REPORT OF
AIR EMISSIONS TESTS
AND VOC REMOVAL EFFICIENCY
FOR
LOUISIANA PACIFIC CORPORATION
CORRIGAN OSB FACILITY

Corrigan, Texas
June 2, 1995

Louisiana Pacific Corporation
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August 21, 1995

Mr. Michael F. Wood, Director
Mr. Laxmi Kesari
Multi Media Enforcement & Strategic
Planning Division
U.S. EPA
Aerials Rios Blvd.
1200 Pennsylvania N.W., 7th Floor
Room 3119C
Washington, D.C. 20004

Re: Clean Air Enforcement Action - United States v. Louisiana-Pacific Corporation, No. CV 93-0869 (W.D. La.)

Dear Gentlemen:

Louisiana-Pacific Corporation submits as specified in Section C., Part iii., Paragraph 64 for the above referenced Consent Decree, the Air Emission Test Report for the Corrigan, Texas Oriented Strandboard plant. Testing was conducted June 2, 1995.

Please contact the Environmental Affairs Department if you have any questions regarding the Report.

Sincerely,

Elizabeth T. Smith

Elizabeth T. Smith, Director
Environmental Affairs

ETS:mjv

Enclosure

ENVIRONMENTAL MONITORING LABORATORIES, INC.

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July 18, 1995

Subject: Louisiana Pacific Corporation
Corrigan, Texas

On June 2, 1995, Environmental Monitoring Laboratories performed air emissions testing for Louisiana Pacific Corporation's oriented strand board (OSB) facility in Corrigan, Texas. L.P. operates three OSB dryers which exhaust to a single regenerative thermal oxidizer (RTO) for emissions control. Testing was performed to determine emissions of particulate matter (PM), volatile organic compounds (VOC), formaldehyde (HCOH) nitrogen oxides (NOx), and carbon monoxide (CO) from the (RTO). Testing was also performed at each of the three dryer inlets to determine removal efficiency.

Test Results: FILT. only

	PM		VOC as C		HCOH		CO		NOx	
	#/hr.	gr/dscf	#/hr.	ppm	#/hr.	ppm	#/hr.	ppm	#/hr.	ppm
RTO OUTLET	**8.28**	**0.009**	**3.48**	**17.8**	**0.68**	**1.39**	**102.6**	**216**	**19.21**	**25**
Dryer No. 1	31.05	0.124	53.58	940	0.91	8.2	25.92	201	4.64	22
Dryer No. 2	26.85	0.102	44.83	736	0.74	4.9	6.97	52	5.13	24
Dryer No. 3	23.20	0.098	34.58	649	0.61	4.5	16.59	138	3.81	20
INLET TOTAL (#/hr)	**81.10**		**133.0**		**2.46**		**49.48**		**13.58**	
REMOVAL EFFICIENCY	**89.8**		**97.4**		**72.4**		**N/A**		**N/A**	

The testing project was coordinated by Dr. James T. Boswell of Louisiana Pacific Corporation. Danny Russell of Environmental Monitoring laboratories coordinated sample collection and analysis and report preparation. Danny Russell of Environmental Monitoring laboratories coordinated sample collection and analysis and report preparation. Armstrong Environmental performed testing at the RTO inlets. RTO outlet formaldehyde samples were shipped to Oxford Laboratories in Wilmington, North Carolina, for analysis. Otherwise custody of the outlet samples was limited to Mr. Russell.

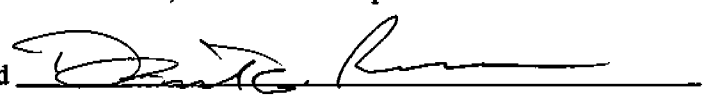
Following is a report of the test.

REPORT OF AIR EMISSIONS TESTS FOR
LOUISIANA PACIFIC CORPORATION
CORRIGAN OSB FACILITY
CORRIGAN, TEXAS
JUNE 2, 1995

CONTENTS

REPORT CERTIFICATION

I certify that I have examined the information submitted herein, and based upon my inquires of those responsible for obtaining the data or upon my direct acquisition of data, I believe the submitted information is true, accurate and complete.

Signed 

Daniel G. Russell

1.0 TEST RESULTS:

The following tables present the measured flow parameters and test results for air emissions and inlet loading samples taken on June 2, 1995, for the RTO and three dryer outlets at Louisiana Pacific Corporation 's OSB facility in Corrigan, Texas.

1.0 OSB RTO

1.1.2 PM/NOx/CO Emissions Test

Run No.		1	2	3	AVG.
Date		6/2/95	6/2/95	6/2/95	------
Time Start		0830	1013	1147	----
Time End		0933	1116	1250	-----
PARTICULATE EMISSIONS	#/hr	10.12	8.44	6.28	8.28
PARTICULATE EMISSIONS	gr/dscf	0.011	0.009	0.006	0.009
CO EMISSIONS	#/hr	111.68	125.36	70.64	102.56
CO EMISSIONS	ppm	240	263	144	216
NOx EMISSIONS	#/hr	20.34	17.79	19.50	19.21
NOx EMISSIONS	ppm	27	23	24	25
VOLUMETRIC FLOWRATE	acfm	204230	205711	207776	205906
VOLUMETRIC FLOWRATE	dscfm	106675	109275	112858	109603
VELOCITY	ft./sec.	68.4	68.9	69.6	69.0
STACK TEMPERATURE	°F	361	361	370	364
MOISTURE	%	18.1	16.8	14.0	16.3
SAMPLE RATE	% isokinetic	105	103	98	102

OSB RTO

1.1.2 HCHO/VOC Emissions Test

Run No.		1	2	3	AVG.
Date		6/2/95	6/2/95	6/2/95	——
Time Start		0831	1014	1148	——
Time End		0934	1117	1257	——
FORMALDEHYDE EMISSIONS	#/hr	0.728	0.853	0.458	0.680
FORMALDEHYDE EMISSIONS	ppm	1.49	1.78	0.91	1.39
VOC EMISSIONS	#/hr as C	3.70	4.34	2.40	3.48
VOC EMISSIONS	ppm as C	18.9	22.7	11.9	17.8
VOLUMETRIC FLOWRATE	acfm	199152	193778	199933	197621
VOLUMETRIC FLOWRATE	dscfm	104758	102215	107755	104909
VELOCITY	ft./sec.	66.7	64.9	67.0	66.2
STACK TEMPERATURE	°F	362	362	368	364
MOISTURE	%	17.5	16.8	14.4	16.2
SAMPLE RATE	% isokinetic	105	103	100	103

1.2 Dryer Outlets:

Inlet testing was performed by Armstrong Environmental. Results of that testing are presented in summary tables here and the entire report of that testing is provided as Appendix E of this report. RTO inlet testing was performed at a location between the primary cyclones exhausts and the inlets to the multicyclones.

1.2.1 Dryer No. 1

1.2.1.1 PM/NOx/CO Emissions Test

Run No. / Date / Time Start / Time End		1 6/1/95 1025 1131	2 6/1/95 1445 1554	3 6/1/95 1625 1730	AVG. ——— —— ——
PARTICULATE EMISSIONS	#/hr	24.96	36.17	32.03	31.05
PARTICULATE EMISSIONS	gr/dscf	0.0905	0.1502	0.1301	0.1236
CO EMISSIONS	#/hr	26.57	29.28	21.91	25.92
CO EMISSIONS	ppm	189	239	175	201
NOx EMISSIONS	#/hr	4.18	5.01	4.73	4.64
NOx EMISSIONS	ppm	18	25	23	22
VOLUMETRIC FLOWRATE	acfm	48155	45817	45905	46626
VOLUMETRIC FLOWRATE	dscfm	32169	28087	28723	29660
VELOCITY	ft./sec.	39.6	37.7	37.8	38.4
STACK TEMPERATURE	°F	197	196	195	196
MOISTURE	%	14.7	21.9	20.3	19.0
SAMPLE RATE	% isokinetic	104	105	99	103

- Runs 1 & 2 only

1.2.1.2 HCHO/VOC Emissions Test

Run No. / Date / Time Start / Time End		1 6/2/95 0831 0933	2 6/2/95 1013 1120	3 6/2/95 1150 1255	AVG. ——— —— ——
FORMALDEHYDE EMISSIONS	#/hr	1.15	1.30	0.29	0.91
FORMALDEHYDE EMISSIONS	ppm	10.4	11.7	2.6	8.2
VOC EMISSIONS	#/hr	43.96	61.23	55.56	53.58
VOC EMISSIONS	ppm as C	989	932	898	940
VOLUMETRIC FLOWRATE	acfm	45215	45129	45434	45259
VOLUMETRIC FLOWRATE	dscfm	23770	23807	25643	24407
VELOCITY	ft./sec.	37.2	37.1	37.4	37.2
STACK TEMPERATURE	°F	195	197	195	196
MOISTURE	%	33.1	32.9	29.2	31.7
SAMPLE RATE	% isokinetic	110	109	103	107

1.2.2 Dryer No. 2

1.2.2.1 PM/NOx/CO Emissions Test

Run No. / Date / Time Start / Time End		1 6/1/95 0830 0937	2 6/1/95 1013 1119	3 6/1/95 1147 1252	AVG. —— —— ——
PARTICULATE EMISSIONS	#/hr	23.81	32.48	24.27	26.85
PARTICULATE EMISSIONS	gr/dscf	0.0873	0.1268	0.0929	0.1023
CO EMISSIONS	#/hr	7.22	7.32	6.36	6.97
CO EMISSIONS	ppm	52	56	48	52
NOx EMISSIONS	#/hr	----	3.96	6.30	5.13
NOx EMISSIONS	ppm	—	18	29	24
VOLUMETRIC FLOWRATE	acfm	51267	51144	50518	50976
VOLUMETRIC FLOWRATE	dscfm	31797	29874	30469	30713
VELOCITY	ft./sec.	43.0	42.9	42.4	42.8
STACK TEMPERATURE	°F	214	213	217	215
MOISTURE	%	18.8	22.8	19.8	20.5
SAMPLE RATE	% isokinetic	109	106	102	106

1.2.2.2 HCHO/VOC Emissions Test

Run No. / Date / Time Start / Time End		1 6/2/95 0830 0937	2 6/2/95 1013 1119	3 6/2/95 1147 1252	AVG. —— —— ——
FORMALDEHYDE EMISSIONS	#/hr	1.25	0.67	0.31	0.74
FORMALDEHYDE EMISSIONS	ppm	8.21	4.40	2.04	4.9
VOC EMISSIONS	#/hr	26.20	51.30	56.99	44.83
VOC EMISSIONS	ppm as C	430	842	936	736
VOLUMETRIC FLOWRATE	acfm	52520	50624	52444	51863
VOLUMETRIC FLOWRATE	dscfm	32591	32150	33588	32776
VELOCITY	ft./sec.	44.0	42.5	44.0	43.5
STACK TEMPERATURE	°F	209	208	209	209
MOISTURE	%	18.4	17.0	16.3	17.2
SAMPLE RATE	% isokinetic	102	99	91	97

1.2.3 Dryer No. 3

1.2.3.1 PM/NOx/CO Emissions Test

Run No. ..... Date ..... Time Start ..... Time End		1 6/1/95 1023 1138	2 6/1/95 0443 0548	3 6/1/95 1625 1730	AVG. ——— —— ——
PARTICULATE EMISSIONS	#/hr	25.84	22.29	21.46	23.20
PARTICULATE EMISSIONS	gr/dscf	0.1081	0.0944	0.0927	0.0984
CO EMISSIONS	#/hr	25.68	11.43	12.67	16.59
CO EMISSIONS	ppm	211	95	108	138
NOx EMISSIONS	#/hr	3.50	3.95	3.98	3.81
NOx EMISSIONS	ppm	18	20	21	20
VOLUMETRIC FLOWRATE	acfm	38965	38865	38435	38755
VOLUMETRIC FLOWRATE	dscfm	27882	27542	26989	27471
VELOCITY	ft./sec.	67.5	67.3	66.6	67.1
STACK TEMPERATURE	°F	145	148	152	148
MOISTURE	%	15.8	16.3	16.5	16.2
SAMPLE RATE	% isokinetic	102	103	103	103

1.2.3.2 HCHO/VOC Emissions Test

Run No. ..... Date ..... Time Start ..... Time End		1 6/2/95 0830 0936	2 6/2/95 1013 1116	3 6/2/95 1145 1249	AVG. ——— —— ——
FORMALDEHYDE EMISSIONS	#/hr	0.64	0.71	0.47	0.61
FORMALDEHYDE EMISSIONS	ppm	4.8	5.3	3.5	4.5
VOC EMISSIONS	#/hr	31.19	35.57	/36.97	/34.58
VOC EMISSIONS	ppm as C	586	668	694	649
VOLUMETRIC FLOWRATE	acfm	42880	42010	41557	42149
VOLUMETRIC FLOWRATE	dscfm	28490	27552	27490	27844
VELOCITY	ft./sec.	74.3	72.8	72.0	73.0
STACK TEMPERATURE	°F	191	189	190	190
MOISTURE	%	16.3	17.6	16.8	16.9
SAMPLE RATE	% isokinetic	105	105	104	105

2.0 SOURCE DESCRIPTION: Louisiana Pacific Corporation operates an Oriented Strand Board (OSB) plant in Corrigan, Texas. Process description here is limited to a brief description of the emissions sources and their sampling locations. Detailed descriptions of the processes, the pollution control equipment, and records of operating rates and conditions during testing may be supplied by Louisiana Pacific Corporation.

Three rotary dryers are used for drying wood flakes. Each dryer exhausts to a primary cyclone, then to high efficiency multicyclones. Exhausts from the multiclones are directed to a mixing chamber then to a regenerative thermal oxidizer (RTO). RTO inlet sampling was done at the inlets to the multiclones. The RTO exhausts to the atmosphere by way of a vertical 95.5 inch diameter stack. Two sample ports are provided at a location that is 2.0 diameters downstream of the inlet duct and 2.3 diameters below the stack exit. Sketches of the stacks and sampling locations are provided in Appendix A.

3.0 TEST PROCEDURES: Test procedures used are those described in 40 CFR, Part 60, Appendix A and in Part 266, Appendix IX.

Particulate sampling was done as described in Method 5. An exception was the inclusion of the condenser section particulate. Reported particulate is based on three fractions: the front half, the back half organic (methylene chloride extraction), and the back half aqueous. The contribution of each fraction can be reviewed in Section 4.0.

Carbon monoxide concentrations were continuously monitored as described in Method 10. A TECO Model 48H gas correlation filter NDIR was used to monitor CO. Instrument calibration and bias checks were performed prior to and following each series of tests, and a mid range system bias check was made following each run by directing calibration to the gas sampling probe.

Nitrogen oxides were continuously monitored as described in Method 7E using a TECO Model 10S analyzer. Instrument calibration was performed prior to and following each series of tests, and a mid range system bias check was made prior to and following each run by directing calibration to the gas sampling probe.

VOC concentrations were measured using Method 25A (continuous monitoring with a flame ionization detector) with a TECO Model 51 heated FID. The 0 to 100 ppm scale was used for calibrations using zero air, and appropriate low, mid and high range concentrations of EPA protocol propane in nitrogen. Since calibrations are made with propane (C_3H_8), results as methane (CH_4) (or as carbon) are determined by increasing the measured concentration by a factor of three. A continuous trace of VOC as propane was recorded and manually integrated for each 60 minute test period. Instrument calibration was performed initially, and following each 60 minute test period. Any necessary adjustments were made after recording the response of the mid range calibration gas. which was introduced at the inlet to the VOC sampling probe. The gas samples were directed to the heated FID analyzers by way of heated teflon sample lines maintained at a minimum temperature of 250°F.

Instrument calibrations were made with Protocol 1 cylinder gas and with the aid of an Environics Model 2020 gas diluter. (Carbon monoxide cylinder gas was certified rather than Protocol 1). All calibrations were made by introducing calibration gas at the probe inlet.

Formaldehyde was measured using the procedure described in CFR 40, Part 266, Appendix IX, Method 0011. For the outlet sampling, reagent preparation and sample analysis was performed by Oxford Laboratories of Wilmington, North Carolina.

Inlet sampling was done simultaneously with outlet sampling in order to determine removal efficiency or additional pollutant contribution. Armstrong Engineering of Dallas, Texas, performed the inlet sampling at the dryer outlets. A copy of Armstrong Environmental's report is provided in Appendix E of this report.

4.0 DATA REDUCTION

Louisiana Pacific Corporation - Corrigan, Texas
OSB RTO
PM/NOx/CO Emissions Test - June 2, 1995

Collected Test Data:

		RUN 1	RUN 2	RUN 3	
Date	:	6/2/95	6/2/95	6/2/95	
Time start	:	0830	1013	1147	
Time end	:	0933	1116	1250	
1. As	: sq ft	49.7432	49.7432	49.7432	
2. Dn	: in.	0.245	0.245	0.245	
3. Cp	: dimensionless	0.84	0.84	0.84	
4. Theta	: minutes	60.00	60.00	60.00	
5. Y	: dimensionless	1.00	1.00	1.00	
6. Pbar	: in. Hg	29.69	29.69	29.69	
7. Pg	: in. H2O	-0.03	-0.03	-0.03	
8. Vm	: cf (dry gas)	47.175	47.933	47.313	
9. sqr(DP),avg	: in.H2O^.5	0.9424	0.9512	0.9618	
10. DH	: in. H2O	1.9979	1.9979	2.0375	
11. ts	: degrees F	361.17	360.79	369.91	363.96
12. tm	: degrees F	101.83	108.88	112.38	
13. Vlc	: ml	208	190	150	
14. CO2	: percent	2.00	1.50	2.00	
15. O2	: percent	18.50	19.00	18.50	
16. CO	: percent	0.02	0.03	0.01	
17. CO	: ppm	240.0	263.0	143.5	215.5
18. M,PM	: milligrams				
	front half	22.8	22.4	14.4	
	back half organic	6.1	3	3.3	
	back half aqueous	2.8	0.5	0.6	
19. NOx	: ppm	26.7	22.8	24.2	25

Louisiana Pacific Corporation - Corrigan, Texas
OSB RTO
PM/NOx/CO Emissions Test - June 2, 1995

Calculations:			RUN 1	RUN 2	RUN 3	AVG.
1. Pm	:	in.Hg (DH/13.6)+Pbar	29.8369	29.8369	29.8398	
2. Ps	:	in. Hg (Pg/13.6)+Pbar	29.6878	29.6878	29.6878	
3. An	:	sq ft ((Dn/24)^2)(3.1416)	3.27E-04	3.27E-04	3.27E-04	
4. Vmstd	:	dscf Vm Y(Pm/Pstd)(Tstd/Tm)	44.211	44.365	43.528	
5. Vwstd	:	scf (.04707cf/ml)(Vlc)	9.791	8.943	7.061	
6. Bws	:	dimensionless Vwstd/(Vwstd+Vmstd)	0.1813	0.1678	0.1396	0.1629
7. Md	:	mol.wt. dry basis .44 CO2+.32 O2+.28(CO+N2)	29.06	29	29.06	
8. Ms	:	mol.wt. wet basis Md(1-Bws)+18 Bws	27.05	27.15	27.52	
9. Vs	:	ft/sec Kp Cp (sqrDP)sqr(Ts/(Ps Ms))	68.43	68.92	69.62	68.99
10. Q	:	cfm Vs As(60 sec/min)	204230	205711	207776	205906
11. Qstw	:	scfm Q(Ps/Pstd)(Tstd/Ts)	130298	131303	131164	130922
12. Qstd	:	dscfm Qstw(1-Bws)	106675	109275	112858	109603
13. I	:	percent [(100 Ts)(.002669 Vlc+(Vm Pm/Tm)]/(60 theta Vs Ps An)	104.96	102.82	97.68	101.82

