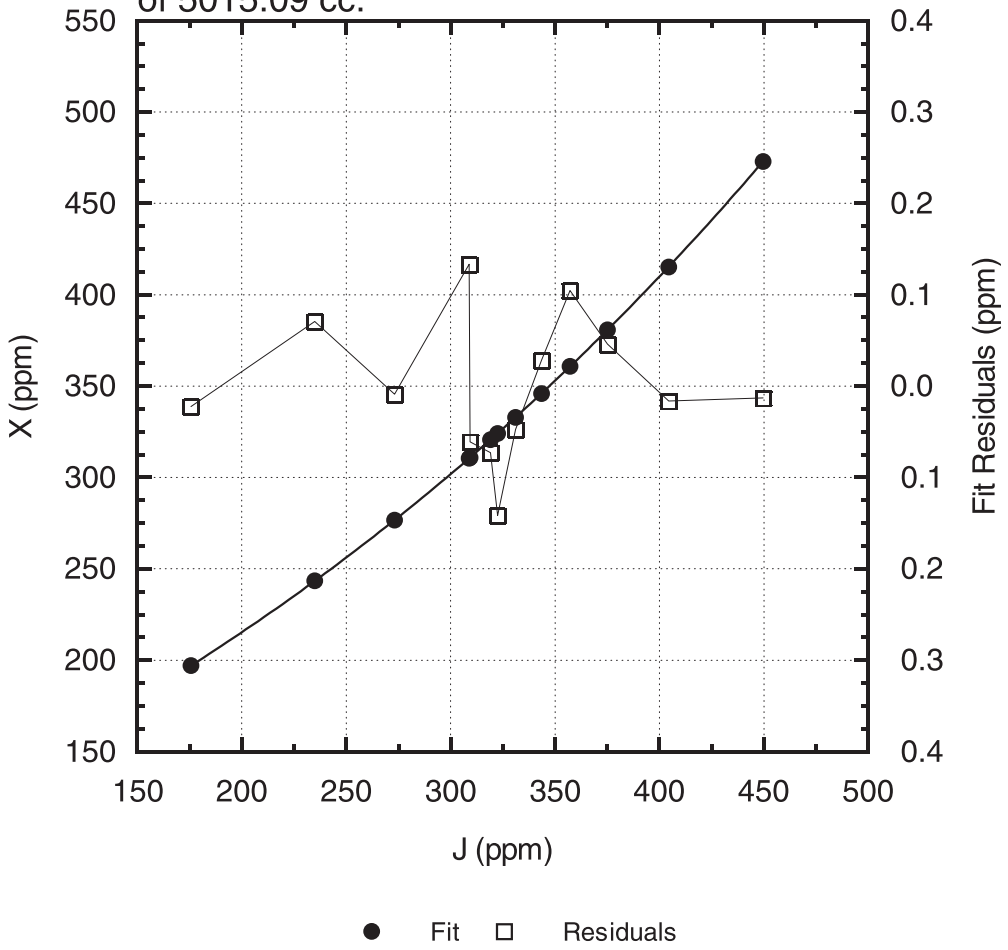
Cyl	J	X	Fit	Resids
71251	195.638	213.216	213.199	0.017
34819	242.822	252.139	252.182	0.043
71286	291.508	296.785	296.766	0.019
71341	317.016	322.156	322.101	0.055
66638	332.818	338.518	338.532	0.014
66625	338.646	344.612	344.739	0.127
66696	352.947	360.376	360.316	0.060
71308	367.022	376.230	376.139	0.091
71370	392.898	406.525	406.555	0.030
71479	430.243	453.588	453.643	0.055
67615	467.106	504.099	504.071	0.028
			Standard error:	0.074
			Number of points:	11

Coefficients:

0:	8.3381002E+01
1:	5.7567879E 01
2:	2.7162295E 04
3:	9.0782356E 07

Appendix A4. N_2 Cubic for 1997

Third order fit to NDIR index (J) vs. 1998 Manometric (X) runs adjusted to 4cc volume of 3.7927 and large volume of 5015.09 cc.



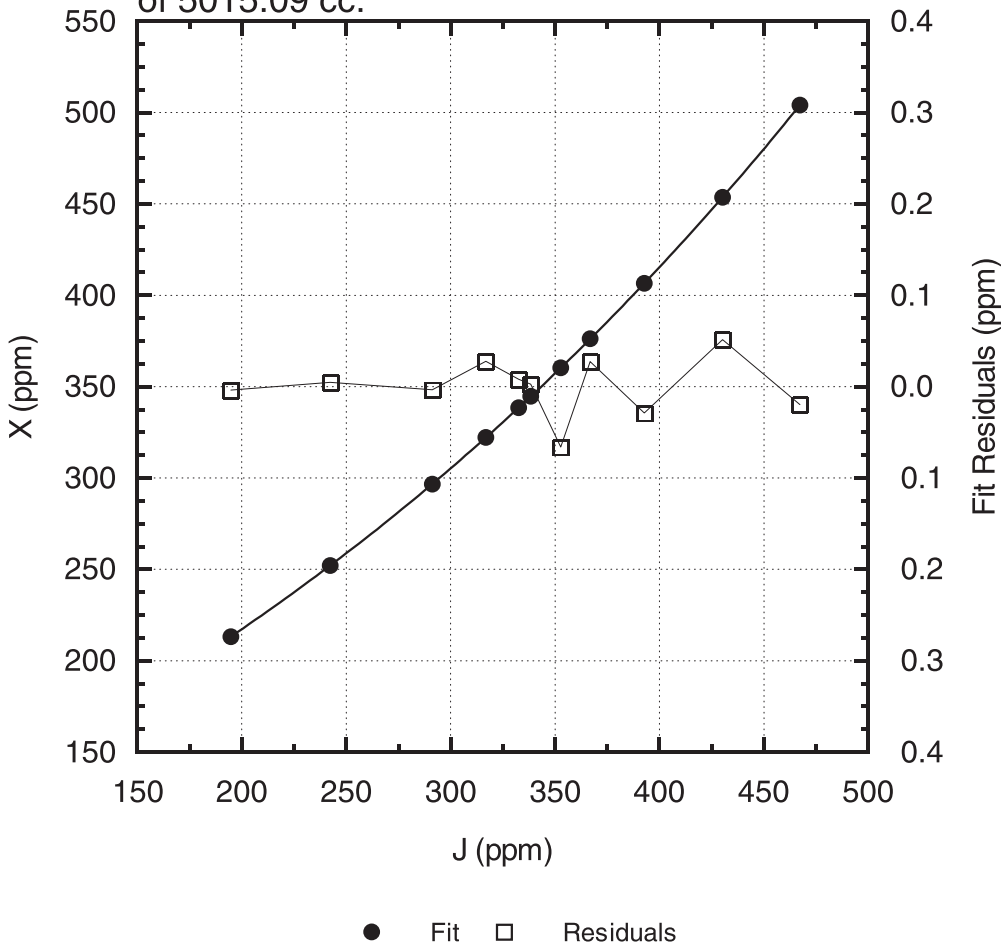
Fit Data and Results

Cyl	J	X	Fit	Resids
2408	175.670	197.010	197.032	0.022
4274	234.933	243.458	243.387	0.071
7366	273.158	276.701	276.710	0.009
6071	308.797	310.590	310.457	0.133
6078	309.343	310.934	310.995	0.061
4296	319.080	320.631	320.704	0.073
2399	322.514	324.037	324.179	0.142
39239	330.993	332.825	332.873	0.048
39256	343.464	345.989	345.960	0.029
39272	357.071	360.763	360.658	0.105
1540	374.999	380.754	380.708	0.046
35299	404.350	415.258	415.274	0.016
35316	449.534	472.934	472.947	0.013
		Standard error:		0.088
		Number of points:		13

Coefficients:	
0:	8.9148097E+01
1:	5.1916988E 01
2:	4.0985144E 04
3:	7.4404874E 07

Appendix A4. Air Cubic for 1997

Third order fit to NDIR index (J) vs.
1998 Manometric (X) runs adjusted to
4cc volume of 3.7927 and large volume
of 5015.09 cc.