Particulate Emissions

14. E,PM	:	pounds/hr (M,PM/Vmstd)(Qstd)(60)/(453590)				
front half			7.277	7.298	4.939	6.505
back half organic			1.947	0.977	1.132	1.352
back half aqueous			0.894	0.163	0.206	0.421
Total			10.118	8.439	6.276	8.277
15. C,PM	:	grains/dscf (M,PM/Vmstd)(.0154 grains/mg)				
front half			0.0079	0.0078	0.0051	0.0069
back half organic			0.0021	0.0010	0.0012	0.0014
back half aqueous			0.0010	0.0002	0.0002	0.0005
Total			0.0110	0.0090	0.0065	0.0088

CO Emissions

16. E,CO	:	pounds/hr (C,CO)(7.27e-8)(Qstd)(60)	111.68	125.36	70.64	102.56

NOx Emissions

17. E,NOx	:	pounds/hr C,NOx(1.19e-7)(Qstd)(60)	20.34	17.79	19.50	19.21

Louisiana Pacific Corporation - Corrigan, Texas
OSB RTO
HCHO/VOC Emissions Test - June 2, 1995

Collected Test Data:

		RUN 1	RUN 2	RUN 3	
	Date :	6/2/95	6/2/95	6/2/95	
	Time start :	0831	1014	1148	
	Time end :	0934	1117	1257	
1.	As : sq ft	49.7432	49.7432	49.7432	
2.	Dn : in.	0.256	0.256	0.256	
3.	Cp : dimensionless	0.84	0.84	0.84	
4.	Theta : minutes	60.00	60.00	60.00	
5.	Y : dimensionless	1.00	1.00	1.00	
6.	Pbar : in. Hg	29.69	29.52	29.52	
7.	Pg : in. H2O	-0.03	-0.03	-0.03	
8.	Vm : cf (dry gas)	49.929	48.598	49.772	
9.	sqr(DP),avg : in.H2O^.5	0.9199	0.8929	0.9233	
10.	DH : in. H2O	2.1146	2.0217	2.1330	
11.	ts : degrees F	361.58	361.79	367.75	363.71
12.	tm : degrees F	96.73	99.04	102.60	
13.	Vlc : ml	213	195	165	
14.	CO2 : percent	2.00	1.50	2.00	
15.	O2 : percent	18.50	19.00	18.50	
16.	CO : percent	0	0	0	
17.	M,HCOH : micrograms	2480	2870	1490	
18.	C,VOC : ppm as CH_4	5.2	6.3	3.4	

Louisiana Pacific Corporation - Corrigan, Texas
OSB RTO
HCHO/VOC Emissions Test - June 2, 1995

Calculations:	RUN 1	RUN 2	RUN 3	AVG.
1. Pm : in.Hg (DH/13.6)+Pbar	29.8455	29.6687	29.6768	
2. Ps : in. Hg (Pg/13.6)+Pbar	29.6878	29.5178	29.5178	
3. An : sq ft ((Dn/24)^2)(3.1416)	3.57E-04	3.57E-04	3.57E-04	
4. Vmstd : dscf Vm Y(Pm/Pstd)(Tstd/Tm)	47.234	45.514	46.331	
5. Vwstd : scf (.04707cf/ml)(Vlc)	10.026	9.179	7.767	
6. Bws : dimensionless Vwstd/(Vwstd+Vmstd)	0.1751	0.1678	0.1436	0.1622
7. Md : mol.wt. dry basis .44 CO2+.32 O2+.28(CO+N2)	29.06	29	29.06	
8. Ms : mol.wt. wet basis Md(1-Bws)+18 Bws	27.12	27.15	27.47	
9. Vs : ft/sec Kp Cp (sqrDP)sqr(Ts/(Ps Ms))	66.73	64.93	66.99	66.21
10. Q : cfm Vs As(60 sec/min)	199152	193778	199933	197621
11. Qstw : scfm Q(Ps/Pstd)(Tstd/Ts)	126994	122829	125817	125214
12. Qstd : dscfm Qstw(1-Bws)	104758	102215	107755	104909
13. I : percent [(100 Ts)(.002669 Vlc+(Vm Pm/Tm)]/(60 theta Vs Ps An)	104.59	103.29	99.74	102.54

Formaldehyde Emissions

14. E,HCOH : pounds/hr (M,HCOH/Vmstd)(Qstd)(60)/(453590000)	0.728	0.853	0.458	0.680
15. C,HCOH : ppm (M,HCOH/Vmstd)(.0283)	1.49	1.78	0.91	1.39

VOC Emissions

16. C'VOC : ppm as Carbon, dry ((C,VOC)*3)/(1-Bws)	18.91	22.71	11.91	17.84
17. E,VOC : pounds/hr (C'VOC)(3.116e-8)(Qstd)(60)	3.70	4.34	2.40	3.48

5.0 NOMENCLATURE

SYMBOL	UNITS	DESCRIPTION
An	ft^2	Nozzle cross sectional area
As	ft^2	Stack cross sectional area
Bws	dimensionless	Wet gas fraction
CO_2	percent	Carbon dioxide content by volume
CO	percent	Carbon monoxide content by volume
Cp	dimensionless	Pitot correction factor
C,X	as labeled	Concentration of pollutant X
DGF	dimensionless	Dry gas fraction
Dn	inches	Nozzle diameter
ΔH (delta H)	in. H_2O	Pressure drop across meter orifice
ΔP (delta P)	in. H_2O	Stack gas velocity pressure
E,X	#/hr	Emission rate of pollutant X
E'X	#/MM Btu	Emission rate of pollutant X
F	dscf	Volume of flue gas per MM Btu
I	percent	Nozzle velocity/stack gas velocity
Kp	consistent	Pitot tube constant
M,X	milligrams	Sample weight of pollutant X
Md	#/# mole	Dry molecular weight of stack gas
Ms	#/# mole	Wet molecular weight of stack gas
N2	percent	Nitrogen content by volume, dry basis
O_2	percent	Oxygen content by volume, dry basis
Pbar	in. Hg	Barometric pressure
Pg	in. Hg	Stack static pressure
Pm	in. Hg	Total pressure at meter (Pbar+(DH/13.6)
Ps	in. Hg	Total stack pressure (Pbar+(Pg/13.6))
Pstd	in. Hg	Standard barometric pressure = 29.92
Q	acfm	Volumetric flow rate at stack conditions
Qstd	dscfm	Volumetric flow rate at standard conditions, dry basis
Qstdw	scfm	Volumetric flow rate at standard conditions, wet basis
θ (theta)	minutes	Sample duration
tm	°F	Meter temperature (Tm denotes °R)
ts	°F	Stack temperature (Ts denotes °R)
Tstd	°R	Standard temperature = 528°R
Vlc	ml	volume of water collected
Vm	ft^3	Volume of dry gas sampled through meter
Vmstd	dscf	Sample volume at standard conditions
Vwstd	scf	Sample volume of water vapor
Y	dimensionless	Meter coefficient
Xsair	percent	Excess air

6.0 CALIBRATIONS:

Measurement devices used by Environmental Monitoring Laboratories and subject to changes in measurement precision are initially calibrated prior to use. Those instruments for which calibration factors are subject to change or for which calibration checks are required, are calibrated following each field use or as otherwise directed and noted. Calibration procedures for specific equipment are as follows.

Dry Gas Meter:
Dry gas meters are periodically removed from the sampling consoles and cleaned and repaired (new gaskets etc. as required). Following the overhaul of a meter, the measuring precision is checked by the Bell Prover Method and adjusted when necessary to read to within 2% of 100% accuracy. This service is provided by Big Three Meter Company in Jackson, Mississippi. Overhaul service or any six month period is followed by a five point calibration described in APTD-0576 using either a wet test meter or calibrated dry gas meter (used exclusively for calibrations) as a standard reference. Following field use, a gas meter calibration is checked in one of two ways. [1] Three calibration checks at intermediate orifice settings are performed or [2] orifice meter coefficients are used.

If a meter coefficient obtained from pre-test and post-test checks differs by more than 5%, the coefficient (Y) giving the lower sample volume is used in the calculations.

Orifice:
The orifice coefficient is initially determined and is rechecked following a major gas meter repair and calibration.

Nozzles:
Nozzles are checked before each field use with a precision (.001 in.) dial caliper. Three measurements on different axes are made; an average of those three readings is used in calculations. If the tolerance among measurements exceeds 0.004 inches (highest to lowest reading) the nozzle is repaired and recalibrated or discarded.

Pitot Tubes:
Pitot tubes meeting EPA geometry standards are assigned a coefficient of 0.84. Pitot tubes are visually inspected for damage before, during and after use. Those pitot tubes not meeting the geometry standards are assigned a coefficient from the manufacturer's calibration which it retains unless damaged. All pitot tubes used by Environmental Monitoring Laboratories are manufactured by NAPP, Inc.

Temperature Measuring Instruments:
Most temperature measurements are made with a type K thermocouple and an Omega digital thermocouple thermometer which has an initial calibration traceable to NBS. Other measurements are made using bimetallic dial thermometers. The thermocouples and dial thermometers are checked following or during a test series against an ASTM mercury in glass thermometer.

Barometer:
Aneroid field barometers are checked against and adjusted to readings from a mercury barometer or readings obtained from local weather authorities.

Differential Pressure Gauges:
Velocity head (delta P) and orifice pressure differential (delta H) measurements are made using water manometers of the appropriate range unless otherwise noted in the test data. Manometers do not require calibration.

7.0 APPENDICES

A. Field and Laboratory Data

B. Calibrations

C. Instrument Recorder Traces/Data Log

D. HCOH Analysis Report (Oxford Laboratories)

E. Armstrong Environmental Report

7.0 APPENDICES

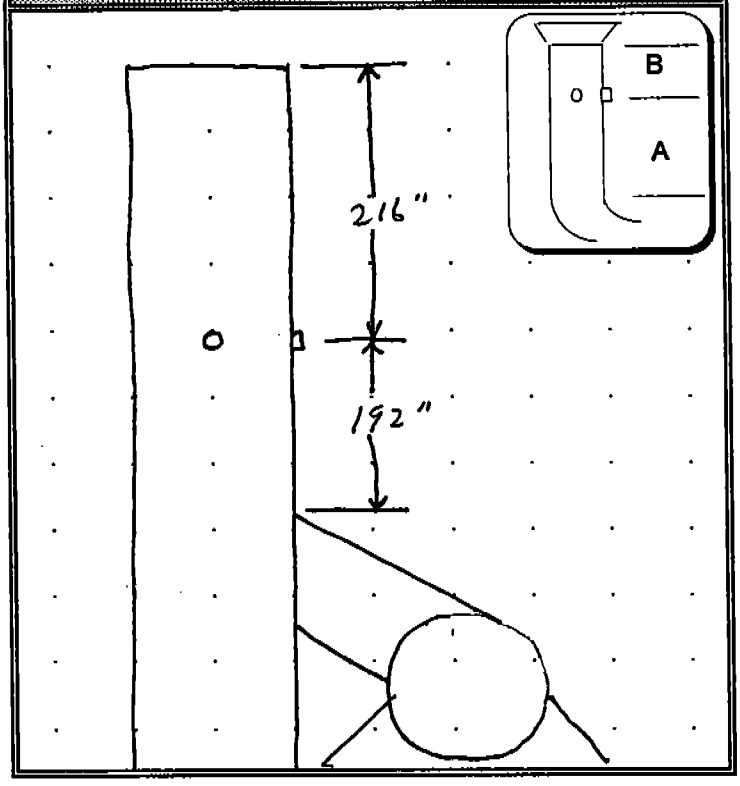
APPENDIX A.

SAMPLING AND ANALYTICAL DATA

STACK CONFIGURATION AND SAMPLE POINT LAYOUT FOR CIRCULAR STACKS

PLANT: Louisiana Pacific Corporation **Date:** 6-1-95
SOURCE: RTO outlet
TEST FOR: PM Settup
TEST OPERATORS: Russell

SKETCH OF STACK



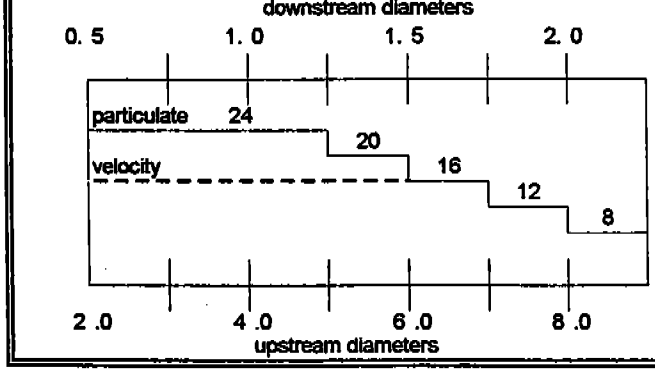
PERCENT OF DIAMETER

point no.	points on a diameter: 2	4	6	8	10	12	14	16
1	14.6	6.7	4.4	3.2	2.6	2.1	1.8	1.6
2	85.4	25.0	14.6	10.5	8.2	6.7	5.7	4.9
3		75.0	29.6	19.4	14.6	11.8	9.9	8.5
4		93.3	70.4	32.3	22.6	17.7	14.6	12.5
5			85.4	67.7	34.2	25.0	20.1	16.9
6			95.6	80.6	65.8	35.6	26.9	22.0
7				89.5	77.4	64.4	36.6	28.3
8				96.8	85.4	75.0	63.4	37.5
9					91.8	82.3	73.1	62.5
10					97.4	88.2	79.9	71.7
11						93.3	85.4	78.0
12						97.9	90.1	83.1
13							94.3	87.5
14							98.2	91.5
15								95.1
16								98.4

STACK DIAMETER:	95.5"
Distance from ports to disturbance:	
A. to upstream disturbance	192"
B. to downstream disturbance	216"
Upstream diameters:	2.01
Downstream diameters:	2.26
Minimum No. sample points required:	24
No. sample points selected:	~~12~~ 12 x 2
Port Length:	7"
Port Type:	4" pipe nipple
Port Access:	manuals

Point No.	Inches from wall	velocity head Δp	Δp
1	2.0	.75	<5	<5
2	6.4	.75	"	"
3	11.3	.70	"	"
4	16.9	.65	"	"
5	23.9	.62	"	"
6	34.0	.66	"	"
7	61.5	.85	"	"
8	71.6	1.0	"	"
9	78.6	1.1	"	"
10	84.2	1.3	"	"
11	89.1	1.2	"	"
12	93.5	1.0	"	

MINIMUM NO. OF POINTS ON A DIAMETER



Pitot ID: Pitot Cp: Stack Temp:

Remarks:

Plant LOUISIANA PACIFIC CORRIGAN, TX.
Sampling Location DRYERS RTO EXHAUST
Test For PM / CO / NOX / VOC
Test Operators BRAD MCKNIGHT, G. MCKNIGHT

RUN No. 1
Date 6-2-95
Time start 0830 end 0933

Meter Box	RAC	No. Sample Pts.	12X2	Gas Analysis	F-pit
Sample Box	NO.	Minutes/Pt.	2.5	CO_2	2.0
Probe/Pitot	8ft s.s.			O_2	18.5
Pitot Cp	.84	NOMOGRAPH		CO	
Nozzle Dia.	.245	ΔH@	1.90	Time	
Filter No.		Meter Temp.	100		
		% H_2O	17	Condensate:	tare 200 fin 395
Amb. Temp. °F	65	C-Factor	.88		
Bar. Press. "Hg	29.69	Stack Temp.	375	Silica gel:	
Static Press. "H_2O	-.03	Ref. Δ P	.84		tare 654 fin 667

Remarks:
DN
① .245
② .246 } .245"
③ .244

Port	Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head Δ P, in. H_2O	Orifice Δ H in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac. in. Hg
1	1	0.00	168.176	0.72	1.60	352	86	81	252	60	2
	2	2.30	169.8	0.72	1.60	357	86	82	249	60	2
	3	5.00	171.7	0.65	1.50	355	88	82	251	60	2
	4	7.30	173.5	0.65	1.40	360	92	85	258	60	2
	5	10.00	175.0	0.66	1.45	362	100	82	250	60	2
	6	12.30	176.6	0.60	1.30	369	101	89	251	60	2
	7	15.00	178.2	0.98	2.15	370	109	81	252	60	2
	8	17.30	180.3	1.10	2.40	368	109	82	254	60	2
	9	20.00	182.3	1.10	2.40	359	112	89	249	60	2
	10	22.30	184.3	1.10	2.40	353	114	89	248	60	2
	11	25.00	186.5	0.98	2.15	347	117	90	249	60	2
	12	27.30	188.6	1.00	2.20	356	120	91	248	60	2
2	1	30.00	190.780	0.60	1.30	351	118	92	249	60	2
	2	2.30	192.4	0.65	1.45	357	115	93	252	60	2
	3	5.00	194.0	0.65	1.45	363	116	91	255	61	2
	4	7.30	195.9	0.60	1.30	373	120	93	251	61	2
	5	10.00	197.5	0.62	1.35	370	120	95	248	61	2
	6	12.30	199.1	0.90	2.00	371	120	98	254	61	2
	7	15.00	201.1	1.20	2.65	370	122	100	250	61	2
	8	17.30	203.5	1.30	2.90	370	126	99	250	61	2
	9	20.00	205.6	1.30	2.90	360	125	99	255	66	2
	10	22.30	208.2	1.50	3.30	355	127	100	252	66	2
	11	25.00	210.7	1.10	2.40	350	130	101	250	66	2
	12	27.30	213.0	1.10	2.40	370	130	101	250	65	2
	END	60.00	215.351								

LEAK CHECK: .005 → .010 = .005 @ 8" Hg

+ pitot ✓ 6.2
- pitot ✓ 6.0

47.175	.9424	1.5979	361.17	101.83

Plant LOUISIANA PACIFIC ORRIGAN TX.
Sampling Location DRYERS RTO OUTLET
Test For PM / CO / NOx / VOC
Test Operators B. McKNIGHT, C. CARUTH

RUN No. 2
Date 6-2-95
Time start 1013 end 1113

Meter Box	RAC	No. Sample Pts.	12 X 2	Gas Analysis	EYRITE	Remarks:	
Sample Box	NO. 4	Minutes/Pt.	2.5	CO_2	1.5		
Probe/Pitot	STS	NOMOGRAPH		O_2	19		
Pitot Cp	.84	ΔH@	1.90	CO			
Nozzle Dia.	.245	Meter Temp.	100	Time			
Filter No.		% H_2O	17	Condensate:			
Amb. Temp. °F	68°	C-Factor	88	tare	200	fin	376
Bar. Press. "Hg	29.69	Stack Temp.	375	Silica gel:			
Static Press. "H_2O	-.03	Ref. ΔP	.89 / .85	tare	700	fin	714

Port	Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac. in. Hg
1	1	000	215.665	0.77	1.70	348	96	93	253	58	2
	2	230	217.5	0.80	1.70	348	97	96	251	58	2
	3	500	219.2	0.76	1.50	368	100	95	251	58	2
	4	730	221.0	0.68	1.45	366	102	96	250	58	2
	5	1000	222.8	0.64	1.35	367	108	92	255	58	2
	6	1230	224.6	0.64	1.35	359	108	93	255	58	2
	7	1500	226.4	0.72	1.55	357	111	100	250	58	2
	8	1730	228.1	0.86	1.85	350	115	95	252	58	2
	9	2000	230.0	1.10	2.40	363	119	96	255	58	2
	10	2230	232.0	1.30	2.80	368	120	99	255	58	2
	11	2500	234.4	1.30	2.80	369	124	98	255	58	2
	12	2730	236.8	1.20	2.60	360	128	100	256	58	2
2	1	3000	239.321	0.60	1.30	353	121	100	257	58	2
	2	230	240.9	0.67	1.45	365	122	98	255	58	2
	3	500	242.6	0.60	1.30	365	122	102	255	58	2
	4	730	244.5	0.66	1.30	364	122	101	249	58	2
	5	1000	246.0	0.70	1.50	357	124	101	250	59	2
	6	1230	247.7	0.72	1.55	355	123	101	248	59	2
	7	1500	249.5	0.90	1.90	359	124	101	248	59	2
	8	1730	251.2	1.50	3.20	363	127	102	254	59	2
	9	2000	253.6	1.50	3.20	363	128	104	253	59	2
	10	2230	256.3	1.50	3.20	375	132	107	258	59	2
	11	2500	258.7	1.10	2.40	361	135	106	251	59	2
	12	2730	261.0	1.20	2.60	360	135	107	257	59	2
AVG		1400	263.598								
			47.933	.9512	1.9525	360.25		100.88			

LEAK CHECK: .057 → .061 = .004 cfm @ 7" Hg

+ pitot Δp 6.5
- pitot Δp 6.8

Plant: LOUISIANA PACIFIC CORRIGAN, TX
Sampling Location: RTO OUTLET
Test For: PM / CO / NOx / VOC
Test Operators: B. MCKNIGHT / L. CHACHERE

RUN No. 3
Date: 6-2-95
Time start 1147 end 1250

Meter Box	RAC	No. Sample Pts.	16X2	Gas Analysis	EVAPE	Remarks:
Sample Box	NO. 1	Minutes/Pt.	2.5	CO_2	2	
Probe/Pitot	8FT S.S.	NOMOGRAPH		O_2	18.5	
Pitot Cp	.84	ΔH@	1.90	CO		
Nozzle Dia.	.245	Meter Temp.	100	Time		
Filter No.		% H_2O	17	Condensate:		
Amb. Temp. °F	75°	C-Factor	.88	tare 200	fin 338	
Bar. Press. "Hg	29.69	Stack Temp.	375	Silica gel:		
Static Press. "H_2O	-.03	Ref. ΔP	.85	tare 649	fin 661	

Port	Point	El. Time, Min.	DGM Reading, $Ft.^3$	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac. in. Hg
1	1	0000	263.788	0.73	1.60	374	105	100	250	60	2
	2	0230	265.4	0.70	1.50	365	104	100	248	60	2
	3	0500	267.3	0.68	1.45	363	106	101	251	60	2
	4	0730	269.0	0.68	1.45	367	108	102	250	60	2
	5	1000	270.8	0.70	1.50	370	110	99	248	60	2
	6	1230	272.8	0.70	1.50	375	113	97	245	60	2
	7	1500	274.1	0.77	1.65	373	113	103	255	60	2
	8	1730	275.9	0.90	1.90	380	117	95	252	60	2
	9	2000	277.7	1.20	2.60	375	121	100	255	60	2
	10	2230	279.9	1.20	2.60	365	120	104	250	60	2
	11	2500	282.2	1.30	2.80	355	123	107	247	61	2
	12	2730	284.5	1.10	2.40	356	124	105	249	66	2
2	1	3000	286.805	0.65	1.40	375	120	105	250	66	2
	2	0230	288.5	0.65	1.40	358	128	104	248	66	2
	3	0500	290.1	0.63	1.35	366	122	104	246	66	2
	4	0730	291.7	0.60	1.30	369	123	108	260	66	2
	5	1000	293.2	0.70	1.50	376	124	105	231	65	2
	6	1230	295.0	0.94	2.00	367	123	116	257	65	2
	7	1500	296.8	1.30	2.80	377	125	107	255	65	2
	8	1730	299.1	1.40	3.00	388	128	107	250	62	2
	9	2000	301.5	1.40	3.00	376	131	108	250	62	2
	10	2230	309.0	1.50	3.20	374	132	107	250	62	2
	11	2500	306.5	1.20	2.60	369	136	109	250	62	2
	12	2730	308.8	1.10	2.40	364	138	111	250	62	2
END		3000	311.101								
				LEAK CHECK:	.096	→ 095	= .005	CFM @ 9"Hg			
				+ pitot @	6.3						
				− pitot @	6.5						
			47.313	.9618	2.0325	369.91		112.38			

Plant L.P. Corrigan, TX

Sampling Location RTO outlet

Test For HCOH

Test Operators B. McKnight / G. McKnight / D. Russell / L. Carruth

RUN No. 01

Date 6-2-95

Time start 0831 end 0934

Meter Box	Anderson	No. Sample Pts.	24/(2x12)	Gas Analysis		Remarks:	
Sample Box	NO.	Minutes/Pt.	2.5	CO_2		impingers / TARE / FIN	
Probe/Pitot	8ft. s.s.			O_2		DNPH / 575 / 722	
Pitot Cp	.84	NOMOGRAPH		CO		DNPH / 604 / 644	
Nozzle Dia.	.256 QTZ	ΔH@	1.75	Time		MT / 483 / 491	
Filter No.		Meter Temp.	100			S. GEL / 689 / 257	
		% H_2O	17	Condensate:		Dn	
Amb. Temp. °F	65	C-Factor	.81	tare REMARKS fin		0.256	
Bar. Press. "Hg	29.69	Stack Temp.	375	Silica gel:		0.256 } .256	
Static Press. "H_2O	-.03	Ref. ΔP	.77	tare REMARKS fin		0.256	

Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac. in. Hg
1	00 00	202.692	0.82	2.00	371	79	78	N/A	58	2
2	2 30	204.6	0.80	1.90	365	81	78		58	2
3	5 00	206.5	1.40	3.40	359	85	79		58	2
4	7 30	209.0	1.40	3.40	354	92	80		58	2
5	10 00	211.5	1.10	2.70	351	96	81		58	2
6	12 30	213.9	1.05	2.60	359	99	83		58	2
7	15 00	216.4	0.88	2.15	353	101	85		58	2
8	17 30	218.4	0.90	2.20	370	102	87		58	2
9	20 00	220.5	0.60	1.45	366	103	89		59	2
10	22 30	222.3	0.57	1.40	371	103	91		58	2
11	25 00	224.1	0.60	1.45	361	103	93		58	2
12	27 30	225.9	0.56	1.40	360	104	95		58	2
1	30 00	227.709	1.10	2.70	370	99	97		59	2
2	2 30	229.9	1.10	2.70	359	104	98		58	2
3	5 00	232.2	1.20	3.00	354	106	98		58	2
4	7 30	234.8	1.10	2.70	350	108	99		58	2
5	10 00	237.3	0.87	2.10	363	109	100		58	2
6	12 30	239.5	0.80	1.95	359	108	100		58	2
7	15 00	241.4	0.72	1.65	368	107	101		58	2
8	17 30	243.5	0.66	1.65	365	108	101		58	2
9	20 00	245.1	0.65	1.60	320	106	102		58	2
10	22 30	247.1	0.62	1.55	370	106	102		59	2
11	25 00	248.8	0.62	1.55	350	106	102		59	2
12	27 30	250.6	0.62	1.55	360	106	103		59	2
end	60 00	252.621								

LEAK CHECK: 058 → 060 = 002 @ 6 "Hg

+ pitot @ .6.3
− pitot @ 6.4

	49.929	.9199	2.116	361.58	96.23

Plant L.P Corrigan, TX.
Sampling Location RTO OUTLET
Test For HCOH
Test Operators B + G. McKnight / D. Russell / L. Carruth

RUN No. 2
Date 6-2-95
Time start 1014 end 1117

Meter Box	ANDERSEN	No. Sample Pts.	24 (12x2)	Gas Analysis	
Sample Box	NO.3	Minutes/Pt.	2.5	CO_2	
Probe/Pitot	8 ft tef.	NOMOGRAPH		O_2	
Pitot Cp	.84	ΔH@	1.75	CO	
Nozzle Dia.	.256	Meter Temp.	100	Time	
Filter No.		% H_2O	17	Condensate:	
Amb. Temp. °F	68	C-Factor	.81	tare REMARKS fin	
Bar. Press. "Hg	29.69	Stack Temp.	375	Silica gel:	
Static Press. "H_2O	-.03	Ref. ΔP	.77 1.78	tare REMARKS fin	

Remarks:

impingers	TARE	FIN
DNPH	595	729
DNPH	598	637
MT	494	504
S. GEL	692	709

Port Point	El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F In	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac. in. Hg
1	0 00	253.331	1.20	3.00	356	85	88	N/A	60	2
2	2 30	255.63	1.30	3.10	357	88	88		60	2
3	5 00	258.0	1.35	3.30	357	92	87		61	2
4	7 30	260.7	1.40	3.40	364	105	87		61	2
5	10 00	263.4	1.40	3.40	360	100	88		61	2
6	12 30	266.0	1.20	2.90	370	103	89		61	2
7	15 00	268.6	0.98	2.35	373	106	90		61	2
8	17 30	270.8	0.70	1.70	359	105	92		61	2
9	20 00	272.8	0.55	1.30	360	104	93		61	2
10	22 30	274.3	0.50	1.20	354	103	94		61	2
11	25 00	276.1	0.49	1.15	352	102	95		61	2
12	27 30	277.5	0.57	1.35	357	102	96		60	2
1	20 00	279.488	1.20	2.90	350	99	97		60	2
2	2 30	281.7	1.20	2.90	359	104	99		60	2
3	5 00	284.2	1.10	2.50	356	107	99		59	2
4	7 30	286.6	1.00	2.40	356	108	100		59	2
5	10 00	288.8	1.00	2.90	369	108	100		59	2
6	12 30	291.0	0.57	1.35	377	109	101		59	2
7	15 00	292.8	0.95	1.15	368	106	101		59	2
8	17 30	294.4	0.35	0.82	368	105	101		59	2
9	20 00	295.9	0.40	0.95	368	104	102		59	2
10	22 30	297.2	0.42	1.00	370	104	102		59	2
11	25 00	298.8	0.40	0.95	365	105	103		59	2
12	27 30	300.2	0.95	1.05	358	105	103		58	2
end	60 00	301.929								
		leak check: .075 ⟶ 678 = .063 cfm @ 7 "Hg								
		pitot +/- 6.2								
		pitot -/- 6.3								
		45.598	.8929	2.0217	361.79		99.04			

Plant LOUISIANA PACIFIC LOGGIAN TX
Sampling Location RTO OUTLET
Test For HCOH
Test Operators B. MCKNIGHT / G. MCKNIGHT

RUN No. 3
Date 6-2-95
Time start 1148 end 1257

Meter Box	ANDERSEN	No. Sample Pts.	12*2	Gas Analysis	
Sample Box	N/A	Minutes/Pt.	2.5	CO_2	
Probe/Pitot	S.S.	NOMOGRAPH		O_2	
Pitot Cp	.84	ΔH@	1.75	CO	
Nozzle Dia.	.257	Meter Temp.	100	Time	
Filter No.		% H_2O	17	Condensate:	
Amb. Temp. °F	75	C-Factor	.81	tare REMARKS fin	
Bar. Press. "Hg	29.69	Stack Temp.	375	Silica gel:	
Static Press. "H_2O	-.03	Ref. ΔP	.78	tare REMARKS fin	

Remarks:

impinger	tare	fin
DNPH	575	660
DNPH	606	664
MT	483	488
S.GEL	704	721

Port Point		El. Time, Min.	DGM Reading, Ft.³	Velocity Head ΔP, in. H_2O	Orifice ΔH in. H_2O	Stack Temp. °F	Meter Temp., °F in	Meter Temp., °F Out	Oven Temp. °F	Imp. Temp. °F	Vac. in. Hg
1	1	000	302.208	1.20	2.90	375	90	93	N/A	60	2
	2	230	304.3	1.50	3.60	377	95	94		60	2
	3	500	307.3	1.60	3.90	376	93	94		60	2
	4	730	310.1	0.74	1.75	352	93	94		60	2
	5	1000	312.0	1.30	3.10	369	105	93		60	2
	6	1230	314.4	0.90	2.20	366	107	94		60	2
	7	1500	316.5	0.72	1.65	359	107	94		60	2
	8	1730	318.4	0.56	1.35	365	107	95		60	2
	9	2000	320.1	0.48	1.15	365	107	96		60	2
	10	2230	321.8	0.45	1.05	381	108	97		60	2
	11	2500	323.4	0.44	1.05	372	108	98		60	2
	12	2730	325.4	0.44	1.05	370	108	98		60	2
2	1	3000	326.525	1.40	3.40	350	103	99		60	2
	2	230	328.8	1.30	3.20	348	108	101		60	2
	3	500	331.6	1.30	3.20	350	110	101		60	2
	4	730	334.2	1.10	2.60	370	112	101		60	2
	5	1000	336.4	0.90	2.20	368	112	102		60	2
	6	1230	338.7	0.86	1.90	370	112	102		60	2
	7	1500	340.7	0.74	1.80	370	112	102		60	2
	8	1730	342.8	0.75	1.80	371	112	103		60	2
	9	2000	344.5	0.65	1.55	372	113	103		60	2
	10	2230	346.4	0.65	1.55	383	113	103		61	2
	11	2500	348.4	0.65	1.55	374	113	104		61	2
	12	2730	349.9	0.70	1.70	378	113	102		61	2
END		3000	351.986								
			49.778	.5233	2.133	367.75		102.60			

LEAK CHECK: .034 → .034 = .005 cfm @ 7" Hg

+ pitot up ΔP
− pitot up ΔP

BACK HALF PARTICULATE CATCH ANALYSIS

Methylene Chloride Extraction

SAMPLES: L.P. - Corrigan RTO exhaust

DATE TAKEN: 6-2-94 DATE ANALYZED: 6-4-95

DELIVERED BY: DGR RECEIVED BY: DGR

ANALYZED BY: MCR/DGR

(Attach chain of custody if additional exchanges occur)

RUN NO.	1	2	3	
CONTAINER I.D.	LPCn R1 BAK	LPCn R2BAK	L.P.Cn R3BaK	
VOLUME INTACT?	✓	✓	✓	
VOLUME, ml	420	395	360	

Organic Fraction

	(E)	(F)	(H)	( )
TARE WEIGHT, gms.	99.1359	97.5712	96.7791	
	99.1422	97.5742	96.7830	
	99.1420	97.5742	96.7827	
FINAL WEIGHT, gms.	99.1420	97.5742	96.7827	
less blank, gms.				
NET GAIN, milligrams	6.1	3.0	3.3	

Aqueous Fraction

	(B)	(2)	(21)	( )
TARE WEIGHT, gms.	101.6408	104.7528	98.8409	
	101.6440	104.7530	98.8412	
	101.6436	104.7533	98.8415	
FINAL WEIGHT, gms.	101.6436	104.7533	98.8415	
less blank, gms.				
NET GAIN, milligrams	2.8	0.5	0.6	

PARTICULATE CATCH ANALYSIS

SAMPLES: L.P. Corrigan - RTO

DATE TAKEN: 6-2-95 DATE ANALYZED: 6-4-95

DELIVERED BY: DCR RECEIVED BY: DCR

ANALYZED BY: DCR

(Attach chain of custody if additional exchanges occur)

FILTERS:

RUN NO.	1	2	3	
FILTER NO.	2749	2748	2789	
FILTER TARE, gms.	.5675	.5700	.5699	
	.5818	.5833	.5811	
	.5820	.5832	.5811	
FINAL WEIGHT, gms.	.5820	.5832	.5811	
NET GAIN, gms.	.0145	.0132	.0112	

PROBE WASH:

RUN NO.	1	2	3	
CONTAINER I.D.	LP Cor R1	LP Cor R2	LP Cor R3	
VOLUME INTACT?	✓	✓	✓	
VOLUME, ml	140	150	200	
TARE WEIGHT, gms.	(4) 108.4550	(24) 105.3520	(86) 108.1485	( )
	108.4638	105.3615	108.1516	
	108.4633	105.3612	108.1517	
FINAL WEIGHT, gms	108.4633	105.3612	108.1517	
NET GAIN, gms.	.0083	.0092	.0032	
LESS BLANK, gms.				

PARTICULATE SAMPLE WEIGHT:

RUN NO.	1	2	3	
filter + probe, mg.	22.8	22.4	14.4	

APPENDIX B.

CALIBRATION DATA

DRY GAS METER CALIBRATION

Meter ID RAC

Calibration Method DGM/DGM **By** DGR

Calibration Meter ID 651729 **Pbar** 30.05

Date 2/18/95

Vac. in. Hg	DH in. H2O	Time min	Calibrating Meter Vi ft³	Vf ft³	Temp °F	Field Meter Vi ft³	Vf ft³	Temp. in init.	Temp. in final	Temp out init.	Temp out final	Y	Q	K	DH@
1	5.00	12.50	772.047	787.047	59	612.402	627.716	59	98	58	69	0.990	1.2	0.694	1.911
1	4.00	19.25	787.047	807.415	59	627.716	648.935	96	111	68	77	1.004	1.08	0.691	1.929
1	3.00	13.45	807.415	819.741	62	648.935	661.985	109	114	77	82	0.998	0.94	0.692	1.921
1	2.00	18.00	819.741	832.838	62	661.985	675.978	110	108	81	84	0.992	0.75	0.676	2.015
1	1.00	21.00	832.838	844.241	62	675.978	688.173	106	111	84	87	0.995	0.57	0.716	1.795
Averages:												1.00			1.91

$Y = [Vcal)(Pbar)(Tdgm)]/[(Vdgm)(Pm)(Tcal)]$

$K = Q(sqrt((Pm\ Mm)/((Tm\ out)(DH))$

$Q = ((Vmi-Vmf)/min.)(TM,out/Tm,avg)(Y)$

$DH@ = 0.921/K^2$

Where:

Y = Meter correction factor, dimensionless

Vcal = Volume of gas through calibrating meter, cubic feet

Vdgm = Volume of gas through field dry gas meter, cubic feet

Pbar = Barometric pressure, in. Hg

Pm = Meter pressure, (Pbar = DH/13.6)

Tdgm = Average dry gas meter temp, degrees R

Tcal = Temperature of gas at calibrating meter, degrees R

DRY GAS METER CALIBRATION

Meter ID RAC

Calibration Method DGM/DGM **By** GNM

Calibration Meter ID 651729 **Pbar** 29.76

Date 7/13/95

Vac.	DH	Time	Calibrating Meter			Field Meter						Y	Q	K	DH@
			Vi	Vf	Temp	Vi	Vf	Temp. in		Temp out					
in. Hg	in. H2O	min	ft³	ft³	°F	ft³	ft³	init.	final	init.	final				
1	5.00	8.50	432.392	442.521	76	569.427	579.951	91	103	91	92	0.983	1.21	0.682	1.982
1	4.00	9.50	442.521	452.659	83	579.951	590.419	103	120	92	97	0.994	1.08	0.676	2.013
1	3.00	11.00	452.659	462.725	86	590.419	600.891	117	128	97	104	0.999	0.93	0.671	2.049
1	2.00	13.50	462.725	472.804	88	600.891	611.460	126	135	104	111	1.003	0.77	0.673	2.036
1	1.00	18.25	472.804	482.837	89	611.460	622.042	132	135	109	117	1.005	0.57	0.703	1.862
Averages:												**1.00**			**1.99**