Fit Data and Results

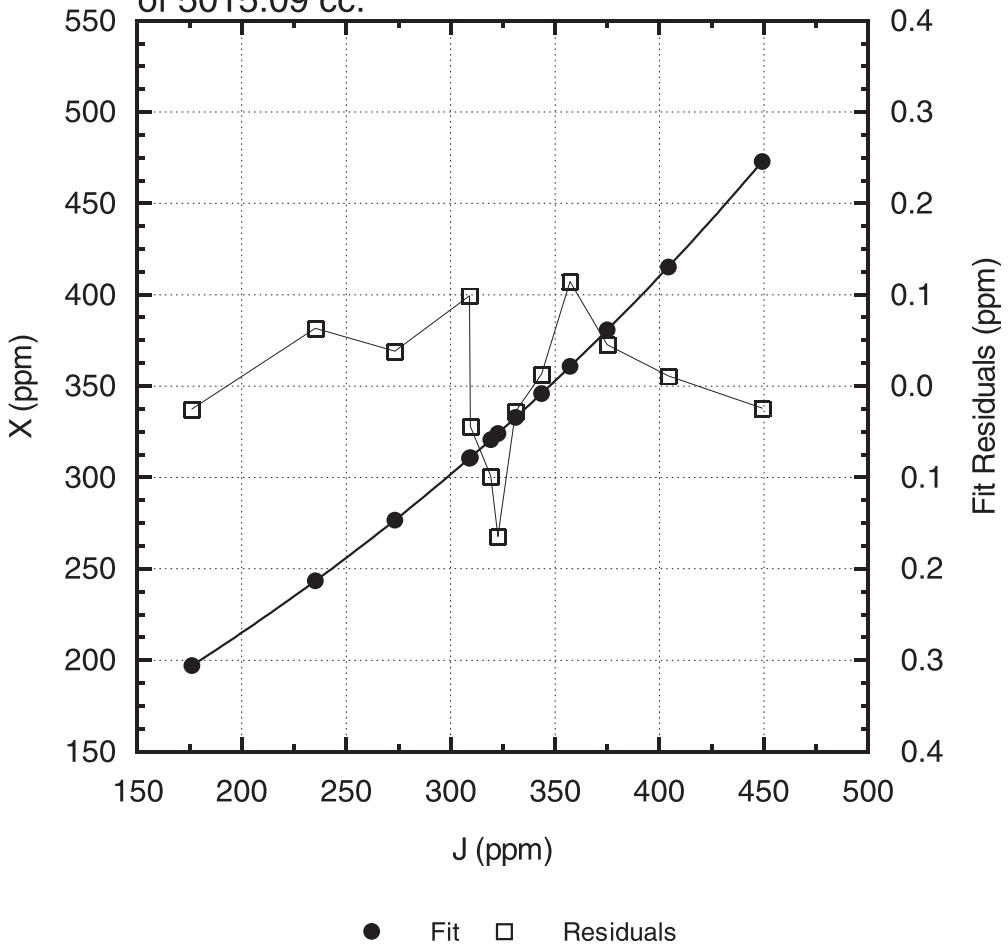
Cyl	J	X	Fit	Resids
71251	194.768	213.244	213.248	0.004
34819	242.340	252.154	252.149	0.005
71286	291.174	296.692	296.695	0.003
71341	316.811	322.153	322.125	0.028
66638	332.575	338.513	338.505	0.008
66625	338.368	344.673	344.670	0.003
66696	352.735	360.243	360.309	0.066
71308	366.825	376.165	376.138	0.027
71370	392.771	406.571	406.600	0.029
71479	430.126	453.638	453.587	0.051
67615	467.206	504.067	504.087	0.020
		Standard error:		0.038
		Number of points:		11

Coefficients:

0:	8.9987233E+01
1:	5.1942899E 01
2:	4.3730304E 04
3:	7.4487425E 07

Appendix A4. N_2 Cubic for 1999

Third order fit to NDIR index (J) vs.
1998 Manometric (X) runs adjusted to
4cc volume of 3.7927 and large volume
of 5015.09 cc.