$Y = [Vcal)(Pbar)(Tdgm)]/[(Vdgm)(Pm)(Tcal)]$

$K = Q(sqrt((Pm\ Mm)/((Tm\ out)(DH))$

$Q = ((Vmi-Vmf)/min.)(TM,out/Tm,avg)(Y)$

$DH@ = 0.921/K^2$

Where:

Y = Meter correction factor, dimensionless

Vcal = Volume of gas through calibrating meter, cubic feet

Vdgm = Volume of gas through field dry gas meter, cubic feet

Pbar = Barometric pressure, in. Hg

Pm = Meter pressure, (Pbar = DH/13.6)

Tdgm = Average dry gas meter temp, degrees R

Tcal = Temperature of gas at calibrating meter, degrees R

DRY GAS METER CALIBRATION

Meter ID Andersen

Calibration Method DGM/DGM **By** WBM

Calibration Meter ID 651729 **Pbar** 29.95

Date 7/14/95

Vac. in. Hg	DH in. H2O	Time min	Calibrating Meter Vi ft³	Vf ft³	Temp °F	Field Meter Vi ft³	Vf ft³	Temp. in initl.	Temp. in final	Temp out initl.	Temp out final	Y	Q	K	DH@
2	2.00	15.00	483.913	496.161	74	364.061	376.451	86	105	85	88	1.015	0.83	0.74	1.668
2	2.00	19.00	496.161	511.716	78	376.451	392.400	98	119	88	103	1.014	0.84	0.75	1.657
2	2.00	15.00	511.716	523.976	80	392.400	405.126	111	123	102	109	1.014	0.85	0.75	1.645
Averages:												**1.01**			**1.66**

$Y = [Vcal)(Pbar)(Tdgm)]/[(Vdgm)(Pm)(Tcal)]$

$K = Q(sqrt((Pm\ Mm)/((Tm\ out)(DH))$

$Q = ((Vmi-Vmf)/min.)(TM,out/Tm,avg)(Y)$

$DH@ = 0.921/K^2$

Where:

Y = Meter correction factor, dimensionless

Vcal = Volume of gas through calibrating meter, cubic feet

Vdgm = Volume of gas through field dry gas meter, cubic feet

Pbar = Barometric pressure, in. Hg

Pm = Meter pressure, (Pbar = DH/13.6)

Tdgm = Average dry gas meter temp, degrees R

Tcal = Temperature of gas at calibrating meter, degrees R

DRY GAS METER CALIBRATION

Meter ID	Andersen		
Calibration Method	DGM/DGM	**By**	DGR
Calibration Meter ID	651729	**Pbar**	30.05
Date	2/18/95		

Vac. in. Hg	DH in. H2O	Time min	Calibrating Meter Vi ft³	Vf ft³	Temp °F	Field Meter Vi ft³	Vf ft³	Temp. in initial	Temp. in final	Temp out initial	Temp out final	Y	Q	K	DH@
1	5.00	10.00	705.781	718.433	70	142.259	154.458	55	82	55	62	1.012	1.22	0.713	1.810
1	4.00	14.00	718.433	734.176	70	154.458	169.964	72	88	62	73	1.013	1.11	0.716	1.798
1	3.00	14.00	734.176	747.841	70	169.964	183.706	83	88	73	80	1.008	0.98	0.724	1.755
1	2.00	15.00	747.841	759.444	70	183.706	195.595	84	86	80	83	0.995	0.79	0.707	1.841
1	1.00	17.50	759.444	769.343	70	195.595	205.763	86	84	82	85	0.997	0.58	0.734	1.711
Averages:												**1.00**			**1.78**

$Y = [Vcal)(Pbar)(Tdgm)]/[(Vdgm)(Pm)(Tcal)]$

$K = Q(sqrt((Pm\ Mm)/((Tm\ out)(DH))$

$Q = ((Vmi-Vmf)/min.)(TM,out/Tm,avg)(Y)$

$DH@ = 0.921/K^2$

Where:

Y = Meter correction factor, dimensionless

Vcal = Volume of gas through calibrating meter, cubic feet

Vdgm = Volume of gas through field dry gas meter, cubic feet

Pbar = Barometric pressure, in. Hg

Pm = Meter pressure, (Pbar = DH/13.6)

Tdgm = Average dry gas meter temp, degrees R

Tcal = Temperature of gas at calibrating meter, degrees R

953.4 Propane

Scott Specialty Gases, Inc.

1290 COMBERMERE STREET, TROY, MI 48083 (810) 589-2950 FAX:(810) 589-2134

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

Customer
ENVIRONMENTAL MON
242 INGLESIDE DRIVE
MADISON, MS 39110

Assay Laboratory
Scott Specialty Gases, Inc
1290 Combermere
Troy, MI 48083

Purchase Order : DRV0116
Scott Project # : 576120

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay and Certification of Gaseous Calibration Standards, Procedure G1; September, 1993.

Cylinder Number : ALM049194
Cylinder Pressure + : 1900 psig
Certificate Date : 2/1/95
Previous Certificate Date : None
Expiration Date : 2/1/98

ANALYZED CYLINDER

Components	Certified Concentration	Analytical Uncertainty*
Propane	953.4 ppm	±1% NIST Directly Traceable

Balance Gas: Nitrogen

+ Do not use when cylinder presssure is below 150 psig.
* Analytical accuracy is inclusive of usual known error sources which at least include precision of the measurement processes.

REFERENCE STANDARD

Type	Expiration Date	Cylinder Number	Concentration
NTRM 1668	6/7/96	ALM-032015	95.5 ppm Propane in Air.

INSTRUMENTATION

Instrument/Model/Serial #	Last Date Calibrated	Analytical Principle
Prop-Beckman/400/1002059	1/19/95	Flame Ionization Detection

ANALYZER READINGS (Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

Components
Propane

First Triad Analysis

Data: 2/1/95 Response Units: mv

Z1=0.00	R1=14.40	T1=143.00
R2=14.40	Z2=0.00	T2=143.00
Z3=0.00	T3=143.00	R3=14.40

Avg. Conc. of Cust. Cyl. 953.4 ppm

Second Triad Analysis

Calibration Curve

Concentration=A+Bx+Cx^2+Dx^3+Ex^4

r=1.00000	NTRM 1668
Constants:	A=-0.237940000
B=6.669000000	C=0.000000000
D=0.000000000	E=0.000000000

Special Notes

Analyst

MISP/P-1

475.3 Propane

Scott Specialty Gases, Inc.

1290 COMBERMERE STREET, TROY, MI 48083 (810) 589-2950 FAX:(810) 589-2134

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

Customer
ENVIRONMENTAL MON
242 INGLESIDE DRIVE
MADISON, MS 39110

Assay Laboratory
Scott Specialty Gases, Inc
1290 Combermere
Troy, MI 48083

Purchase Order : DRV0116
Scott Project # : 576120

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay and Certification of Gaseous Calibration Standards, Procedure G1, September, 1993.

Cylinder Number : ALM016861
Cylinder Pressure + : 1900 psig
Certificate Date : 1/27/95
Previous Certificate Date : None
Expiration Date : 1/27/98

ANALYZED CYLINDER

Components	Certified Concentration	Analytical Uncertainty*
Propane	475.3 ppm	±1% NIST Directly Traceable

Balance Gas: Air

+ Do not use when cylinder pressure is below 150 psig.
* Analytical accuracy is inclusive of usual known error sources which at least include precision of the measurement processes.

REFERENCE STANDARD

Type	Expiration Date	Cylinder Number	Concentration
NTRM 1668	6/7/96	ALM-032015	95.5 ppm Propane in Air.

INSTRUMENTATION

Instrument/Model/Serial #	Last Date Calibrated	Analytical Principle
Prop:Beckman/400/1002059	1/19/95	Flame Ionization Detection

ANALYZER READINGS (Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

Components: Propane

First Triad Analysis

Date: 1/27/95 Response Units: mv

Z1=0.00	R1=14.40	T1=71.30
R2=14.40	Z2=0.00	T2=71.30
Z3=0.00	T3=71.30	R3=14.40

Avg. Conc. of Cust. Cyl. 475.3 ppm

Second Triad Analysis

Calibration Curve

Concentration=$A+Bx+Cx^2+Dx^3+Ex^4$

r=1.00000	NTRM 1668
Constants:	A=-0.237940000
B=6.669000000	C=0.000000000
D=0.000000000	E=0.000000000

Special Notes

Analyst

ASP/P-1

90.46 Propane

Scott Specialty Gases, Inc.

1290 COMBERMERE STREET, TROY, MI 48083 (810) 589-2950 FAX:(810) 589-2134

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

Customer
ENVIRONMENTAL MON
242 INGLESIDE DRIVE
MADISON, MS 39110

Assay Laboratory
Scott Specialty Gases, Inc
1290 Combermere
Troy, MI 48083

Purchase Order : DRV0116
Scott Project # : 576120

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay and Certification of Gaseous Calibration Standards; Procedure G1; September, 1993.

Cylinder Number : ALM016008
Cylinder Pressure + : 1900 psig
Certificate Date : 1/27/95
Previous Certificate Date : None
Expiration Date : 1/27/98

ANALYZED CYLINDER

Components	Certified Concentration	Analytical Uncertainty*
Propane	90.46 ppm	±1% NIST Directly Traceable

Balance Gas: Air

+Do not use when cylinder presssure is below 150 psig.
*Analytical accuracy is inclusive of usual known error sources which at least include precision of the measurement processes.

REFERENCE STANDARD

Type	Expiration Date	Cylinder Number	Concentration
NTRM 1668	6/7/96	ALM-032015	95.5 ppm Propane in Air

INSTRUMENTATION

Instrument/Model/Serial #	Last Date Calibrated	Analytical Principle
Propane : Beckman/400/1002059	1/19/95	Flame Ionization Detector

ANALYZER READINGS (Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

Components
Propane

First Triad Analysis

Date: 1/27/95 Response Units: mv

Z1=0.00	R1=95.50	T1=90.50
R2=95.50	Z2=0.00	T2=90.40
Z3=0.00	T3=90.50	R3=95.50

Avg. Conc. of Cust. Cyl. 90.46 ppm

Second Triad Analysis

Calibration Curve

Concentration=$A+Bx+Cx^2+Dx^3+Ex^4$

r=1.00000	NTRM 1668
Constants:	A=-0.086524000
B=1.000900000	C=0.000000000
D=0.000000000	E=0.000000000

Special Notes

Analyst

MISP/P-1

2410 100x

Scott Specialty Gases, Inc.

500 WEAVER PARK ROAD, LONGMONT, CO 80501 (303) 442-4700, (303) 651-3094 FAX (303) 772-7673

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

Customer
ENVIRONMENTAL MONITORING
242 INGLESIDE DRIVE
MADISON, MS 39110

Assay Laboratory
Scott Specialty Gases, Inc.
500 Weaver Park Road
Longmont, CO 80501

Purchase Order	DRV0826
Scott Project #	0815606
CGA Fitting	660
QC Number	11039435
File Number	15606-01

ANALYTICAL INFORMATION

This certification was performed according to EPA-Traceability Protocol fo Assay and certification of Gaseous Calibration Standards; Procedure G1; September, 1993.

Cylinder Number ALM-043125 | Certification Date 08/30/94 | Expiration Date 08/30/96

Cylinder Pressure 2000 psig | Previous Certification Dates None

ANALYZED CYLINDER

Components	Certified Concentration
(Nitric Oxide)	2400 ppm
[illegible]	2418 ppm
(Nitrogen)	Balance

Analytical Uncertainty*
±1% NIST Directly Traceable
Reference Value Only

*Analytical uncertainty is inclusive of usual known error sources which at least include precision of the measurement processes.

REFERENCE STANDARD

Type	Expiration Date	Cylinder Number	Concentration
NTRM 2631	06/18/95	ALM-022283	2814.0ppm NO / N2
GMIS	NONE	AAL-19328	2170.0ppm NO / N2

INSTRUMENTATION

Instrument/Model/Serial #	Last Date Calibrated	Analytical Principle
Monitor Labs 8840-857	08/22/94	Chemiluminescence

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

Components (Nitric Oxide)

First Triad Analysis

Date: 12/22/93 Response Units: mv
Z1 = 0.0000 R1 = 0.4316 T1 = 0.4786
R2 = 0.4316 Z2 = 0.0000 T2 = 0.4786
Z3 = 0.0000 T3 = 0.4786 R3 = 0.4316
Avg. Conc. of Cust. Cyl. = 2401.1 ppm

Second Triad Analysis

Date: 08/30/94 Response Units: mv
Z1 = 0.0000 R1 = 0.4316 T2 = 0.4786
R2 = 0.4316 Z2 = 0.0000 T2 = 0.4786
Z3 = 0.0000 T3 = 0.4786 R3 = 0.4316
Avg. Conc. of Cust. Cyl. = 2401.6 ppm

Calibration Curve

Concentration = A+Bx+Cx²+Dx³+Ex⁴
r = 0.999997 NTRM 2631
Constants: A = -11.764180
B = 5151.8800 C = -232.7234
D = 0 E = 0

Special Notes: Do not use when cylinder pressure is below 150 psig.

Analyst: Diana L. Beehler

PROTOCOL

Scott Specialty Gases, Inc.

102.0 NOx

1290 COMBERMERE STREET, TROY, MI 48083 (810) 589-2950 FAX:(810) 589-2134

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

Customer
ENVIRONMENTAL MONITORING
242 INGLESIDE DRIVE
MADISON, MS 39110

Assay Laboratory
Scott Specialty Gases, Inc
1290 Combermere
Troy, MI 48083

Purchase Order : DRV0826
Scott Project # : 570523

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay and Certification of Gaseous Calibration Standards; Procedure G1; September, 1993.

Cylinder Number : ALM036349
Cylinder Pressure + : 1900 psig
Certificate Date : 8/30/94
Previous Certificate Date : None
Expiration Date : 8/30/96

ANALYZED CYLINDER

Components	Certified Concentration	Analytical Uncertainty*
Nitric Oxide	99.90 ppm	±1% NIST Directly Traceable
Total Oxides of Nitrogen	102.0 ppm	Reference Value Only

Balance Gas: Nitrogen

+ Do not use when cylinder pressure is below 150 psig.
* Analytical accuracy is inclusive of usual known error sources which at least include precision of the measurement processes.

REFERENCE STANDARD

Type	Expiration Date	Cylinder Number	Concentration
NTRM 1684	4/1/96	ALM-024582	95.2 ppm Nitric Oxide in Nitrogen

INSTRUMENTATION

Instrument/Model/Serial #	Last Date Calibrated	Analytical Principle
NO: Horiba/OPE-235/483814	8/24/94	Chemiluminesence

ANALYZER READINGS (Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

Components: Nitric Oxide

First Triad Analysis

Date: 3/28/94	Response Units: mv	
Z1=0.00	R1=95.20	T1=99.80
R2=95.20	Z2=0.00	T2=99.80
Z3=0.00	T3=99.80	R3=95.20
Avg. Conc. of Cust. Cyl. 99.80 ppm		

Second Triad Analysis

Date: 8/30/94	Response Units: mv	
Z1=0.00	R1=95.20	T1=100.00
R2=95.20	Z2=0.00	T2=100.00
Z3=0.00	T3=100.00	R3=95.20
Avg. Conc. of Cust. Cyl: 100.0 ppm		

Calibration Curve

Concentration=A+Bx+Cx^2+Dx^3+Ex^4	
r=0.99999	NTRM 1684
Constants:	A=0.000000000
B=1.000000000	C=0.000000000
D=0.000000000	E=0.000000000

Special Notes

Don Eveleth Jr
Analyst

MISP/P-1

12.90 NOx

Scott Specialty Gases, Inc.

1290 COMBERMERE STREET, TROY, MI 48083 (313) 589-2950 FAX: (313) 589-2134

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

Customer
ENVIROMENTAL MONITORING
242 INGLESIDE DRIVE
MADISON MS 39110

Assay Laboratory
Scott Specialty Gases, Inc.
1290 Combermere
Troy, MI 48083

Purchase Order 0630DR
Scott Project # 553186

ANALYTICAL INFORMATION

Certified to exceed the minimum specifications of EPA Protocol 1 Procedure # G1, Section Number 3.0.4

Cylinder Number	ALM022478	**Certification Date**	7-19-93	**General Exp. Date**	7-19-95
Cylinder Pressure	1900 psig	**Previous Certification Dates**	None	**Acid Rain Exp. Date**	7-19-95

ANALYZED CYLINDER

Components	Certified Concentration	Analytical Uncertainty*
Nitric Oxide	12.90 ppm	±1% NIST Directly Traceable
Total Oxides of Nitrogen	12.90 ppm	Reference Value Only

Balance Gas: Nitrogen

*Analytical uncertainty is inclusive of usual known error sources which at least includes reference standard error & precision of the measurement processes.

REFERENCE STANDARD

Type	Expiration Date	Cylinder Number	Concentration
SRM 2629A	1-4-95	FF-28502	19.40 ppm NO in N_2

INSTRUMENTATION

Instrument/Model/Serial #	Last Date Calibrated	Analytical Principle
NO: Horiba/OPE-235/560543082	5-18-93	Chemiluminescence

ANALYZER READINGS (Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

Components	First Triad Analysis	Second Triad Analysis	Calibration Curve
Nitric Oxide	Date: 7-11-93 Response Units: mv Z1=0.00 R1=19.40 T1=12.90 R2=19.40 Z2=0.00 T2=12.90 Z3=0.00 T3=12.90 R3=19.40 Avg. Conc. of Cust. Cyl. 12.90 ppm	Date: 7-19-93 Response Units: mv Z1=0.00 R1=19.40 T1=12.90 R2=19.40 Z2=0.00 T2=12.90 Z3=0.00 T3=12.90 R3=19.40 Avg. Conc. of Cust. Cyl. 12.90 ppm	Concentration=A+Bx+Cx^2+Dx^3+Ex^4 r=0.99999 SRM 2629A Constants: A=0.01381712 B=0.9992878 C=0 D=0 E=0
			Concentration=A+Bx+Cx^2+Dx^3+Ex^4
			Concentration=A+Bx+Cx^2+Dx^3+Ex^4

Special Notes
If this product is used for Acid Rain Rule Compliance, the *Acid Rain Expiration Date* noted above applies per 40 CFR Part 75, Appendix H. Otherwise, the *General Expiration Date* applies.

F. P. Doran

Analyst Frank P. Doran

Scott Specialty Gases, Inc.

Shipped From: 3714 LAPAS DRIVE
HOUSTON TX 77023
Phone: 713-644-4820 Fax: 713-644-0244

CERTIFICATE OF ANALYSIS

ENVIRONMENTAL MONITORING
DANNY RUSSELL
P O BOX 655

RIDGELAND MS 39158

PROJECT #: 04-43368-001
PO#: DRV0517
ITEM #: 04024315 2AL
DATE: 5/26/95

CYLINDER #: ALM055984

ANALYTICAL ACCURACY: +/- 1%
PRODUCT EXPIRATION: 5/24/96

BLEND TYPE : ACUBLEND MASTER GAS

COMPONENT	REQUESTED GAS CONC MOLES		ANALYSIS (MOLES)	
CARBON MONOXIDE	452.	PPM	453.	PPM
OXYGEN	11.	%	11.01	%
NITROGEN		BALANCE		BALANCE

2000 PSI

453

THIS PRODUCT IS TRACEABLE TO DOCUMENTATION BY BOTH THE NUMBERS IDENTIFIED ON THIS CERTIFICATE OF ANALYSIS.

ALL PRODUCTION & ANALYTICAL PROJECT & CYLINDER SERIAL

ANALYST: _____

Scott Specialty Gases, Inc.

Shipped From: 3714 LAPAS DRIVE
HOUSTON TX 77023
Phone: 713-644-4820 Fax: 713-644-0244

CERTIFICATE OF ANALYSIS

ENVIRONMENTAL MONITORING
DAN RUSSELL
P O BOX 655

RIDGELAND MS 39158

PROJECT #: 04-29381-003
PO#: DRV-0107
ITEM #: 04021453 2AL
DATE: 1/11/94

CYLINDER #: ALM007930
FILL PRESSURE: 2000 PSI
BLEND TYPE : ACUBLEND MASTER GAS

ANALYTICAL ACCURACY: +/- 1%
PRODUCT EXPIRATION: 1/11/95

COMPONENT	REQUESTED GAS CONC MOLES		ANALYSIS (MOLES)	
CARBON MONOXIDE	4,500.	PPM	4,540.	PPM
NITROGEN		BAL		BAL

ANALYST: _____ APPROVED BY: _____

955 CO

Scott Specialty Gases, Inc.

Shipped From: 3714 LAPAS DRIVE
HOUSTON TX 77023
Phone: 713-644-4820 Fax: 713-644-0244

CERTIFICATE OF ANALYSIS

ENVIRONMENTAL MONITORING
DANNY RUSSELL
P O BOX 655

RIDGELAND MS 39158

PROJECT #: 04-39907-002
PO#: DRV0116
ITEM #: 04024520 2AL
DATE: 1/27/95

CYLINDER #: AAL19761

ANALYTICAL ACCURACY: +/-1%
PRODUCT EXPIRATION: 1/27/96

BLEND TYPE : ACUBLEND MASTER GAS

COMPONENT	REQUESTED GAS CONC	MOLES	ANALYSIS (MOLES)	MOLES
CARBON DIOXIDE	12.	%	12.08	%
CARBON MONOXIDE	955.	PPM	953.	PPM
OXYGEN	3.	%	3.03	%
NITROGEN		BALANCE		BALANCE

2000 PSI

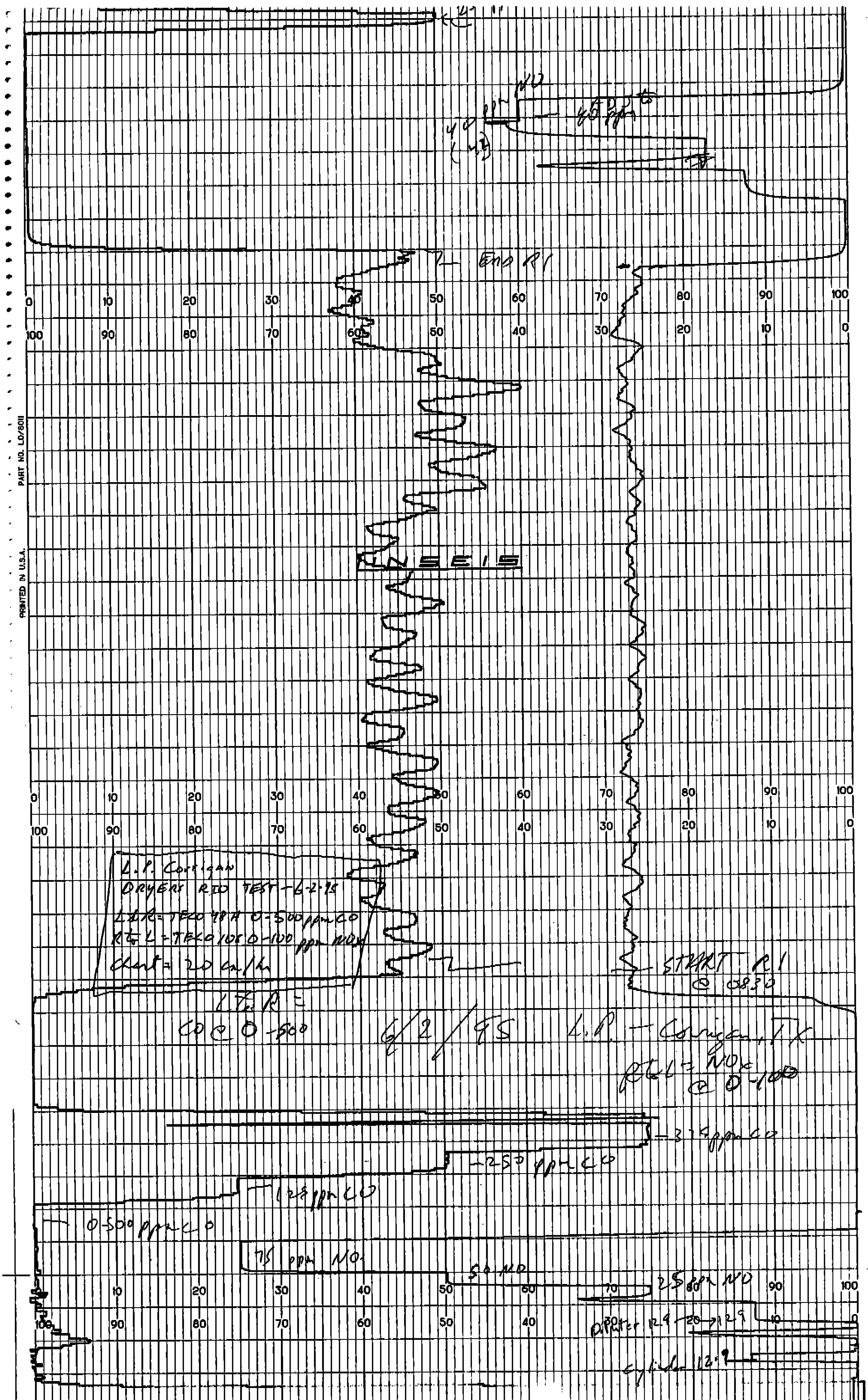
THIS PRODUCT IS TRACEABLE TO ALL PRODUCTION & ANALYTICAL DOCUMENTATION BY BOTH THE PROJECT & CYLINDER SERIAL NUMBERS IDENTIFIED ON THIS CERTIFICATE OF ANALYSIS.

ANALYST: _____

APPENDIX C.

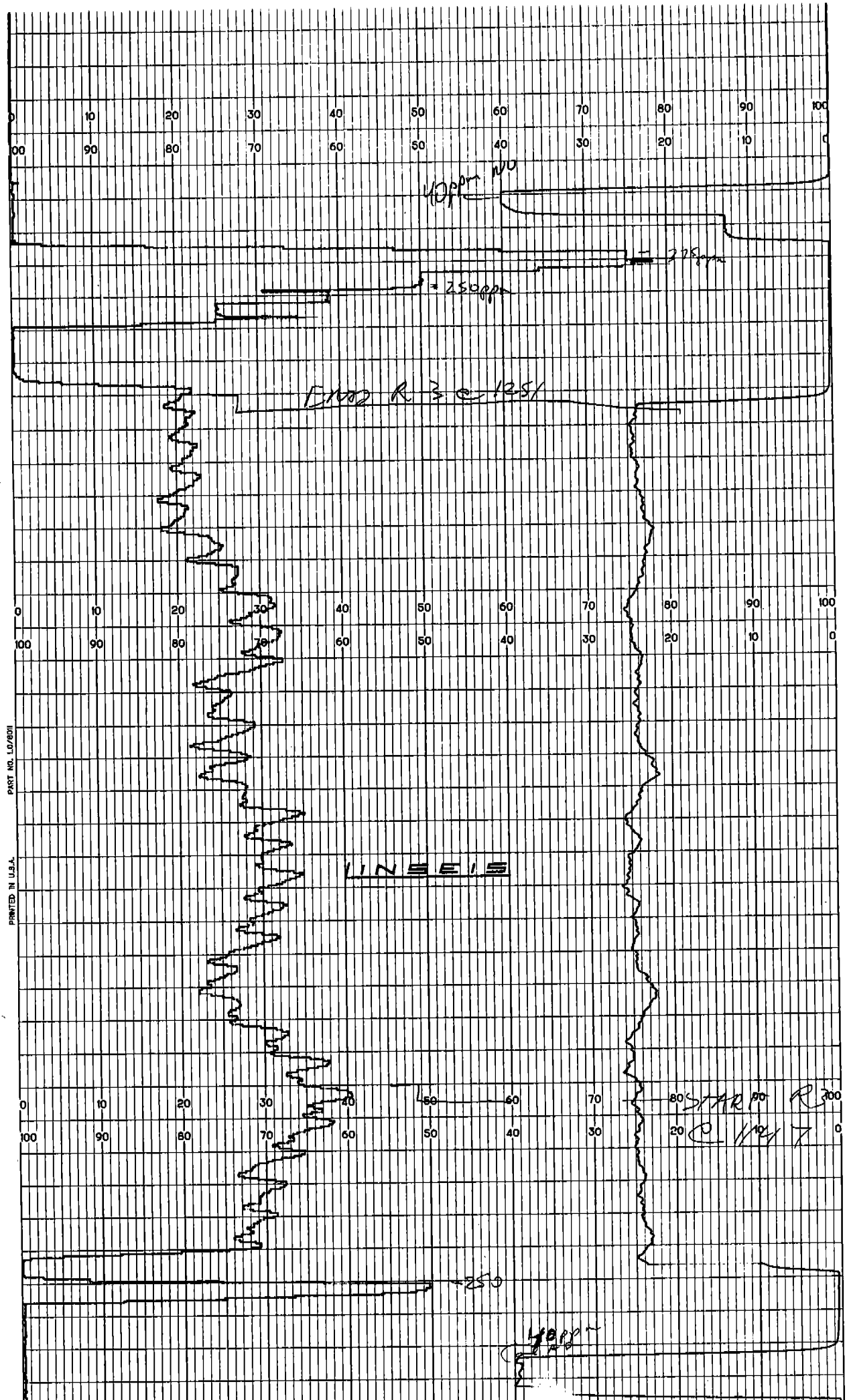
INSTRUMENT RECORDER TRACES/DATA LOG

NOx AND CO TRACE

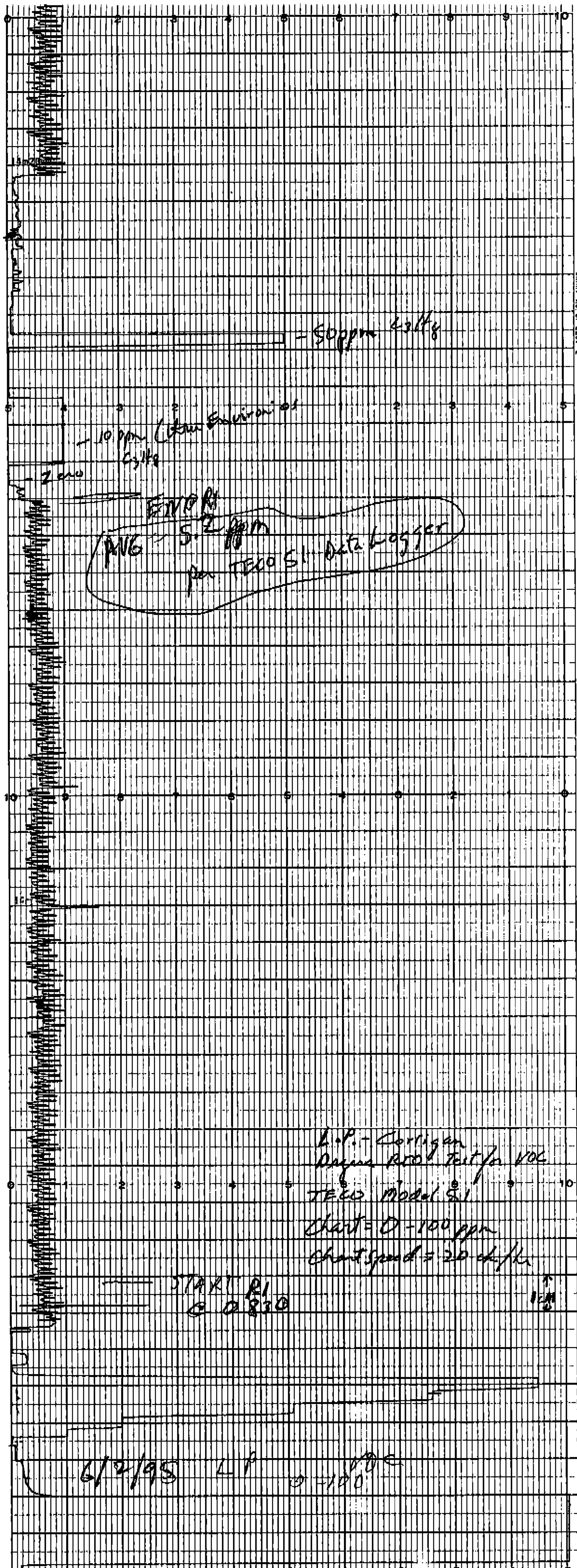


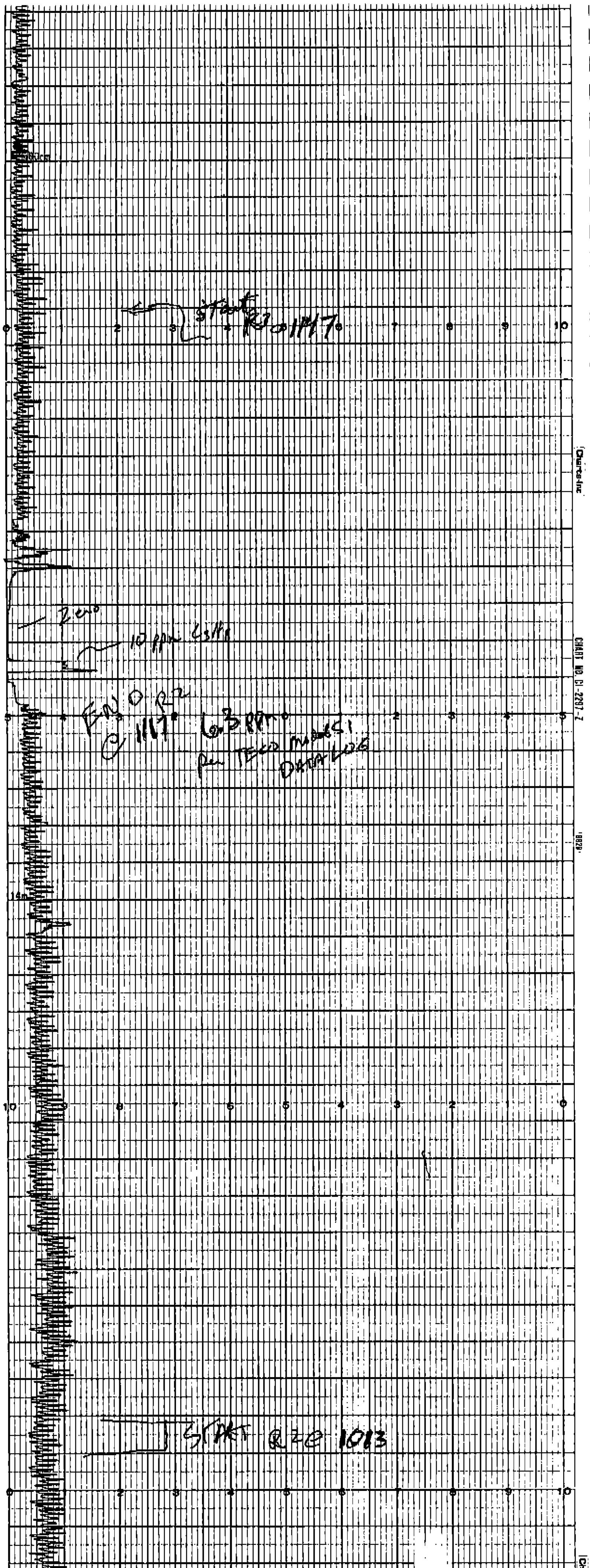
PRINTED IN U.S.A.
PART NO. LO/8011
End R1
40 ppm NO
L.P. Corrigan
DRYERS RIO TEST - 6-2-95
START R1
@ 0830
6/2/95
375 ppm CO
250 ppm CO
125 ppm CO
0-500 ppm CO
75 ppm NO
50 NO
25 ppm NO

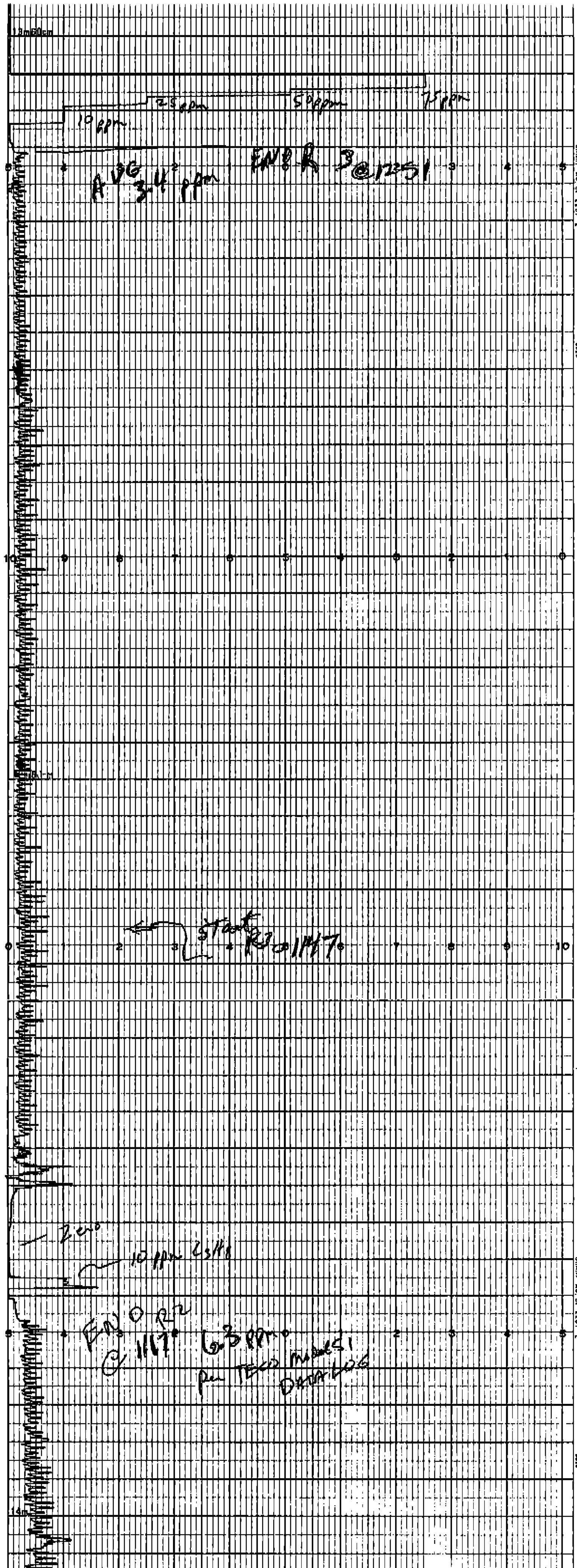

PRINTED IN U.S.A.
PART NO. L0/80M


PART NO. LO/6011
PRINTED IN U.S.A.

VOC TRACE


Charts-Inc
CHART NO. CL-2297-Z
- 50ppm C3H8
- 10 ppm (Low Environ.)
C3H8
- Zero
ENV. R1
AVG 5.2 ppm
per TECO 51 Data Logger
L.P. - Corrigan
Dryer R.O. Test for VOC
TECO Model 51
Chart = 0 - 100 ppm
Chart Speed = 20 cm/hr
START R1
@ 0830
1 cm
6/2/95 LP 0-100


start R2 @ 1147
zero
6.3 ppm
per TECO model 51 DATA LOG
START R2 @ 1013
Charts-Inc
CHART NO. CI-2287-Z


10 ppm
25 ppm
50 ppm
75 ppm
CHART NO. CL-2297-Z
AVG 3.4 ppm
END R 3 @ 1251
Start R3 @ 1147
Charts-Inc
Zero
10 ppm C3H8
END OF R2 @ 1147 6.3 ppm
per TECO model 51 DATALOG
CHART NO. CL-2297-Z

APPENDIX D.