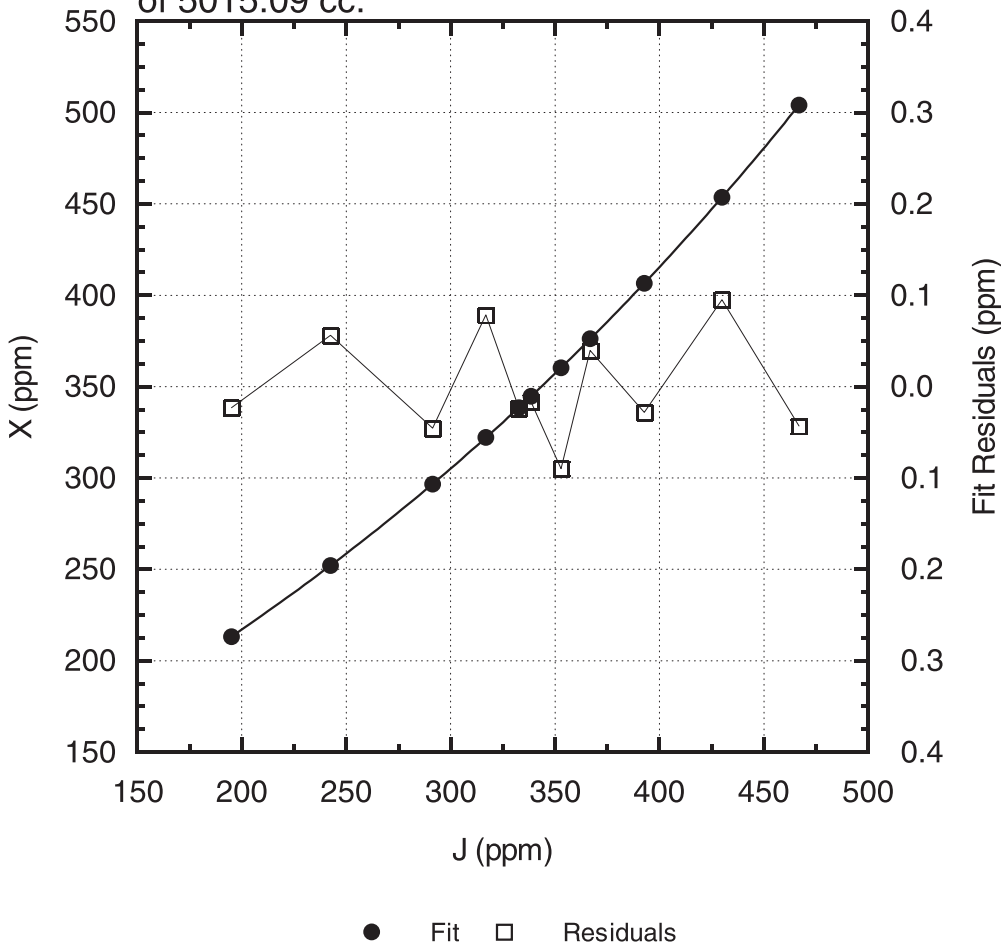
Fit Data and Results

Cyl	J	X	Fit	Resids
2408	176.046	197.010	197.035	0.025
4274	235.150	243.458	243.395	0.063
7366	273.268	276.701	276.663	0.038
6071	308.953	310.590	310.491	0.099
6078	309.446	310.934	310.978	0.044
4296	319.212	320.631	320.730	0.099
2399	322.638	324.037	324.202	0.165
39239	331.061	332.825	332.853	0.028
39256	343.542	345.989	345.976	0.013
39272	357.095	360.763	360.649	0.114
1540	374.984	380.754	380.709	0.045
35299	404.209	415.258	415.247	0.011
35316	449.202	472.934	472.958	0.024
			Standard error:	0.089
			Number of points:	13

Coefficients:	
0:	8.7231727E+01
1:	5.3768175E 01
2:	3.4313233E 04
3:	8.2700524E 07

Appendix A4. Air Cubic for 1999

Third order fit to NDIR index (J) vs.
1998 Manometric (X) runs adjusted to
4cc volume of 3.7927 and large volume
of 5015.09 cc.



Fit Data and Results

Cyl	J	X	Fit	Resids
71251	195.070	213.244	213.267	0.023
34819	242.425	252.154	252.098	0.056
71286	291.325	296.692	296.737	0.045
71341	316.854	322.153	322.075	0.078
66638	332.684	338.513	338.537	0.024
66625	338.458	344.673	344.690	0.017
66696	352.808	360.243	360.333	0.090
71308	366.839	376.165	376.125	0.040
71370	392.725	406.571	406.599	0.028
71479	429.892	453.638	453.543	0.095
67615	466.796	504.067	504.110	0.043
		Standard error:		0.070
		Number of points:		11

Coefficients:

0:	8.7088462E+01
1:	5.4817644E 01
2:	3.3797827E 04
3:	8.6015542E 07

Appendix A5. Convert99A: Fortran Program for Calculation of Mole Fraction from Index

The program calculates mole fractions from APC analyzer index values according to the "X99A" CO_2 calibration scale, for either nitrogen or natural-air CO_2 reference gases. Comments are included, related to updates of the calibration system since 1985 and to changes in the computing program. This version of the program is designed to calculate the I-index, J-index, and mole fraction from an input of any one of the three parameters, and in addition the date of analysis on the APC analyzer, and indication of the type of gas. The program calls on subroutines and functions, described in the following comments.

PROGRAM CONVERT99A (main program)

Inputs to the program are date of analysis on the APC analyzer, type of gas (air (A) or N_2 (N)), and either the I index value (I), J index value (J), or mole fraction (X). The I-index is referred to as Y-57 and the J-index, Y-59, in the program. Depending upon the date of analysis and type of gas, the program diverts to the appropriate subroutines.

SUBROUTINE CALDAY

Central dates for the calibration periods from 1960 to 1999 are listed here.

FUNCTION DAYNO

From the date of analysis, this function calculates the number of days from January 1, 1955. The resulting day number is used in interpolations between central dates of calibration periods.

SUBROUTINE CALxx

The main framework of the program that applies the various calibration conversion equations for particular time periods is located here.

SUBROUTINES CORR1 to CORR3

These subroutines carry out the calculations accounting for the drift in the reference gas system, as formulated for periods prior to 1983. These are described in Keeling et al. [1986] and prior reports on the calibration system.

SUBROUTINE CORR4

Cubic equations are applied to the data, beginning with the 1980 calibration, for nitrogen reference gases. Prior to 1985, the original result is multiplied by the constant factor 1.000503. After the central date of the 1983 calibration, linear interpolations are done for periods between central dates of calibration periods.

SUBROUTINE CORR5

Cubic equations are applied to the data, beginning with the 1983 calibration, for natural-air gases. Prior to 1985 the original result is multiplied by the constant factor 1.000503. Linear interplations by date are done for periods between central dates of calibration periods.

CUBIC FUNCTIONS FOR CO_2-IN-AIR

Calibration equations applicable for the central dates of each calibration period are given as functions named ACUBYY (for example, ACUB85), for natural-air reference gases. The 1983 cubic function is as previously reported [Keeling et al., 1986]. For periods beginning in 1985, the functions are as described in this report.

CUBIC FUNCTIONS FOR CO_2-IN-N_2

Calibration equations applicable for the central dates of each calibration period are given as functions named CUBYY (for example, CUB85), for nitrogen reference gases. Prior to 1985, functions are as previously reported [Keeling et al., 1986]. For periods beginning in 1985, functions are as described in this report.

APPENDIX A5. CONVERT99A: FORTRAN PROGRAM FOR CALCULATION OF MOLE FRACTION FROM INDEX.

```
c                                                                       CONVERT99A
c   conv93all.for 9aug93 dmoss added new 93allsubs

C..PGM READS DATE, I OR J, AND GAS FROM CONSOLE AND PRINTS X
C..LINK WITH CAL** CONVERSION SUBROUTINES.
C.....ORIGINALLY WRITTEN BY M. JONES
C.....MODIFIED 10/17/85 for manometric revisions by S. Lowe
C..INCLUDES SOURCE BLOCK CORRECTION APPROPRIATE ONLY FOR
C....AIR LAB APC

c  modified extensively 30 Jan 96 to run on SUN (efs)

      common /cal5/day74, cdsb0, cdsb
      common /cal/cd60, cd62, cd66, cd70, cd72, cd74, cd78, cd80,
     :            cd81, cd82, cd83, cd85, cd87, cd89, cd90, cd93,
     :            cd95, cd97, cd99

      character gas*1, adate*8, enter*1, air*1, gn2*1, ascale*3
      character inputrec*80, head*38
      dimension idate(3)
      data air, gn2/ 'A', 'N'/

      call CALDAY

   10 ascale = '99A'
      read(ascale(1:2),'(i2)') iscale
      enter = ' '
      write(*,'(/A,$)')
     :   'Do you want to enter I, J, or X? (I/J/X)   '
      read(*,'(A)') enter
      if(enter.eq.' ') go to 100
  15  write(*,'(A)')
     :  'Enter date(yearmmdd)  conc   gas type (A or N)'
      read(*,'(A)') inputrec
      lenQ = lnblnk(inputrec)
      if(lenQ.le.0) go to 100
      read(inputrec,'(A8)') adate
      if(adate.eq.'        ') go to 100
      read(adate,'(2x,3I2)') idate    ! idate is YRMODY
      do i = 80, 1, -1
        read(inputrec(i:i),'(A1)') gas
        if(gas.eq.'a' .or. gas.eq.'A') go to 11
        if(gas.eq.'n' .or. gas.eq.'N') go to 11
      enddo
      write(*,'(/A/)')' No gas indicator detected.'
      go to 15
   11 if(gas.eq.'n') gas = 'N'
      if(gas.eq.'a') gas = 'A'
      write(inputrec,'(A)') inputrec(9:i-1)
      read(inputrec,*) var
      if(enter.eq.'X' .or. enter.eq.'x') THEN
        y59 = var
        do i = 1, 100
          call CALxx(idate(1), gas, y59, dayn, FJ, X)
          if(ABS(X - var) .lt. .001) then
```

APPENDIX A5. CONVERT99A: FORTRAN PROGRAM FOR CALCULATION OF MOLE FRACTION FROM INDEX.

```
            y57 = (y59 - 311.51)/1.2186 + 311.51
            go to 2
          endif
          y59 = y59 - X + var
        enddo
        write(*,'(3A,E14.6)')
     :    'Inverse of CAL ', ascale,' did not converge, X = ', var
      endif

      if(enter.eq.'J' .or. enter.eq.'j') then
         y57 = (var - 311.51)/1.2186 + 311.51
         y59 = var
      endif

      if(enter.eq.'I' .or. enter.eq.'i') then
         y59 = 1.2186*(var - 311.51) + 311.51
         y57 = var
      endif

      call CALxx(idate(1), gas, y59, dayn, FJ, X)

    2 write(head,'(A)')'GAS    DATE          I     J59     X  '
      write(head(36:38),'(A3)') ascale
      write(*,'(/A)') head
      write(*,'(1X,A1,5X,A8,2X,3F8.2)') gas, adate, y57, y59, X
      go to 10

  100 end
c=======================================================================
c                                                                  CALDAY
      subroutine calday

      common /cal5/day74, cdsb0, cdsb
      common /cal/cd60, cd62, cd66, cd70, cd72, cd74, cd78, cd80,
     :            cd81, cd82, cd83, cd85, cd87, cd89, cd90, cd93,
     :            cd95, cd97, cd99

      CDSB0 = DAYNO(72, 6,19)
      CDSB  = DAYNO(80,10,30)

      CD60  = DAYNO(60, 7, 1)
      CD62  = DAYNO(62, 7, 1)
      CD66  = DAYNO(66, 7, 1)
      CD70  = DAYNO(70, 7, 1)
      CD72  = DAYNO(72, 9,28)
      CD74  = DAYNO(74, 8,15)
      CD78  = DAYNO(78, 2,18)
      CD80  = DAYNO(80, 9,19)
      CD81  = DAYNO(81, 9, 7)
      CD82  = DAYNO(82,11,18)
      CD83  = DAYNO(83, 9,17)
      CD85  = DAYNO(85, 7,29)
      CD87  = DAYNO(87,12, 6)
      CD89  = DAYNO(89,03,03)
      CD90  = DAYNO(90, 5,22)
```

APPENDIX A5. CONVERT99A: FORTRAN PROGRAM FOR CALCULATION OF MOLE FRACTION FROM INDEX.

```
      CD93  = DAYNO(93,05,20)
      CD95  = DAYNO(95,07,09)
      CD97  = DAYNO(97,08,19)
      CD99  = DAYNO(99,01,01)

      return
      end

C=======================================================================
c                                                                  DAYNO
c calculates the number of days from Jan 1, 1955
c Value of 'myear' is 2 digit year, Y2K fix will work until 2055.

      function DAYNO(myear, month, mday)
      dimension monthr(12)
      data monthr/31,28,31,30,31,30,31,31,30,31,30,31/

      ndays = 0
      lyear = myear - 1
      if(lyear.lt.55) then
        lyear = lyear + 100
      endif
      do i = 55, lyear
        ndays = ndays + 365
        if(MOD(i,4).eq.0) ndays = ndays + 1
      enddo
      if(month.ne.1) then
        lmonth = month - 1
        j = MOD(myear, 4)
        do i = 1, lmonth
          ndays = ndays + monthr(i)
          if(i.eq.2 .and. j.eq.0) ndays = ndays + 1
        enddo
      endif
      ndays = ndays + mday
      dayno = ndays

      return
      end
C=======================================================================
c                                                                  CALXX
c    26Jan00 pgrm cal99.f
c            efs modified function DAYNO to handle dates > 1999
c
c    29Sep99 pgrm cal99.f (dave moss)
c            changed the APC J59 vs Manometric cubic coeff
c            these have changed to reflect improved manometer volume
c            values.  There are also some minor changes in the values
c            IR Calibration Central Dates.  1985 through 1999.
c
c    30Sep97 pgrm cal97.for
c            uses values in 97 report for determining cubics:
c                   nitrogen 1997
c                   air      1997
c            uses values in 95 report for determining cubics:
```

APPENDIX A5. CONVERT99A: FORTRAN PROGRAM FOR CALCULATION OF MOLE FRACTION FROM INDEX.

```
c                  nitrogen 1987,1989,1990,1993 and 1995
c                  air      1987,1989,1990,1993 and 1995
c
c    25Oct96 pgrm CAL95.for
c            subroutines used in calculating x95 mole fraction values
c            from x95subs.for;3 date 19apr96
c            uses original report values for cubics during 1983 and 1985
c            uses values in 95 report for determining cubics:
c                  nitrogen 1987,1989,1990,1993 and 1995
c                  air      1987,1989,1990,1993 and 1995
c
C**********************************************************************
C
C   SCRIPPS INSTITUTION OF OCEANOGRAPHY: CO2 PROGRAM
C
C        SUBROUTINES TO COMPUTE MOLE FRACTION FOR CO2-IN-N2 AND
C        CO2-IN-AIR BASED ON THE 1985 CALIBRATION.
C            A SINGLE CALL TO CALDAY IS NECESSARY BEFORE CALLING
C            CAL90.  (PROGRAM WRITTEN THIS WAY SO THAT CALDAY IS
C            CALLED ONLY ONCE WHEN MULTIPLE CALCULATIONS OF MOLE
C            FRACTION ARE INVOLVED.)  CAL90 CAN THEN BE CALLED
C            AS MANY TIMES AS DESIRED.
C         INPUTS TO CAL90 ARE:
C             ID: DATE (ARRAY OF 3 2-DIGIT INTEGERS). (YYMMDD)
C             GAS: GAS TYPE (CHARACTER) "A" OR "N"
C             Y59: "J" VALUE (REAL)
C         OUTPUTS OF CAL90:
C             DAYN: DAY NUMBER (REAL) DAYS SINCE 1 JAN. 1955.
C             FJ: DRIFT CORRECTED "J" VALUE (REAL)
C             X: MOLE FRACTION VALUE (REAL)
C
C
C  Manometric revision by S. Lowe  11 October 1985
C
C  Manometric revision by T. Whorf 28 February 1986
C  CORR4 and CORR5 revised to correct illogical error in DAYN which
C   formerly was set to CD85 if DAYN exceeded CD85.  Now DAYN is not
C   reset under any circumstances.
C
C  Updated to include 1987 ndir data  - added:
C        cub87 and acub87 functions with new coefficients derived
C            from 85 manometric and 87 ndir data
C        1987 code to subroutine corr4
C                                            J. Barry 19 January 1988
C
C  added cub90 and acub90 functions from 1990 ndir and 1990 manometric
C  runs  JBarry 9Oct90.

C  ADDED CUB93 AND ACUB93 PRELIM. 12JUL93 DMOSS
C   ADDED CUB89 AND ACUB89          5AUG93 DMOSS
C   CHANGED VALUES IN CUBICS TO MATCH REPORTED VALUES DMOSS 5AUG93
C   TEST OF PRELIMINARY 95 MANO. ADDED FOR AIR ONLY 20OCT95 DMOSS
C
C.....TABLE OF VARIABLES, ARRAYS, AND FUNCTIONS:
C
```