HCHO ANALYSIS REPORT (OXFORD LABS)

OXFORD Laboratories Inc.

Analytical and Consulting Chemists
1316 South Fifth Street
Wilmington, N.C. 28401
(910) 763-9793
Fax (910) 343-9688

DATE RECEIVED 06-06-95
DATE REPORTED 06-12-95
95W7216

ENVIRONMENTAL MONITORING
242 INGLE SIDE DR.
MADISON, MS 39110

P.O. # DR0604

ATTENTION: DANNY RUSSELL

SAMPLE DESCRIPTION: 10 FORMALDEHYDE

7. LPC R1
8. LPC R2
9. LPC R3
10. BLANK

RESULTS

	7	8	9	10
Formaldehyde, as HCHO, Total ug	2480	2870	1490	37.9

Ann McMillan

ANN MCMILLAN, ANALYST

APPENDIX E.

ARMSTRONG ENVIRONMENTAL REPORT

Exhaust Emission Sampling
Louisiana Pacific, Corrigan, TX
Dryers #1, #2 & #3
June 1 & 2, 1995
Armstrong Environmental, Inc.
Project W-1696-95

Report Prepared For:
Mr. Dan Russel
EMS
PO Box 655
Ridgeland, MS 39158

Report Prepared June 9, 1995 By:
Armstrong Environmental, Inc.
7715 Sovereign Row
Dallas, Texas 75247
(214) 631-0021

TABLE OF CONTENTS

I. INTRODUCTION

A series of tests were performed on the exhausts associated with Dryers #1, #2 and #3 at the Louisiana Pacific facility located in Corrigan, TX on June 1 and 2, 1995.

The purpose of this test series was to determine the emission rates of particulate, Nox, CO, VOC and Formaldehyde in terms of lbs/hr simultaneously with the sampling performed on the RTO exhaust. Sampling for VOC and Formaldehyde was performed concurrently with the exhaust sampling on June 2, particulate, Nox and CO testing was performed non-concurrently on June 1.

Testing followed procedures detailed in Title 40: Code of Federal Regulations (40:CFR).

Sampling was performed by Richard Taylor, Matt Taylor, John Dahlem, Danny Barrera, Joe Barrera, Jerry Salinas and Tom Armstrong of Armstrong Environmental, Inc. using an 3 Apex Method 5 Sampling Trains, three FUJI continuous CO analyzers and three TECO Model 51 continuous FID analyzers.

Three one hour repetitions were performed on June 1 commencing at 10:25 am and ending at 5:30 pm for PM, Nox and CO, and three one hour repetitions were performed on June 2, commencing at 8:30 am and ending at 12:55 pm.

Submitted by:
Armstrong Environmental, Inc.

Tom Armstrong /os

Tom Armstrong
President

II. SUMMARY

A series of tests were performed on the exhaust associated with Dryers #1, #2 and #3 at the Louisiana Pacific facility in Corrigan, TX on June 1 and 2, 1995.

Sampling was performed following procedures detailed in Title 40: Code of Federal Regulations.

Results of this test series are summarized in Table 1-6.

Results indicate the following emission rates:

Component/Run#	1	2	3	Ave.
Dryer #1 Exhaust				
Particulate, lbs/hr	28.53	39.91	36.36	34.93
Nox, lbs/hr	4.18	5.01	4.73	4.64
CO, lbs/hr	26.57	29.28	21.91	25.92
VOC as C - *DB, lbs/hr	43.96	61.63	55.56	53.72
Formaldehyde, lbs/hr	1.151	1.30	0.293	0.914
*DB - Dry Basis				
Dryer #2 Exhaust				
Particulate, lbs/hr	28.61	38.77	32.02	33.13
Nox, lbs/hr		3.95	6.29	5.12
CO, lbs/hr	7.22	7.31	6.36	6.96
VOC as C - DB, lbs/hr	26.20	51.30	56.99	44.83
Formaldehyde, lbs/hr	1.252	0.671	0.311	0.745
Nox, lbs/hr	5.01	4.66	6.33	5.33
Dryer #3 Exhaust				
Particulate, lbs/hr	27.14	24.81	23.54	25.16
Nox, lbs/hr	3.50	3.95	3.98	3.81
CO, lbs/hr	25.68	11.43	12.67	16.59
VOC as C - DB, lbs/hr	31.19	35.57	36.97	34.57
Formaldehyde, lbs/hr	0.644	0.712	0.471	0.609

Based on the results of this test series, the following comments can be made:

1. Power was lost about 7 minutes before the completion of Run#1 on June 1. Particulate sampling continued as soon as power cords could be strung, however, the CEM data did not continue, although a post span was performed after power came back up.

2. Nox sampling on Dryer #2 was repeated during the VOC and Formaldehyde runs on June 2 as the Nox analyzer was not performing in a stable manner on June 1.

3. VOC is reported on a dry basis as C (Carbon), although measurements were taken on a wet basis. Concentrations on wet basis were adjusted up for these calculations.

4. Field blanks and spiked blanks were taken in the field. The spike consisted of a 1 ml aliquot of 1.004 mg/ml formaldehyde in water added to the DNPH reagent. Results yielded 1.143 mg, within the +/- 20% given in Method 0011. Field blanks showed no formaldehyde detected.

5. Particulate data is reported as two varaities; "Front-Half" and "Back-Half". Front half is the probe wash and filter, which is what USEPA calls particulate. "Back-Half" is the residue in the impinger solutions, which the Texas Natural Resources Conservation Commission requests added to the "Front-Half".

SUMMARY OF EMISSIONS TEST DATA

Table : 1
Plant : Louisiana Pacific, Corrigan, TX
Location : Dryer #1 Exhaust
Operator : J. Dahlem, C. Jefferson, T. Armstrong
Test Date : 1-Jun-95

Repetition :	1	2	3
STACK GAS			
Temperature, F	196.8	195.5	194.9
Velocity, fps	39.63	37.71	37.78
Volume Flow, acfm	48155.2	45817.1	45905.3
scfm	32169.0	28087.2	28722.6
scfh	1930141	1685234	1723356
Moisture, %	14.66%	21.87%	20.33%
CO2, %	2.50	4.00	3.50
O2, %	16.50	16.00	14.00
SAMPLE			
Start Time, hrs:min	10:25 AM	2:45 PM	4:25 PM
Finish Time, hrs:min	11:31 AM	3:54 PM	5:30 PM
Sample Volume, scf	35.012	31.101	29.921
Isokinetic Ratio, %	103.5112	105.3125	99.07621
PARTICULATE			
Front Half			
Sample Weight, mg	205.35	302.76	252.20
Concentration, gr/scf	0.0905	0.150209	0.130058
Emissions, lbs/hr	24.96205	36.17421	32.02983
Back Half			
Sample Weight, mg	29.35	31.28	34.10
Concentration, gr/scf	0.012935	0.015519	0.017585
Emissions, lbs/hr	3.567744	3.73738	4.330759
Total Particulate, lbs/hr	28.5298	39.91159	36.36059
CARBON MONOXIDE			
Concentration, ppm	189.36	239	174.9
Emissions, lbs/hr	26.56741	29.27722	21.9097
NITROGEN OXIDE AS NO2			
Concentration, ppm	18.13	24.9	23
Emissions, lbs/hr	4.178867	5.011077	4.733412

SUMMARY OF EMISSIONS TEST DATA

Table : 2
Plant : Louisiana Pacific, Corrigan, TX
Location : Dryer #1 Exhaust
Operator : J. Dahlem, C. Jefferson, T. Armstrong
Test Date : 2-Jun-95

Repetition :	1	2	3
STACK GAS			
Temperature, F	195.2	196.6	195.4
Velocity, fps	37.21	37.14	37.39
Volume Flow, acfm	45215.1	45128.5	45433.5
scfm	23770.0	23806.7	25643.4
scfh	1426202	1428404	1538601
Moisture, %	33.10%	32.82%	28.19%
CO2, %	4.50	4.00	4.00
O2, %	16.00	16.00	16.00
SAMPLE			
Start Time, hrs:min	8:31 AM	10:13 AM	11:50 AM
Finish Time, hrs:min	9:33 AM	11:20 AM	12:55 PM
Sample Volume, scf	45.571	45.309	45.879
Isokinetic Ratio, %	109.9145	109.1144	102.5739
VOC			
Concentration as C3H8 - WB	220.62	310.60	299.30
Concentration as C - WB, ppm	661.86	931.8	897.9
Concentration as C - DB	989.3909	1387.061	1250.445
Emissions as C, lbs/hr - DB	43.9586	61.62707	55.55722
FORMALDEHYDE			
Sample Weight, mg	16.69	18.84	4.25
Concentration, ppm	10.35575	11.69142	2.636573
Emissions, lbs/hr	1.151414	1.299922	0.29315

SUMMARY OF EMISSIONS TEST DATA

Table : 3
Plant : Louisiana Pacific, Corrigan, TX
Location : Dryer #2 Exhaust
Operator : M. Taylor, D. Barrera, R. Taylor
Test Date : 1-Jun-95

Repetition :	1	2	3
STACK GAS			
Temperature, F	213.5	213.2	216.8
Velocity, fps	42.99	42.88	42.36
Volume Flow, acfm	51267.3	51143.7	50517.6
scfm	31796.9	29874.0	30468.5
scfh	1907813	1792441	1828112
Moisture, %	18.75%	22.75%	19.77%
CO2, %	4.00	3.50	4.50
O2, %	18.00	17.00	16.50
SAMPLE			
Start Time, hrs:min	8:30 AM	10:13 AM	11:47 AM
Finish Time, hrs:min	9:37 AM	11:19 AM	12:52 PM
Sample Volume, scf	37.551	34.066	33.712
Isokinetic Ratio, %	109.2673	105.5088	102.3729
PARTICULATE			
Front Half			
Sample Weight, mg	212.56	279.97	203.00
Concentration, gr/scf	0.087343	0.12681	0.092914
Emissions, lbs/hr	23.81256	32.48193	24.27318
Back Half			
Sample Weight, mg	42.78	54.19	64.79
Concentration, gr/scf	0.017579	0.024545	0.029655
Emissions, lbs/hr	4.792535	6.287088	7.747091
Total Particulate, lbs/hr	28.60509	38.76902	32.02027
CARBON MONOXIDE			
Concentration, ppm	52.04	56.17	47.83
Emissions, lbs/hr	7.216804	7.318482	6.35587
NITROGEN OXIDE AS NO2			
Concentration, ppm	NM	18.49	28.84
Emissions, lbs/hr	NM	3.957795	6.296072

SUMMARY OF EMISSIONS TEST DATA

Table : 4
Plant : Louisiana Pacific, Corrigan, TX
Location : Dryer #2 Exhaust
Operator : M. Taylor, D. Barrera, R. Taylor
Test Date : 2-Jun-95

Repetition :	1	2	3
STACK GAS			
Temperature, F	208.8	208.1	208.5
Velocity, fps	44.04	42.45	43.97
Volume Flow, acfm	52519.5	50623.7	52443.5
scfm	32590.5	32149.6	33588.1
scfh	1955433	1928975	2015284
Moisture, %	18.36%	16.96%	16.31%
CO2, %	4.00	4.50	4.50
O2, %	17.50	16.00	17.00
SAMPLE			
Start Time, hrs:min	8:30 AM	10:13 AM	11:47 AM
Finish Time, hrs:min	9:37 AM	11:19 AM	12:52 PM
Sample Volume, scf	53.176	50.948	49.139
Isokinetic Ratio, %	101.875	98.94475	91.344
VOC			
Concentration as C3H8 - WB	117.04	233.10	260.97
Concentration as C - WB, ppm	351.12	699.3	782.91
Concentration as C - DB	430.0947	842.1464	935.5245
Emissions as C, lbs/hr - DB	26.20004	51.30096	56.98926
FORMALDEHYDE			
Sample Weight, mg	15.44	8.27	3.83
Concentration, ppm	8.21453	4.399805	2.039271
Emissions, lbs/hr	1.25226	0.670726	0.310876
NITROGEN OXIDE AS NO2			
Concentration, ppm	21.44	20.25	26.29
Emissions, lbs/hr	5.006558	4.664695	6.327009

SUMMARY OF EMISSIONS TEST DATA

Table : 5
Plant : Louisiana Pacific, Corrigan, TX
Location : Dryer #3 Exhaust
Operator : J. Salinas, J. Barrera
Test Date : 1-Jun-95

Repetition :	1	2	3
STACK GAS			
Temperature, F	145.3	147.6	151.8
Velocity, fps	67.50	67.33	66.58
Volume Flow, acfm	38964.6	38865.4	38434.7
scfm	27882.2	27541.8	26988.8
scfh	1672935	1652511	1619329
Moisture, %	15.84%	16.26%	16.49%
CO2, %	2.00	2.00	1.50
O2, %	18.00	17.50	17.00
SAMPLE			
Start Time, hrs:min	10:23 AM	2:43 PM	4:25 PM
Finish Time, hrs:min	11:38 AM	3:48 PM	5:30 PM
Sample Volume, scf	37.750	37.548	36.702
Isokinetic Ratio, %	102.3584	103.0676	102.8105
PARTICULATE			
Front Half			
Sample Weight, mg	264.45	229.64	220.60
Concentration, gr/scf	0.10809	0.094369	0.092743
Emissions, lbs/hr	25.84097	22.28509	21.46136
Back Half			
Sample Weight, mg	13.30	26.03	21.45
Concentration, gr/scf	0.005436	0.010697	0.009018
Emissions, lbs/hr	1.299621	2.526045	2.086791
Total Particulate, lbs/hr	27.14059	24.81114	23.54815
CARBON MONOXIDE			
Concentration, ppm	211.17	95.12	107.64
Emissions, lbs/hr	25.67929	11.42583	12.67011
NITROGEN OXIDE AS NO2			
Concentration, ppm	17.51	20.02	20.56
Emissions, lbs/hr	3.498136	3.950753	3.975848

SUMMARY OF EMISSIONS TEST DATA

Table : 6
Plant : Louisiana Pacific, Corrigan, TX
Location : Dryer #3 Exhaust
Operator : J. Salinas, J. Barrera
Test Date : 2-Jun-95

Repetition :	1	2	3
STACK GAS			
Temperature, F	190.6	188.9	189.6
Velocity, fps	74.28	72.77	71.99
Volume Flow, acfm	42880.3	42009.5	41557.1
scfm	28489.5	27552.0	27489.8
scfh	1709370	1653123	1649385
Moisture, %	16.31%	17.62%	16.81%
CO2, %	1.50	2.50	2.50
O2, %	19.50	18.00	18.00
SAMPLE			
Start Time, hrs:min	8:30 AM	10:13 AM	11:45 AM
Finish Time, hrs:min	9:36 AM	11:16 AM	12:49 PM
Sample Volume, scf	58.097	56.241	55.359
Isokinetic Ratio, %	105.3788	105.4835	104.064
VOC			
Concentration as C3H8 - WB	163.38	183.44	192.50
Concentration as C - WB, ppm	490.14	550.32	577.5
Concentration as C - DB	585.6845	667.9986	694.169
Emissions as C, lbs/hr - DB	31.18853	35.57186	36.96548
FORMALDEHYDE			
Sample Weight, mg	9.94	10.99	7.26
Concentration, ppm	4.83918	5.347926	3.532017
Emissions, lbs/hr	0.644877	0.712673	0.470682

III. PROCEDURES

The procedure for emissions sampling followed USEPA test methods as detailed in Title 40: Code of Federal Regulations. The following methods were used:

Method	Title
1	Sample and Velocity Traverses for Stationary Sources
2	Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)
3	Gas Analysis for CO2, O2, Excess Air and Dry Molecular Weight
4	Determination of Moisture Content in Stack Gases
5	Determination of Particulate Emissions from Stationary Sources
7E	Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Procedure)
10	Determination of Carbon Monoxide Emission from Stationary Sources
25A	Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer
0011	Sampling for Aldehyde and Ketone Emissions from Stationary Sources

O2 and CO2 were determined using Fyrite Analyzers.

Sampling was performed on the three dryer exhausts using the following test matrix:

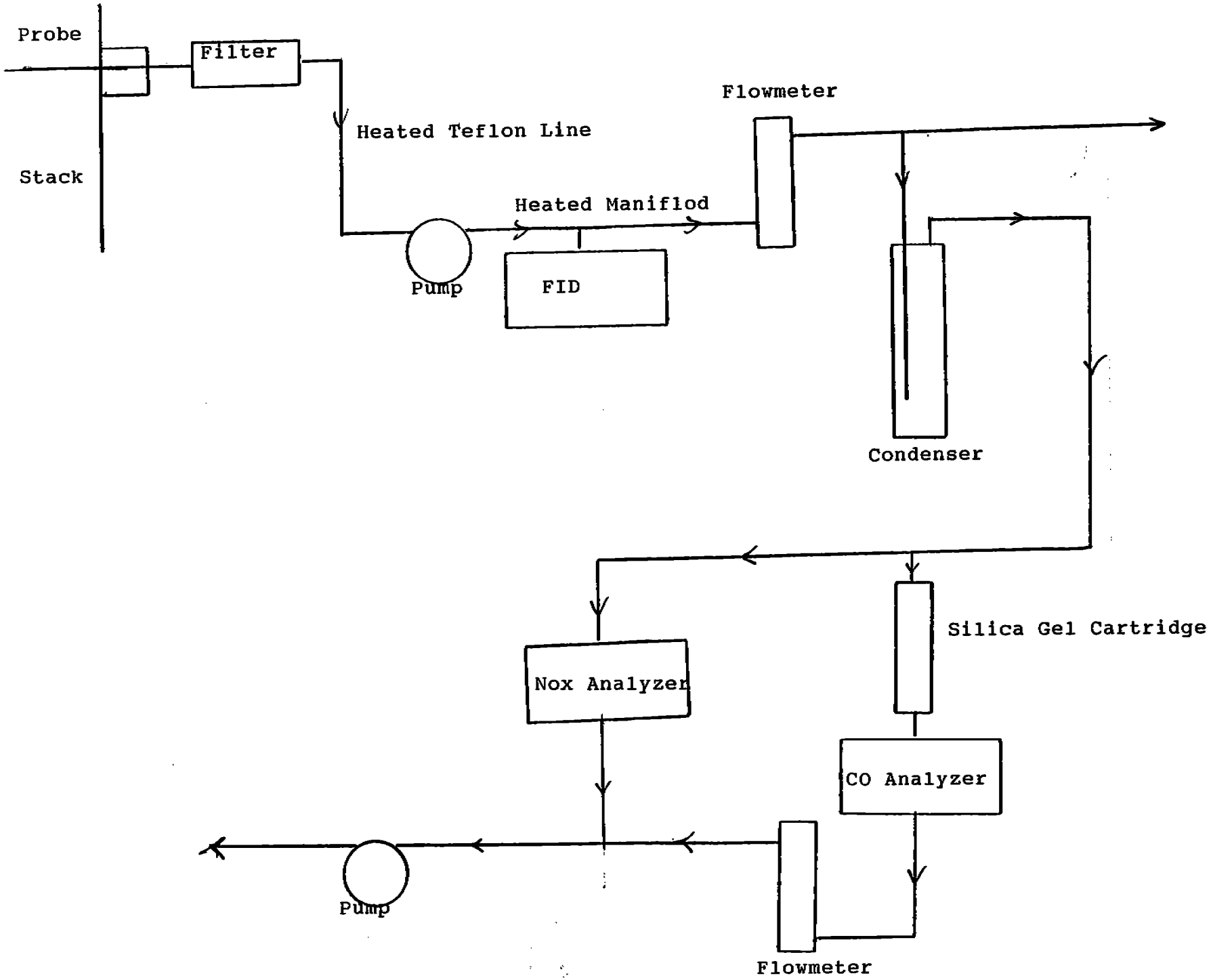
Dryer #	1	2	3
PM, Nox, CO			
Sample Train	Apex	Apex	Apex
Sample Points	25	20	16
Duration, minutes	62.5	60	64
Minutes/point	2.5	3	4
Nozzle Size, inches	0.250	0.2563	0.191
Nozzle Material	Stainless	Stainless	Stainless
Probe Liner	Teflon	Teflon	Teflon
Impinger Solution	H2O	H2O	H2O
VOC, Formaldehyde			
Sample Train	Apex	Apex	Apex
Sample Points	25	20	16

Duration, minutes	62.5	60	60
Minutes/point	2.5	3	3.75
Nozzle Size, inches	0.322	0.312	0.2386
Nozzle Material	Glass	Glass	Glass
Probe Liner	Teflon	Teflon	Teflon
Iimpinger Solution	DNPH	DNPH	DNPH

CEM data was taken using heated teflon sample lines and manifolds. The following matrix was used:

Dryer #	1	2	3
CO Analyzer	Fuji NDIR	Fuji NDIR	Fuji NDIR
CO Standards, ppm in N2	391	400	400
(Certified +/- 2%)	250	100	98
	98	50.5	50.5
Nox Analyzer	Teco 10	Teco 10	Teco 10
Nox Standards, NO in N2, ppm	112	95.8	95.8
(EPA Protocol 1)	254	50.8	50.8
VOC analyzer (FID)	Teco 51	Teco 51	Teco 51
VOC Standards, C3H8 in N2, ppm	495	909	200
(EPA Protocol 1)	203	495	104.8
	50.5	200	29.98

All analyzers were zeroed with N2. A schematic of CEM flow is included.