APPENDIX A5. CONVERT99A: FORTRAN PROGRAM FOR CALCULATION OF MOLE FRACTION FROM INDEX.

```
C     NAME (DATA TYPE)       DESCRIPTION IN 1983 CALIBRATION REPORT
C
C     ACUB83 (REAL       "ACUB13".
C            FUNCTION)
C     ACUB85 (REAL       "ACUB15".
C            FUNCTION)
C     ACUB87 (REAL       "ACUB17".
C            FUNCTION)
C     AJ     (REAL)      "JA"="J" AFTER FIRST LEVEL DRIFT CORRECTION.
C     BJ     (REAL)      "JB"="J" AFTER SECOND LEVEL DRIFT CORRECTION.
C     CDyy   (REAL)      CENTRAL DATE FOR CALIBRATION OR CORRECTION
C                        OF YEAR 19yy EXPRESSED AS NUMBER OF DAYS SINCE
C                        1/1/55.
C     CDSB   (REAL)      END DATE FOR SOURCE BLOCK CORRECTION, EXPRESSED AS
C                        THE NUMBER OF DAYS SINCE 1/1/55.
C     CDSB0  (REAL)      START DATE FOR SOURCE BLOCK CORRECTION, EXPRESSED
C                        AS THE NUMBER OF DAYS SINCE 1/1/55.
C     CJ     (REAL)      "JC"="J" AFTER THIRD LEVEL DRIFT CORRECTION.
C     CUB60  (REAL       "CUB1(J+LIN3(J))".
C            FUNCTION)
C     CUB74  (REAL       "CUB1".
C            FUNCTION)
C     CUB80  (REAL       "CUB2".
C            FUNCTION)
C     CUB83  (REAL       "CUB10".
C            FUNCTION)
C     CUB85  (REAL       "CUB14".
C            FUNCTION)
C     CUB87  (REAL       "CUB16".
C            FUNCTION)
C     CUB83I (REAL       INVERSE OF "CUB10".
C            FUNCTION)
C     CUBQ80 (REAL       "CUB9".
C            FUNCTION)
C     CUB80I (REAL       INVERSE OF "CUB9".
C            FUNCTION)
C     DJ     (REAL)      "DELTA J".
C     DJyy   (REAL)      IN GENERAL: DJyy=QUADyy(AJ) OR DJyy=STLNyy(BJ).
C     DJ62   (REAL)      "DELTA J62".
C     DJ66   (REAL)      "DELTA J66".
C     DJ70   (REAL)      "DELTA J70".
C     DJ72   (REAL)      "DELTA J72".
C     DJ78   (REAL)      "DELTA J78".
C     DJ81   (REAL)      "DELTA J81".
C     DJ82   (REAL)      "DELTA J82".
C     DAYN   (REAL)      DATE OF ANALYSIS, EXPRESSED AS NUMBER OF DAYS
C                        SINCE 1/1/55.
C     FJ     (REAL)      "JF"="J" FULLY DRIFT CORRECTED.
C     GAS  (CHARACTER)   INDICATES GAS TYPE: "A"=CO2-IN-AIR, "N"=CO2-IN-N2.
C     ID     (INTEGER    DATE OF ANALYSIS, EXPRESSED AS YY,MM,DD.
C             ARRAY)
C     QUAD70 (REAL       "QUAD4".
C            FUNCTION)
C     QUAD72 (REAL       "QUAD5".
C            FUNCTION)
```

APPENDIX A5. CONVERT99A: FORTRAN PROGRAM FOR CALCULATION OF MOLE FRACTION FROM INDEX.

```
C     QUAD78 (REAL       "QUAD6".
C            FUNCTION)
C     QUAD81 (REAL       "QUAD11" (OF 1983 REPORT ONLY).
C            FUNCTION)
C     QUAD82 (REAL       "QUAD12".
C            FUNCTION)
C     STLN62 (REAL       "LIN7".
C            FUNCTION)
C     STLN66 (REAL       "LIN8".
C            FUNCTION)
C     X      (REAL)      MOLE FRACTION VALUE RETURNED BY ROUTINE.
C     Xyy    (REAL)      IN GENERAL: Xyy = CUByy(Y59).
C     X60    (REAL)      "X3".
C     X74    (REAL)      "X1".
C     X80    (REAL)      "X9" (IF N2); "X13" (IF AIR).
C     X83    (REAL)      "X10".
C     X85    (REAL)      "X14" (IF N2); "X15" (IF AIR).
C     X87    (REAL)      "X16" (IF N2); "X17" (IF AIR).
C     X90    (REAL)      "X18" (IF N2); "X19" (IF AIR).
C     XAIR   (REAL)      MOLE FRACTION VALUE FOR A CO2-IN-AIR GAS.
C     XN2    (REAL)      MOLE FRACTION VALUE FOR A CO2-IN-N2 GAS.
C     XX     (REAL)      "XINTERP".
C     XXX    (REAL)      "XSHIFT".
C     Y59    (REAL)      "J".
C
C=============================================================================
=
C
CAL99A
      SUBROUTINE CALxx(ID,GAS,Y59,DAYN,FJ,X)

      common /cal5/day74, cdsb0, cdsb
      common /cal/cd60, cd62, cd66, cd70, cd72, cd74, cd78, cd80,
     :            cd81, cd82, cd83, cd85, cd87, cd89, cd90, cd93,
     :            cd95, cd97, cd99

      DIMENSION ID(3)
      CHARACTER*1 GAS,AIR,GN2
      DATA AIR,GN2/'A','N'/

      DAYN = DAYNO(ID(1),ID(2),ID(3))
      CALL CORR1(DAYN,Y59,AJ)
      CALL CORR2(DAYN,AJ,BJ)
      CALL CORR3(DAYN,BJ,CJ)
      CALL CORR4(DAYN,CJ,XN2,FJ)

      IF (GAS.EQ.'A' .or. gas.eq.'a') THEN
        CALL CORR5(DAYN,FJ,XAIR)
        X = XAIR
      ELSE
        X = XN2
      END IF

      RETURN
      END
```