Probe
Filter
Stack
Heated Teflon Line
Flowmeter
Heated Manifiod
Pump
FID
Condenser
Silica Gel Cartridge
Nox Analyzer
CO Analyzer
Pump
Flowmeter

APPENDIX A

EMISSION TEST SUMMARY

PLANT : Louisiana Pacific, Corrigan, TX
DATE : 1-Jun-95
PLACE : Dryer #1 Exhaust
RUN# : 1

TEST DURATION (MINUTES) :	62.5	LIQUID COLLECTED (mls) :	127.8
NOZZLE DIAMETER (INCH.) :	0.25	PARTICULATE WEIGHT (Front half mg) :	205.35
METER COEFFICIENT (Y) :	1.01279	PARTICULATE WEIGHT (Back half mg) :	29.35
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-9.7
GAS METER VOL.(Cu.Ft.) :	35.326	PERCENT CO2 :	2.5
BAROMETRIC PRESSURE :	29.85	PERCENT O2 :	16.5
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (Inch):	20.25	STACK LENGTH(Inchs) :	54
STACK AREA (Sq.Ft.) :	2.236544	STACK WIDTH(inchs) :	54
NOZZLE AREA (feet):	0.000341	STACK AREA (Sq.Ft.) :	20.25

ENTER THE STACK AREA SHOWN ABOVE: 20.25

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	35.0116
VOLUME OF WATER VAPOR (STD. CU.FT.):	6.0155
FRACTIONAL MOISTURE CONTENT (%):	0.1466
DRY BASE:	81.0000
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.0600
MOLECULAR WT. OF STACK GAS (WET BASE):	27.4383
STACK PRESSURE (inch Hg):	29.1368
STACK GAS VELOCITY (ft/sec.):	39.6339
ACTUAL STACK GAS FLOW RATE (ACFM):	48155.1949
STANDARD STACK GAS FLOW RATE (SCFH):	1930141.47

PARTICULATE

FRONT HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.0905
PARTICULATE CONCENTRATION (LBS/SCF):	1.29E-05
PARTICULATE EMISSION (LBS/HR):	24.9621

BACK HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.0129
PARTICULATE CONCENTRATION (LBS/SCF):	1.85E-06
PARTICULATE EMISSION (LBS/HR):	3.5677
ISOKINETIC RATIO (%):	103.5112

POINTS	STACK T. deg F	DELTA P	QUAR D.	DELTA H	METER T. INLET	METER T. OUTLET	
1	196	0.18	0.424264	0.45	75	74	
2	197	0.18	0.424264	0.45	75	74	
3	197	0.19	0.43589	0.46	76	74	
4	198	0.23	0.479583	0.55	76	74	
5	198	0.25	0.5	0.60	77	75	
6	196	0.22	0.469042	0.53	78	75	
7	197	0.24	0.489898	0.57	78	75	
8	197	0.26	0.509902	0.62	79	76	
9	198	0.33	0.574456	0.79	80	76	
10	197	0.39	0.6245	0.94	81	76	
11	196	0.23	0.479583	0.55	80	76	
12	197	0.24	0.489898	0.57	81	77	
13	198	0.31	0.556776	0.74	82	78	
14	197	0.43	0.655744	1.00	82	78	
15	197	0.54	0.734847	1.30	82	79	
16	196	0.35	0.591608	0.84	83	79	
17	197	0.49	0.7	1.20	82	80	
18	198	0.54	0.734847	1.30	83	80	
19	197	0.65	0.806226	1.60	84	80	
20	196	0.68	0.824621	1.60	84	80	
21	196	0.41	0.640312	0.98	85	81	
22	197	0.46	0.678233	1.10	85	81	
23	196	0.57	0.754983	1.40	85	81	METER T.
24	196	0.65	0.806226	1.60	85	82	AVERAGE
25	196	0.70	0.83666	1.70	85	82	
	196.84		0.6089	0.9376	80.9200	77.7200	79.3200

EMISSION TEST SUMMARY

PLANT : Louisiana Pacific, Corrigan, TX
DATE : 1-Jun-95
PLACE : Dryer #1 Exhaust
RUN# : 2

TEST DURATION (MINUTES) :	62.5	LIQUID COLLECTED (mls) :	184.9
NOZZLE DIAMETER (INCH.) :	0.25	PARTICULATE WEIGHT (Front half mg) :	302.76
METER COEFFICIENT (Y) :	1.01279	PARTICULATE WEIGHT (Back half mg) :	31.28
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-9.6
GAS METER VOL.(Cu.Ft.) :	31.874	PERCENT CO2 :	4
BAROMETRIC PRESSURE :	29.85	PERCENT O2 :	16
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (Inch):	20.25	STACK LENGTH(inches) :	
STACK AREA (Sq.Ft.) :	2.236544	STACK WIDTH(inches) :	
NOZZLE AREA (feet):	0.000341	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 20.25

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	31.1006
VOLUME OF WATER VAPOR (STD. CU.FT.):	8.7032
FRACTIONAL MOISTURE CONTENT (%):	0.2187
DRY BASE:	80.0000
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.2800
MOLECULAR WT. OF STACK GAS (WET BASE):	26.8136
STACK PRESSURE (inch Hg):	29.1441
STACK GAS VELOCITY (ft/sec.):	37.7096
ACTUAL STACK GAS FLOW RATE (ACFM):	45817.1425
STANDARD STACK GAS FLOW RATE (SCFH):	1685233.98

PARTICULATE

FRONT HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.1502
PARTICULATE CONCENTRATION (LBS/SCF):	2.15E-05
PARTICULATE EMISSION (LBS/HR):	36.1742

BACK HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.0155
PARTICULATE CONCENTRATION (LBS/SCF):	2.22E-06
PARTICULATE EMISSION (LBS/HR):	3.7374
ISOKINETIC RATIO (%):	105.3125

POINTS	STACK T. deg F	DELTA P	QUAR D.	DELTA H	METER T. INLET	METER T. OUTLET	
1	196	0.12	0.34641	0.26	82	82	
2	197	0.13	0.360555	0.29	84	84	
3	194	0.16	0.4	0.35	85	84	
4	195	0.19	0.43589	0.42	86	84	
5	197	0.23	0.479583	0.50	87	85	
6	195	0.16	0.4	0.35	87	85	
7	194	0.18	0.424264	0.40	87	85	
8	196	0.25	0.5	0.55	88	85	
9	197	0.35	0.591608	0.77	88	85	
10	196	0.35	0.591608	0.77	89	85	
11	195	0.22	0.469042	0.48	88	85	
12	196	0.23	0.479583	0.50	88	86	
13	197	0.32	0.565685	0.70	88	86	
14	197	0.40	0.632456	0.88	89	87	
15	196	0.49	0.7	1.10	90	87	
16	195	0.30	0.547723	0.66	90	87	
17	194	0.33	0.574456	0.72	90	88	
18	194	0.42	0.648074	0.92	91	88	
19	195	0.53	0.728011	1.20	91	88	
20	196	0.65	0.806226	1.40	91	89	
21	195	0.38	0.616441	0.83	92	89	
22	196	0.44	0.663325	0.96	92	89	
23	195	0.56	0.748331	1.20	92	89	METER T.
24	195	0.63	0.793725	1.40	92	89	AVERAGE
25	196	0.69	0.830662	1.50	92	89	
	195.52		0.5733	0.7644	88.7600	86.4000	87.5800

EMISSION TEST SUMMARY

PLANT : Louisiana Pacific, Corrigan, TX
DATE : 1-Jun-95
PLACE : Dryer #1 Exhaust
RUN# : 3

TEST DURATION (MINUTES) :	62.5	LIQUID COLLECTED (mls) :	162.2
NOZZLE DIAMETER (INCH.) :	0.25	PARTICULATE WEIGHT (Front half mg) :	252.2
METER COEFFICIENT (Y) :	1.01279	PARTICULATE WEIGHT (Back half mg) :	34.1
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-9.6
GAS METER VOL.(Cu.Ft.) :	30.807	PERCENT CO2 :	3.5
BAROMETRIC PRESSURE :	29.85	PERCENT O2 :	14
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (Inch):	20.25	STACK LENGTH(Inchs) :	
STACK AREA (Sq.Ft.) :	2.236544	STACK WIDTH(Inchs) :	
NOZZLE AREA (feet):	0.000341	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 20.25

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	29.9208
VOLUME OF WATER VAPOR (STD. CU.FT.):	7.6348
FRACTIONAL MOISTURE CONTENT (%):	0.2033
DRY BASE:	82.5000
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.1200
MOLECULAR WT. OF STACK GAS (WET BASE):	26.8594
STACK PRESSURE (inch Hg):	29.1441
STACK GAS VELOCITY (ft/sec.):	37.7822
ACTUAL STACK GAS FLOW RATE (ACFM):	45905.3124
STANDARD STACK GAS FLOW RATE (SCFH):	1723355.52

PARTICULATE

FRONT HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.1301
PARTICULATE CONCENTRATION (LBS/SCF):	1.86E-05
PARTICULATE EMISSION (LBS/HR):	32.0298

BACK HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.0176
PARTICULATE CONCENTRATION (LBS/SCF):	2.51E-06
PARTICULATE EMISSION (LBS/HR):	4.3308
ISOKINETIC RATIO (%):	99.0762

POINTS	STACK T. deg F	DELTA P	QUAR D.	DELTA H	METER T. INLET	METER T. OUTLET	
1	196	0.18	0.424264	0.41	88	88	
2	197	0.15	0.387298	0.35	89	88	
3	197	0.16	0.4	0.37	89	88	
4	197	0.18	0.424264	0.41	89	88	
5	196	0.26	0.509902	0.59	90	88	
6	197	0.19	0.43589	0.44	91	88	
7	196	0.20	0.447214	0.46	91	88	
8	196	0.26	0.509902	0.46	91	88	
9	195	0.32	0.565685	0.60	92	88	
10	195	0.40	0.632456	0.92	92	89	
11	195	0.20	0.447214	0.46	93	89	
12	196	0.22	0.469042	0.51	93	89	
13	195	0.26	0.509902	0.59	92	89	
14	195	0.36	0.6	0.83	92	89	
15	194	0.47	0.685565	1.10	92	89	
16	194	0.32	0.565685	0.73	92	90	
17	194	0.30	0.547723	0.69	92	90	
18	195	0.37	0.608276	0.85	92	90	
19	194	0.52	0.72111	1.20	92	90	
20	193	0.65	0.806226	1.50	92	90	
21	194	0.41	0.640312	0.94	92	90	
22	193	0.44	0.663325	1.00	92	90	
23	193	0.56	0.748331	1.30	92	90	METER T.
24	193	0.66	0.812404	1.60	92	90	AVERAGE
25	192	0.67	0.818535	1.60	91	89	
	194.88		0.5752	0.7964	91.3200	89.0000	90.1600

EMISSION TEST SUMMARY

PLANT : Louisiana Pacific, Corrigan, TX
DATE : 2-Jun-95
PLACE : Dryer #1 Exhaust
RUN# : 3

TEST DURATION (MINUTES) :	62.5	LIQUID COLLECTED (mls) :	382.7
NOZZLE DIAMETER (INCH.) :	0.322	PARTICULATE WEIGHT (Front half mg) :	0
METER COEFFICIENT (Y) :	1.01279	PARTICULATE WEIGHT (Back half mg) :	0
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-9.6
GAS METER VOL.(Cu.Ft.) :	46.989	PERCENT CO2 :	4
BAROMETRIC PRESSURE :	29.9	PERCENT O2 :	16
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	0	STACK LENGTH(inchs) :	
STACK AREA (Sq.Ft.) :	0	STACK WIDTH(inchs) :	
NOZZLE AREA (feet):	0.000566	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 20.25

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	45.8793
VOLUME OF WATER VAPOR (STD. CU.FT.):	18.0137
FRACTIONAL MOISTURE CONTENT (%):	0.2819
DRY BASE:	80.0000
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.2800
MOLECULAR WT. OF STACK GAS (WET BASE):	26.0998
STACK PRESSURE (inch Hg):	29.1941
STACK GAS VELOCITY (ft/sec.):	37.3939
ACTUAL STACK GAS FLOW RATE (ACFM):	45433.5442
STANDARD STACK GAS FLOW RATE (SCFH):	1538601.19
ISOKINETIC RATIO (%):	102.5739

POINTS	STACK T. deg F	DELTA P	QUAR D.	DELTA H	METER T. INLET	METER T. OUTLET	
1	197	0.19	0.43589	0.94	88	88	
2	196	0.17	0.412311	0.84	88	88	
3	196	0.18	0.424264	0.89	88	88	
4	196	0.23	0.479583	1.10	89	88	
5	195	0.25	0.5	1.20	89	88	
6	195	0.16	0.4	0.79	89	88	
7	196	0.17	0.412311	0.85	89	88	
8	197	0.25	0.5	1.20	89	88	
9	196	0.31	0.556776	1.50	90	88	
10	195	0.35	0.591608	1.70	90	88	
11	194	0.24	0.489898	1.20	91	88	
12	195	0.30	0.547723	1.50	91	89	
13	196	0.40	0.632456	1.90	91	89	
14	194	0.35	0.591608	1.70	91	89	
15	195	0.34	0.583095	1.70	91	89	
16	194	0.30	0.547723	1.50	91	89	
17	195	0.35	0.591608	1.70	91	89	
18	196	0.40	0.632456	1.90	91	89	
19	197	0.40	0.632456	1.90	91	89	
20	195	0.45	0.67082	2.20	90	89	
21	194	0.32	0.565685	1.60	90	89	
22	196	0.33	0.574456	1.60	90	89	
23	196	0.51	0.714143	2.50	90	89	METER T.
24	196	0.60	0.774597	2.90	90	89	AVERAGE
25	194	0.60	0.774597	2.90	90	89	
	195.44		0.5614	1.5884	89.9200	88.5600	89.2400

EMISSION TEST SUMMARY

PLANT : Louisiana Pacific, Corrigan, TX
DATE : 2-Jun-95
PLACE : Dryer #1 Exhaust
RUN# : 2

TEST DURATION (MINUTES) :	62.5	LIQUID COLLECTED (mls) :	470.3
NOZZLE DIAMETER (INCH.) :	0.322	PARTICULATE WEIGHT (Front half mg) :	0
METER COEFFICIENT (Y) :	1.01279	PARTICULATE WEIGHT (Back half mg) :	0
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-9.3
GAS METER VOL.(Cu.Ft.) :	46.181	PERCENT CO2 :	4
BAROMETRIC PRESSURE :	29.9	PERCENT O2 :	16
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (Inch):	0	STACK LENGTH(inches) :	
STACK AREA (Sq.Ft.) :	0	STACK WIDTH(inches) :	
NOZZLE AREA (feet):	0.00057	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 20.25

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	45.3087
VOLUME OF WATER VAPOR (STD. CU.FT.):	22.1370
FRACTIONAL MOISTURE CONTENT (%):	0.3282
DRY BASE:	80.0000
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.2800
MOLECULAR WT. OF STACK GAS (WET BASE):	25.5777
STACK PRESSURE (inch Hg):	29.2162
STACK GAS VELOCITY (ft/sec.):	37.1428
ACTUAL STACK GAS FLOW RATE (ACFM):	45128.5459
STANDARD STACK GAS FLOW RATE (SCFH):	1428404
ISOKINETIC RATIO (%):	109.1144

POINTS	STACK T. deg F	DELTA P	QUAR D.	DELTA H	METER T. INLET	METER T. OUTLET	
1	197	0.12	0.34641	0.60	82	82	
2	196	0.13	0.36056	0.65	85	83	
3	197	0.15	0.3873	0.75	85	83	
4	198	0.18	0.42426	0.90	86	83	
5	197	0.29	0.53852	1.40	87	84	
6	198	0.16	0.4	0.80	88	84	
7	197	0.17	0.41231	0.84	88	84	
8	197	0.24	0.4899	1.20	87	84	
9	196	0.32	0.56569	1.60	87	85	
10	197	0.37	0.60828	1.80	88	85	
11	196	0.22	0.46904	1.10	88	85	
12	195	0.20	0.44721	1.00	88	85	
13	197	0.26	0.5099	1.30	88	85	
14	198	0.40	0.63246	2.00	89	85	
15	195	0.44	0.66332	2.20	90	86	
16	196	0.32	0.56569	1.60	90	86	
17	196	0.29	0.53852	1.40	89	86	
18	195	0.36	0.6	1.80	89	86	
19	196	0.54	0.73485	2.70	89	86	
20	196	0.50	0.70711	2.50	89	87	
21	197	0.34	0.5831	1.70	89	87	
22	198	0.33	0.57446	1.60	89	87	
23	198	0.43	0.65574	2.10	90	87	METER T.
24	196	0.59	0.76811	3.00	90	87	AVERAGE
25	195	0.66	0.8124	3.30	91	87	
	196.56		0.5518	1.5936	88.0400	85.1600	86.6000

EMISSION TEST SUMMARY

PLANT : Louisiana Pacific, Corrigan, TX
DATE : 2-Jun-95
PLACE : Dryer #1 Exhaust
RUN# : 1