APPENDIX A5. CONVERT99A: FORTRAN PROGRAM FOR CALCULATION OF MOLE FRACTION FROM INDEX.

```
C=============================================================================
=
C                                                                          CORR1
      subroutine CORR1(dayn, y59, aj)

      common /cal5/day74, cdsb0, cdsb
      common /cal/cd60, cd62, cd66, cd70, cd72, cd74, cd78, cd80,
     :            cd81, cd82, cd83, cd85, cd87, cd89, cd90, cd93,
     :            cd95, cd97, cd99

C Extrapolate prior to CD60.
      if(dayn.le.CD74) then
        x60 = CUB60(y59)
        x74 = CUB74(y59)
        Xx  = (x74*(dayn-CD60) + x60*(CD74-dayn))/(CD74-CD60)
        aj  = CUB80I(Xx)
        go to 50
      endif

      if(dayn.le.CD80) then
        x74 = CUB74(y59)
        x80 = CUB80(y59)
        Xx  = (x80*(dayn-CD74) + x74*(CD80-dayn))/(CD80-CD74)
        aj  = CUB80I(Xx)
        go to 50
      endif

      if(dayn.le.CD83) then
        x80 = CUBQ80(y59)
        x83 = CUB83(y59)
        Xx  = (x83*(dayn-CD80) + x80*(CD83-dayn))/(CD83-CD80)
        aj  = CUB83I(Xx)
        go to 50
      endif

      aj = y59

   50 return
      end
C=============================================================================
C                                                                          CORR2
      subroutine CORR2(dayn, aj, bj)

      common /cal5/day74, cdsb0, cdsb
      common /cal/cd60, cd62, cd66, cd70, cd72, cd74, cd78, cd80,
     :            cd81, cd82, cd83, cd85, cd87, cd89, cd90, cd93,
     :            cd95, cd97, cd99

      QUAD70(aj) =  7.036 + aj*(-0.051734 + 0.93176E-4*aj)
      QUAD72(aj) =  6.566 + aj*(-0.051026 + 0.93967E-4*aj)
      QUAD78(aj) = -0.444 + aj*( 0.005385 - 0.12695E-4*aj)
      QUAD81(aj) =  0.110 + aj*(-0.003606 + 0.09029E-4*aj)
      QUAD82(aj) = -4.202 + aj*( 0.021108 - 0.26370E-4*aj)

      dj = 0.0
```

APPENDIX A5. CONVERT99A: FORTRAN PROGRAM FOR CALCULATION OF MOLE FRACTION FROM INDEX.

```
      if(dayn.le.CD70) then
        if(dayn.lt.CD60) go to 100
        dj70 = QUAD70(aj)
        dj   = (dayn-CD60)/(CD70-CD60)*dj70
        go to 100
      endif

      if(dayn.le.CD72) then
        dj70 = QUAD70(aj)
        dj72 = QUAD72(aj)
        dj   = (DJ72*(dayn-CD70)+DJ70*(CD72-DAYN))/(CD72-CD70)
        go to 100
      endif

      if(dayn.le.CD74) then
        dj72 = QUAD72(aj)
        dj   = (CD74-dayn)/(CD74-CD72)*dj72
        go to 100
      endif

      if(dayn.le.CD78) then
        dj78 = QUAD78(aj)
        dj   = (dayn-CD74)/(CD78-CD74)*dj78
        go to 100
      endif

      if(dayn.le.CD80) then
        dj78 = QUAD78(aj)
        dj   = (CD80-dayn)/(CD80-CD78)*dj78
        go to 100
      endif

      if(dayn.le.CD81) then
        dj81 = QUAD81(aj)
        dj   = dj81*(dayn-CD80)/(CD81-CD80)
        go to 100
      endif

      if(dayn.le.CD82) then
        dj81 = QUAD81(aj)
        dj82 = QUAD82(aj)
        dj   = (dj82*(dayn-CD81) + dj81*(CD82-dayn))/(CD82-CD81)
        go to 100
      endif

      if(dayn.le.CD83) then
        dj82 = QUAD82(aj)
        dj   = dj82*(CD83-dayn)/(CD83-CD82)
        go to 100
      endif

  100 bj = aj + dj
      return
      end
```

APPENDIX A5. CONVERT99A: FORTRAN PROGRAM FOR CALCULATION OF MOLE FRACTION FROM INDEX.

```
c=============================================================================
c                                                                        CORR3
      subroutine CORR3(dayn, bj, cj)

      common /cal5/day74, cdsb0, cdsb
      common /cal/cd60, cd62, cd66, cd70, cd72, cd74, cd78, cd80,
     :            cd81, cd82, cd83, cd85, cd87, cd89, cd90, cd93,
     :            cd95, cd97, cd99

      STLN62(bj) = -1.736 + 0.005661*bj
      STLN66(bj) =  3.059 - 0.009219*bj

      dj = 0.0

      if(dayn.le.CD62) then
        if(dayn.le.CD60) go to 10
        dj62 = STLN62(bj)
        dj   = (dayn - CD60) / (CD62 - CD60) * dj62
        go to 10
      endif

      if(dayn.le.CD66) then
        dj62 = STLN62(bj)
        dj66 = STLN66(bj)
        dj   = (dj66*(dayn - CD62) + dj62*(CD66 - dayn))/(CD66 - CD62)
        go to 10
      endif

      if(dayn.le.CD70) then
        dj66 = STLN66(bj)
        dj   = (CD70 - dayn) / (CD70 - CD66) * dj66
        go to 10
      endif

   10 cj = bj + dj
      return
      end
c=============================================================================
c                                                                        CORR4
      subroutine CORR4(dayn, cj, xn2, fj)
c     modified 26 Jan 2000 to include 97 and 99 calibrations

      common /cal5/day74, cdsb0, cdsb
      common /cal/cd60, cd62, cd66, cd70, cd72, cd74, cd78, cd80,
     :            cd81, cd82, cd83, cd85, cd87, cd89, cd90, cd93,
     :            cd95, cd97, cd99

      if(dayn.le.CD80) then
        xxx = CUBQ80(cj)
        xn2 = xxx
        xn2 = xn2*1.000503     ! mod 26Jan2000 from VAX CAL99 routine
        fj  = CUB83i(xxx)
        return
      endif
```

APPENDIX A5. CONVERT99A: FORTRAN PROGRAM FOR CALCULATION OF MOLE FRACTION FROM INDEX.

```
      if(dayn.le.CD83) then
        fj  = cj
        xn2 = CUB83(fj)
        xn2 = xn2*1.000503     ! mod 26Jan2000 from VAX CAL99 routine
        return
      endif

      if(dayn.le.CD85) then
        fj = cj
        x83 = CUB83(fj)
        x83 = x83*1.000503     ! mod 26Jan2000 from VAX CAL99 routine
        x85 = CUB85(fj)
        xn2 = (x85*(dayn-CD83) + x83*(CD85-dayn))/(CD85 - CD83)
        return
      endif

      if(dayn.le.CD87) then
        fj = cj
        x85 = CUB85(fj)
        x87 = CUB87(fj)
        xn2 = (x87*(dayn-CD85) + x85*(CD87-dayn))/(CD87 - CD85)
        return
      endif

      if(dayn.le.CD89) then
        fj = cj
        x87 = CUB87(fj)
        x89 = CUB89(fj)
        xn2 = (x89*(dayn-CD87) + x87*(CD89-dayn))/(CD89 - CD87)
        return
      endif

      if(dayn.le.CD90) then
        fj = cj
        x89 = CUB89(fj)
        x90 = CUB90(fj)
        xn2 = (x90*(dayn-CD89) + x89*(CD90-dayn))/(CD90 - CD89)
        return
      endif

      if(dayn.le.CD93) then
        fj = cj
        x90 = CUB90(fj)
        x93 = CUB93(fj)
        xn2 = (x93*(dayn-CD90) + x90*(CD93-dayn))/(CD93 - CD90)
        return
      endif

      if(dayn.le.CD95) then
        fj = cj
        x93 = CUB93(fj)
        x95 = CUB95(fj)
        xn2 = (x95*(dayn-CD93) + x93*(CD95-dayn))/(CD95 - CD93)
        return
      endif
```

APPENDIX A5. CONVERT99A: FORTRAN PROGRAM FOR CALCULATION OF MOLE FRACTION FROM INDEX.

```
      if(dayn.le.CD97) then
        fj = cj
        x95 = CUB95(fj)
        x97 = CUB97(fj)
        xn2 = (x97*(dayn-CD95) + x95*(CD97-dayn))/(CD97 - CD95)
        return
      endif

      if(dayn.le.CD99) then
        fj = cj
        x97 = CUB97(fj)
        x99 = CUB99(fj)
        xn2 = (x99*(dayn-CD97) + x97*(CD99-dayn))/(CD99 - CD97)
        return
      endif

      fj = cj
      xn2 = CUB99(fj)
      return

      end
c=======================================================================
c                                                                      CORR5
c co2-in-air gas mixtures
c note: ascarite trap cleaned on CDSB0,
c       contaminated and not cleaned again until CDSB.
c mod for use on 1, 30 Jan 1996, efs

      subroutine corr5(dayn, fj, xair)

      common /cal5/day74, cdsb0, cdsb
      common /cal/cd60, cd62, cd66, cd70, cd72, cd74, cd78, cd80,
     :            cd81, cd82, cd83, cd85, cd87, cd89, cd90, cd93,
     :            cd95, cd97, cd99

      if(dayn.le.CD83) then
        if(dayn.lt.CDSB .and. dayn.ge.CDSB0) fj = fj + 0.00033*fj
        xair = ACUB83(fj)
        xair = xair*1.000503  ! efs added 26Jan2000: as in VAX CAL99
        return
      endif

      if(dayn.le.CD85) then
        x83 = ACUB83(fj)
        x83 = x83*1.000503    ! efs added 26Jan2000: as in VAX CAL99
        x85 = ACUB85(fj)
        xair = (x85*(dayn-CD83) + x83*(CD85-dayn))/(CD85 - CD83)
        return
      endif

      if(dayn.le.CD87) then
        x85 = ACUB85(fj)
        x87 = ACUB87(fj)
        xair = (x87*(dayn-CD85) + x85*(CD87-dayn))/(CD87 - CD85)
```

APPENDIX A5. CONVERT99A: FORTRAN PROGRAM FOR CALCULATION OF MOLE FRACTION FROM INDEX.

```
        return
      endif

      if(dayn.le.CD89) then
        x87 = ACUB87(fj)
        x89 = ACUB89(fj)
        xair = (x89*(dayn-CD87) + x87*(CD89-dayn))/(CD89 - CD87)
        return
      endif

      if(dayn.le.CD90) then
        x89 = ACUB89(fj)
        x90 = ACUB90(fj)
        xair = (x90*(dayn-CD89) + x89*(CD90-dayn))/(CD90 - CD89)
        return
      endif

      if(dayn.le.CD93) then
        x90 = ACUB90(fj)
        x93 = ACUB93(fj)
        xair = (x93*(dayn-CD90) + x90*(CD93-dayn))/(CD93 - CD90)
        return
      endif

      if(dayn.le.CD95) then
        x93 = ACUB93(fj)
        x95 = ACUB95(fj)
        xair = (x95*(dayn-CD93) + x93*(CD95-dayn))/(CD95 - CD93)
        return
      endif

      if(dayn.le.CD97) then
        x95 = ACUB95(fj)
        x97 = ACUB97(fj)
        xair = (x97*(dayn-CD95) + x95*(CD97-dayn))/(CD97 - CD95)
        return
      endif

      if(dayn.le.CD99) then
        x97 = ACUB97(fj)
        x99 = ACUB99(fj)
        xair = (x99*(dayn-CD97) + x97*(CD99-dayn))/(CD99 - CD97)
        return
      endif

      xair = ACUB99(fj)
      return

      end
C=======================================================================

C
C AIR CUBICS 99A
C
```

APPENDIX A5. CONVERT99A: FORTRAN PROGRAM FOR CALCULATION OF MOLE FRACTION FROM INDEX.

```
C=======================================================================
C                                                                      ACUB83
C  CUBIC FUNCTIONS FOR CO2-IN-AIR

      function ACUB83(c83)
      ACUB83 = 88.579 + c83*(0.529183 +
     :                 c83*(4.4239E-04 + 6.5448E-07*c83))
      return
      end
C=======================================================================
C=======================================================================
=
c 29 Sep 1999: djm changed coefficients in ACUB95 - ACUB99
C=======================================================================
=
C=======================================================================
C                                                                      ACUB85
C  CUBIC FUNCTIONS FOR CO2-IN-AIR

      function ACUB85(c85)
      ACUB85 = 87.41915 + c85*(0.5408285 +
     :                   c85*(4.048589E-4 + 6.972401E-7*c85))
      return
      end
C=======================================================================

C=======================================================================
C                                                                      ACUB87
C  CUBIC FUNCTIONS FOR CO2-IN-AIR

      function ACUB87(c87)
      ACUB87 = 88.50291 + c87*(0.5322630 +
     :                   c87*(4.254044E-4 + 6.875569E-7*c87))
      return
      end
C=======================================================================

C=======================================================================
C                                                                      ACUB89
C  CUBIC FUNCTIONS FOR CO2-IN-AIR

      function ACUB89(c89)
      ACUB89 = 85.54302 + c89*(0.5626305 +
     :                   c89*(3.266791E-4 + 7.907150E-7*c89))
      return
      end
C=======================================================================

C=======================================================================
C                                                                      ACUB90
C  CUBIC FUNCTIONS FOR CO2-IN-AIR

      function ACUB90(c90)
      ACUB90 = 86.81452 + c90*(0.5445588 +
     :                   c90*(3.856169E-4 + 7.421745E-7*c90))
```

APPENDIX A5. CONVERT99A: FORTRAN PROGRAM FOR CALCULATION OF MOLE FRACTION FROM INDEX.

```
      return
      end
C=======================================================================

C=======================================================================
C                                                                    ACUB93
c  CUBIC FUNCTIONS FOR CO2-IN-AIR

      function ACUB93(c93)
      ACUB93 = 78.32011 + c93*(0.6063189 +
     :                    c93*(2.154148E-4 + 9.334236E-7*c93))
      return
      end
C=======================================================================

C=======================================================================
C                                                                    ACUB95
c  CUBIC FUNCTIONS FOR CO2-IN-AIR

      function ACUB95(c95)
      ACUB95 = 83.38100 + c95*(0.5756788 +
     :                    c95*(2.716229E-4 + 9.078236E-7*c95))
      return
      end
C=======================================================================

C=======================================================================
=
C
ACUB97
c  CUBIC FUNCTIONS FOR CO2-IN-AIR

      function ACUB97(c97)
      ACUB97 = 89.98723 + c97*(0.5194290 +
     :                    c97*(4.373030E-4 + 7.448742E-7*c97))
      return
      end
C=======================================================================
=
C
ACUB99
c  CUBIC FUNCTIONS FOR CO2-IN-AIR

      function ACUB99(c99)
      ACUB99 = 87.08846 + c99*(0.5481764 +
     :                    c99*(3.379783E-4 + 8.601554E-7*c99))
      RETURN
      END
C=======================================================================
=

C
c N2 CUBICS 99A
C
```

APPENDIX A5. CONVERT99A: FORTRAN PROGRAM FOR CALCULATION OF MOLE FRACTION FROM INDEX.

```
C=======================================================================
C                                                                  CUB60
C  CUBIC FUNCTION FOR CO2-IN-N2

      function CUB60(a60)
      dj  = 0.576 - 0.005011*a60
      a74 = a60 + dj
      CUB60 = CUB74(a74)
      return
      end
C=======================================================================

C=======================================================================
C                                                                  CUB74
C  CUBIC FUNCTION FOR CO2-IN-N2

      function CUB74(a74)
      CUB74 = 77.455 + a74*(0.573302 +
     :                a74*(3.5735E-04 + 6.7618E-07*a74))
      return
      end
C=======================================================================

C=======================================================================
C                                                                  CUB80
C  CUBIC FUNCTION FOR CO2-IN-N2

      function CUB80(a80)
      CUB80 = 84.370 + a80*(0.542223 +
     :                a80*(4.2284E-04 + 5.8862E-07*a80))
      return
      end
C=======================================================================

C=======================================================================
C                                                                 CUB80I
C  CUBIC FUNCTION FOR CO2-IN-N2

      function CUB80I(x)
      aj = x
      do i = 1, 100
        xx = CUB80(aj)
        if(ABS(xx-x) .lt. .001) go to 20
        aj = aj - xx + x
      enddo
      write(*,'(A,E14.6)')
     :   ' Inverse of 1980 cubic did not converge, X = ', x

   20 CUB80I = aj
      return
      end
C=======================================================================

C=======================================================================
C                                                                 CUBQ80
```

APPENDIX A5. CONVERT99A: FORTRAN PROGRAM FOR CALCULATION OF MOLE FRACTION FROM INDEX.

```
C  CUBIC FUNCTION FOR CO2-IN-N2
C  THIS FIT INCLUDES QUARTERLY RUNS ON THE NEW N2 MANOS AROUND 1980

      function CUBQ80(a80)
      CUBQ80 = 84.776 + a80*(0.537732 +
     :                      a80*(4.3849E-04 + 5.7171E-07*a80))
      return
      end
C=======================================================================

C=======================================================================
C                                                                   CUB83
c  CUBIC FUNCTION FOR CO2-IN-N2

      function CUB83(a83)
      CUB83 = 86.946 + a83*(0.537883 +
     :                 a83*(3.8471E-04 + 6.8562E-07*a83))
      return
      end
C=======================================================================

C=======================================================================
C                                                                  CUB83I
c  CUBIC FUNCTION FOR CO2-IN-N2

      function CUB83I(x)
      aj = x
      do i = 1, 100
        xx = CUB83(aj)
        if(ABS(xx-x) .lt. .001) go to 20
        aj = aj - xx + x
      enddo
      write(*,'(A,E14.6)')
     :    ' Inverse of 1983 cubic did not converge, X = ', x

   20 CUB83I = aj
      return
      end
C=======================================================================
C=======================================================================
=
c 29 Sep 1999: djm changed coefficients in CUB85 - CUB99
C=======================================================================
=
C=======================================================================
C                                                                   CUB85
c  CUBIC FUNCTION FOR CO2-IN-N2

      function CUB85(a85)
      CUB85 = 87.51316 + a85*(0.5324440 +
     :                  a85*(4.016849E-4 + 6.720037E-7*a85))
      return
      end
C=======================================================================
```

APPENDIX A5. CONVERT99A: FORTRAN PROGRAM FOR CALCULATION OF MOLE FRACTION FROM INDEX.

```
C=======================================================================
C                                                                    CUB87
C  CUBIC FUNCTION FOR CO2-IN-N2

      function CUB87(a87)
      CUB87 = 89.35812 + a87*(0.5164008 +
     :                   a87*(4.448049E-4 + 6.413108E-7*a87))
      return
      end
C=======================================================================

C=======================================================================
C                                                                    CUB89
C  CUBIC FUNCTION FOR CO2-IN-N2

      function CUB89(a89)

      CUB89 = 86.30291 + a89*(0.5475480 +
     :                   a89*(3.418023E-4 + 7.527658E-7*a89))
      return
      end
C=======================================================================

C=======================================================================
C                                                                    CUB90
C  CUBIC FUNCTION FOR CO2-IN-N2

      function CUB90(a90)
      CUB90 = 87.13737 + a90*(0.5337088 +
     :                   a90*(3.876065E-4 + 7.175689E-7*a90))
      return
      end
C=======================================================================

C=======================================================================
C                                                                    CUB93
C  CUBIC FUNCTION FOR CO2-IN-N2

      function CUB93(a93)
      CUB93 = 81.69511 + a93*(0.5658587 +
     :                   a93*(3.087755E-4 + 8.162087E-7*a93))
      return
      end
C=======================================================================

C=======================================================================
C                                                                    CUB95
C  CUBIC FUNCTION FOR CO2-IN-N2

      function CUB95(a95)
      CUB95 = 86.05133 + a95*(0.5397667 +
     :                   a95*(3.578591E-4 + 7.918435E-7*a95))
      return
      end
C=======================================================================
```

APPENDIX A5. CONVERT99A: FORTRAN PROGRAM FOR CALCULATION OF MOLE FRACTION FROM INDEX.

```
C=======================================================================
=
C
CUB97
c  CUBIC FUNCTION FOR CO2-IN-N2

      function CUB97(a97)
      CUB97 = 89.14810 + a97*(0.5191699 +
     :                   a97*(4.098514E-4 + 7.440487E-7*a97))
      return
      end
C=======================================================================
=
C
CUB99
C=======================================================================
=
C
c  CUBIC FUNCTION FOR CO2-IN-N2

      function CUB99(a99)
      CUB99 = 87.23173 + a99*(0.5376818 +
     :                   a99*(3.431323E-4 + 8.270052E-7*a99))
      return
      end
```