TEST DURATION (MINUTES) :	62.5	LIQUID COLLECTED (mls) :	479.1
NOZZLE DIAMETER (INCH.) :	0.322	PARTICULATE WEIGHT (Front half mg) :	0
METER COEFFICIENT (Y) :	1.01279	PARTICULATE WEIGHT (Back half mg) :	0
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-9.8
GAS METER VOL.(Cu.Ft.) :	45.813	PERCENT CO2 :	4.5
BAROMETRIC PRESSURE :	29.9	PERCENT O2 :	16
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	0	STACK LENGTH(inchs) :	
STACK AREA (Sq.Ft.) :	0	STACK WIDTH(inchs) :	
NOZZLE AREA (feet):	0.000566	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 20.25

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	45.5705
VOLUME OF WATER VAPOR (STD. CU.FT.):	22.5512
FRACTIONAL MOISTURE CONTENT (%):	0.3310
DRY BASE:	79.5000
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.3600
MOLECULAR WT. OF STACK GAS (WET BASE):	25.5994
STACK PRESSURE (inch Hg):	29.1794
STACK GAS VELOCITY (ft/sec.):	37.2140
ACTUAL STACK GAS FLOW RATE (ACFM):	45215.0558
STANDARD STACK GAS FLOW RATE (SCFH):	1426201.85
ISOKINETIC RATIO (%):	109.9145

POINTS	STACK T. deg F	DELTA P	QUAR D.	DELTA H	METER T. INLET	METER T. OUTLET	
1	195	0.18	0.424264	0.89	75	74	
2	195	0.15	0.387298	0.75	76	74	
3	196	0.23	0.479583	1.10	76	74	
4	196	0.25	0.5	1.20	78	75	
5	195	0.26	0.509902	1.30	79	75	
6	194	0.21	0.458258	1.00	79	76	
7	195	0.18	0.424264	0.89	80	76	
8	195	0.20	0.447214	0.99	81	77	
9	196	0.28	0.52915	1.40	81	77	
10	195	0.36	0.6	1.80	81	77	
11	196	0.22	0.469042	1.10	81	78	
12	196	0.23	0.479583	1.10	81	78	
13	196	0.25	0.5	1.20	81	78	
14	195	0.37	0.608276	1.80	81	78	
15	195	0.44	0.663325	2.20	81	78	
16	194	0.23	0.479583	1.10	82	79	
17	195	0.25	0.5	1.20	82	79	
18	196	0.31	0.556776	1.50	82	79	
19	195	0.40	0.632456	1.90	82	79	
20	194	0.60	0.774597	2.90	82	79	
21	195	0.35	0.591608	1.70	82	80	
22	195	0.33	0.574456	1.60	82	80	
23	196	0.43	0.655744	2.10	83	80	METER T.
24	195	0.61	0.781025	3.00	83	80	AVERAGE
25	196	0.65	0.806226	3.20	83	80	
	195.24		0.5533	1.5568	80.5600	77.6000	79.0800

EMISSION TEST SUMMARY

PLANT : Louisiana Pacific, Corrigan, TX
DATE : 1-Jun-95
PLACE : Dryer #2 Exhaust
RUN# : 1

TEST DURATION (MINUTES) :	60	LIQUID COLLECTED (mls) :	184.1
NOZZLE DIAMETER (INCH.) :	0.2563	PARTICULATE WEIGHT (Front half mg) :	212.56
METER COEFFICIENT (Y) :	1.00418	PARTICULATE WEIGHT (Back half mg) :	42.78
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-9.1
GAS METER VOL.(Cu.Ft.) :	38.172	PERCENT CO2 :	4
BAROMETRIC PRESSURE :	29.8	PERCENT O2 :	18
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	0	STACK LENGTH(inchs) :	53.5
STACK AREA (Sq.Ft.) :	0	STACK WIDTH(inchs) :	53.5
NOZZLE AREA (feet):	0.000358	STACK AREA (Sq.Ft.) :	19.87674

ENTER THE STACK AREA SHOWN ABOVE: 19.877

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	37.5509
VOLUME OF WATER VAPOR (STD. CU.FT.):	8.6656
FRACTIONAL MOISTURE CONTENT (%):	0.1875
DRY BASE:	78.0000
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.3600
MOLECULAR WT. OF STACK GAS (WET BASE):	27.2300
STACK PRESSURE (inch Hg):	29.1309
STACK GAS VELOCITY (ft/sec.):	42.9871
ACTUAL STACK GAS FLOW RATE (ACFM):	51267.3263
STANDARD STACK GAS FLOW RATE (SCFH):	1907813.38

PARTICULATE

FRONT HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.0873
PARTICULATE CONCENTRATION (LBS/SCF):	1.25E-05
PARTICULATE EMISSION (LBS/HR):	23.8126

BACK HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.0176
PARTICULATE CONCENTRATION (LBS/SCF):	2.51E-06
PARTICULATE EMISSION (LBS/HR):	4.7925

ISOKINETIC RATIO (%): 109.2673

POINTS	STACK T. deg F	DELTA P	QUAR D.	DELTA H	METER T. INLET	METER T. OUTLET	
1	230	0.47	0.685565	2.00	70	70	
2	229	0.64	0.8	1.90	74	70	
3	224	0.61	0.781025	1.80	78	71	
4	202	0.60	0.774597	1.70	80	71	
5	210	0.31	0.556776	1.00	78	72	
6	230	0.41	0.640312	1.30	80	73	
7	226	0.49	0.7	1.50	82	73	
8	173	0.59	0.768115	2.00	84	74	
9	226	0.22	0.469042	0.70	80	75	
10	232	0.32	0.565685	0.80	83	75	
11	228	0.43	0.655744	1.30	85	76	
12	158	0.58	0.761577	1.70	87	76	
13	219	0.21	0.458258	0.70	81	77	
14	232	0.27	0.519615	0.90	84	77	
15	228	0.41	0.640312	1.40	87	78	
16	183	0.55	0.74162	1.50	88	78	
17	218	0.18	0.424264	0.80	85	79	
18	222	0.35	0.591608	0.80	87	79	
19	226	0.46	0.678233	1.30	79	78	
20	173	0.61	0.781025	1.70	83	78	
	213.45		0.6497	1.3400	81.7500	75.0000	78.3750

EMISSION TEST SUMMARY

PLANT : Louisiana Pacific, Corrigan, TX
DATE : 1-Jun-95
PLACE : Dryer #2 Exhaust
RUN# : 2

TEST DURATION (MINUTES) :	60	LIQUID COLLECTED (mls) :	213.1
NOZZLE DIAMETER (INCH.) :	0.2563	PARTICULATE WEIGHT (Front half mg) :	279.97
METER COEFFICIENT (Y) :	1.00418	PARTICULATE WEIGHT (Back half mg) :	54.19
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-13
GAS METER VOL.(Cu.Ft.) :	35.263	PERCENT CO2 :	3.5
BAROMETRIC PRESSURE :	29.8	PERCENT O2 :	17
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	0	STACK LENGTH(inches) :	53.5
STACK AREA (Sq.Ft.) :	0	STACK WIDTH(inches) :	53.5
NOZZLE AREA (feet):	0.000358	STACK AREA (Sq.Ft.) :	19.87674

ENTER THE STACK AREA SHOWN ABOVE: 19.877

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	34.0662
VOLUME OF WATER VAPOR (STD. CU.FT.):	10.0306
FRACTIONAL MOISTURE CONTENT (%):	0.2275
DRY BASE:	79.5000
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.2400
MOLECULAR WT. OF STACK GAS (WET BASE):	26.6833
STACK PRESSURE (inch Hg):	28.8441
STACK GAS VELOCITY (ft/sec.):	42.8835
ACTUAL STACK GAS FLOW RATE (ACFM):	51143.6602
STANDARD STACK GAS FLOW RATE (SCFH):	1792440.92

PARTICULATE

FRONT HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.1268
PARTICULATE CONCENTRATION (LBS/SCF):	1.81E-05
PARTICULATE EMISSION (LBS/HR):	32.4819

BACK HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.0245
PARTICULATE CONCENTRATION (LBS/SCF):	3.51E-06
PARTICULATE EMISSION (LBS/HR):	6.2871
ISOKINETIC RATIO (%):	105.5088

POINTS	STACK T. deg F	DELTA P	QUAR D.	DELTA H	METER T. INLET	METER T. OUTLET	
1	225	0.60	0.774597	1.60	81	81	
2	223	0.61	0.781025	1.60	83	81	
3	225	0.56	0.748331	1.50	87	82	
4	193	0.59	0.768115	1.60	89	82	
5	210	0.31	0.556776	0.80	87	83	
6	230	0.41	0.640312	1.10	90	83	
7	228	0.46	0.678233	1.20	92	84	
8	144	0.64	0.8	1.70	93	84	
9	211	0.21	0.458258	0.60	88	85	
10	229	0.29	0.538516	0.80	91	85	
11	225	0.42	0.648074	1.10	94	86	
12	198	0.54	0.734847	1.50	95	86	
13	217	0.20	0.447214	0.50	89	87	
14	231	0.27	0.519615	0.70	93	87	
15	228	0.42	0.648074	1.10	94	87	
16	161	0.52	0.72111	1.40	95	87	
17	200	0.22	0.469042	0.60	90	87	
18	231	0.27	0.519615	0.70	93	87	
19	228	0.41	0.640312	1.10	96	88	
20	227	0.46	0.678233	1.20	97	88	
	213.2		0.6385	1.1200	90.8500	85.0000	87.9250

EMISSION TEST SUMMARY

PLANT : Louisiana Pacific, Corrigan, TX
DATE : 1-Jun-95
PLACE : Dryer #2 Exhaust
RUN# : 3

TEST DURATION (MINUTES) :	60	LIQUID COLLECTED (mls) :	176.5
NOZZLE DIAMETER (INCH.) :	0.2563	PARTICULATE WEIGHT (Front half mg)	203
METER COEFFICIENT (Y) :	1.00418	PARTICULATE WEIGHT (Back half mg)	64.79
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-13.2
GAS METER VOL.(Cu.Ft.) :	35.02	PERCENT CO2 :	4.5
BAROMETRIC PRESSURE :	29.8	PERCENT O2 :	16.5
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	0	STACK LENGTH(inchs) :	
STACK AREA (Sq.Ft.) :	0	STACK WIDTH(inchs) :	
NOZZLE AREA (feet):	0.00036	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 19.877

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	33.7117
VOLUME OF WATER VAPOR (STD. CU.FT.):	8.3079
FRACTIONAL MOISTURE CONTENT (%):	0.1977
DRY BASE:	79.0000
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.3800
MOLECULAR WT. OF STACK GAS (WET BASE):	27.1300
STACK PRESSURE (inch Hg):	28.8294
STACK GAS VELOCITY (ft/sec.):	42.3585
ACTUAL STACK GAS FLOW RATE (ACFM):	50517.5821
STANDARD STACK GAS FLOW RATE (SCFH):	1828112.4

PARTICULATE

FRONT HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.0929
PARTICULATE CONCENTRATION (LBS/SCF):	1.33E-05
PARTICULATE EMISSION (LBS/HR):	24.2732

BACK HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.0297
PARTICULATE CONCENTRATION (LBS/SCF):	4.24E-06
PARTICULATE EMISSION (LBS/HR):	7.7471
ISOKINETIC RATIO (%):	102.3729

POINTS	STACK T. deg F	DELTA P	QUAR D.	DELTA H	METER T. INLET	METER T. OUTLET	
1	222	0.61	0.78102	1.60	87	86	
2	230	0.58	0.76158	1.60	89	86	
3	229	0.55	0.74162	1.50	91	86	
4	222	0.49	0.7	1.30	93	86	
5	228	0.41	0.64031	1.10	88	86	
6	230	0.46	0.67823	1.20	91	86	
7	220	0.39	0.6245	1.10	94	86	
8	193	0.52	0.72111	1.40	95	86	
9	221	0.20	0.44721	0.50	90	87	
10	233	0.31	0.55678	0.80	93	87	
11	227	0.40	0.63246	1.10	95	87	
12	195	0.61	0.78102	1.60	97	88	
13	222	0.19	0.43589	0.50	91	88	
14	233	0.25	0.5	0.60	93	88	
15	228	0.41	0.64031	1.10	95	88	
16	152	0.51	0.71414	1.40	97	88	
17	205	0.20	0.44721	0.50	90	88	
18	232	0.26	0.5099	0.70	93	88	
19	228	0.42	0.64807	1.10	95	88	
20	185	0.52	0.72111	1.40	96	88	
	216.75		0.6341	1.1050	92.6500	87.0500	89.8500

EMISSION TEST SUMMARY

PLANT : Louisiana Pacific, Corrigan, TX
DATE : 1-Jun-95
PLACE : Dryer #3 Exhaust
RUN# : 3

TEST DURATION (MINUTES) :	64	LIQUID COLLECTED (mls) :	154
NOZZLE DIAMETER (INCH.) :	0.191	PARTICULATE WEIGHT (Front half mg) :	220.6
METER COEFFICIENT (Y) :	0.98893	PARTICULATE WEIGHT (Back half mg) :	21.45
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-8.8
GAS METER VOL.(Cu.Ft.) :	39.594	PERCENT CO2 :	1.5
BAROMETRIC PRESSURE :	29.8	PERCENT O2 :	17
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	42	STACK LENGTH(inchs) :	
STACK AREA (Sq.Ft.) :	9.62113	STACK WIDTH(inchs) :	
NOZZLE AREA (feet):	0.0002	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 9.62113

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	36.7022
VOLUME OF WATER VAPOR (STD. CU.FT.):	7.2488
FRACTIONAL MOISTURE CONTENT (%):	0.1649
DRY BASE:	81.5000
MOLECULAR WT. OF STACK GAS (DRY BASE):	28.9200
MOLECULAR WT. OF STACK GAS (WET BASE):	27.1190
STACK PRESSURE (inch Hg):	29.1529
STACK GAS VELOCITY (ft/sec.):	66.5805
ACTUAL STACK GAS FLOW RATE (ACFM):	38434.7406
STANDARD STACK GAS FLOW RATE (SCFH):	1619328.95

PARTICULATE

FRONT HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.0927
PARTICULATE CONCENTRATION (LBS/SCF):	1.33E-05
PARTICULATE EMISSION (LBS/HR):	21.4614

BACK HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.0090
PARTICULATE CONCENTRATION (LBS/SCF):	1.29E-06
PARTICULATE EMISSION (LBS/HR):	2.0868
ISOKINETIC RATIO (%):	102.8105

POINTS	STACK T. deg F	DELTA P	QUAR D.	DELTA H	METER T. INLET	METER T. OUTLET	
1	159	1.00	1	1.09	98	98	
2	165	1.10	1.04881	1.20	100	98	
3	166	1.20	1.09545	1.31	104	98	
4	167	1.20	1.09545	1.31	105	98	
5	164	1.20	1.09545	1.31	107	98	
6	155	1.10	1.04881	1.20	107	99	
7	139	1.10	1.04881	1.20	108	99	
8	110	0.82	0.90554	0.90	107	100	
9	145	0.82	0.90554	0.90	100	100	
10	160	1.30	1.14018	1.42	105	100	
11	159	1.30	1.14018	1.42	102	100	
12	161	1.30	1.14018	1.42	109	101	
13	156	1.20	1.09545	1.31	109	101	
14	153	1.20	1.09545	1.31	109	101	
15	139	1.10	1.04881	1.20	108	101	
16	131	0.92	0.95917	1.01	108	102	
	151.8125		1.0540	1.2194	105.3750	99.6250	102.5000

EMISSION TEST SUMMARY

PLANT : Louisiana Pacific, Corrigan, TX
DATE : 1-Jun-95
PLACE : Dryer #3 Exhaust
RUN# : 2

TEST DURATION (MINUTES) :	64	LIQUID COLLECTED (mls) :	154.9
NOZZLE DIAMETER (INCH.) :	0.191	PARTICULATE WEIGHT (Front half mg) :	229.64
METER COEFFICIENT (Y) :	0.98893	PARTICULATE WEIGHT (Back half mg) :	26.03
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-9
GAS METER VOL.(Cu.Ft.) :	40.246	PERCENT CO2 :	2
BAROMETRIC PRESSURE :	29.8	PERCENT O2 :	17.5
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	42	STACK LENGTH(inches) :	
STACK AREA (Sq.Ft.) :	9.62113	STACK WIDTH(inches) :	
NOZZLE AREA (feet):	0.0002	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 9.62113

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	37.5479
VOLUME OF WATER VAPOR (STD. CU.FT.):	7.2911
FRACTIONAL MOISTURE CONTENT (%):	0.1626
DRY BASE:	80.5000
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.0200
MOLECULAR WT. OF STACK GAS (WET BASE):	27.2281
STACK PRESSURE (inch Hg):	29.1382
STACK GAS VELOCITY (ft/sec.):	67.3266
ACTUAL STACK GAS FLOW RATE (ACFM):	38865.4496
STANDARD STACK GAS FLOW RATE (SCFH):	1652510.63

PARTICULATE

FRONT HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.0944
PARTICULATE CONCENTRATION (LBS/SCF):	1.35E-05
PARTICULATE EMISSION (LBS/HR):	22.2851

BACK HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.0107
PARTICULATE CONCENTRATION (LBS/SCF):	1.53E-06
PARTICULATE EMISSION (LBS/HR):	2.5260
ISOKINETIC RATIO (%):	103.0676

POINTS	STACK T. deg F	DELTA P	QUAR D.	DELTA H	METER T. INLET	METER T. OUTLET	
1	154	1.00	1	1.09	92	92	
2	151	1.30	1.14018	1.42	95	92	
3	152	1.30	1.14018	1.42	99	92	
4	151	1.30	1.14018	1.42	100	93	
5	149	1.20	1.09545	1.31	102	94	
6	152	1.10	1.04881	1.20	103	95	
7	142	1.10	1.04881	1.20	103	95	
8	136	0.84	0.91652	0.92	104	96	
9	144	1.00	1	1.09	98	97	
10	149	1.20	1.09545	1.31	103	97	
11	146	1.30	1.14018	1.42	105	98	
12	150	1.20	1.09545	1.31	106	98	
13	155	1.20	1.09545	1.31	106	99	
14	149	1.20	1.09545	1.31	105	99	
15	148	1.30	1.14018	1.42	105	99	
16	134	0.90	0.94868	0.98	105	99	
	147.625		1.0713	1.2581	101.9375	95.9375	98.9375

EMISSION TEST SUMMARY

PLANT : Louisiana Pacific, Corrigan, TX
DATE : 1-Jun-95
PLACE : Dryer #3 Exhaust
RUN# : 1

TEST DURATION (MINUTES) :	64	LIQUID COLLECTED (mls) :	150.9
NOZZLE DIAMETER (INCH.) :	0.191	PARTICULATE WEIGHT (Front half mg) :	264.45
METER COEFFICIENT (Y) :	0.98893	PARTICULATE WEIGHT (Back half mg) :	13.3
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-8.7
GAS METER VOL.(Cu.Ft.) :	39.854	PERCENT CO2 :	2
BAROMETRIC PRESSURE :	29.8	PERCENT O2 :	18
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	42	STACK LENGTH(inchs) :	
STACK AREA (Sq.Ft) :	9.62113	STACK WIDTH(inchs) :	
NOZZLE AREA (feet):	0.0002	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 9.62113

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	37.7505
VOLUME OF WATER VAPOR (STD. CU.FT.):	7.1029
FRACTIONAL MOISTURE CONTENT (%):	0.1584
DRY BASE:	80.0000
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.0400
MOLECULAR WT. OF STACK GAS (WET BASE):	27.2917
STACK PRESSURE (inch Hg):	29.1603
STACK GAS VELOCITY (ft/sec.):	67.4984
ACTUAL STACK GAS FLOW RATE (ACFM):	38964.6445
STANDARD STACK GAS FLOW RATE (SCFH):	1672934.94

PARTICULATE

FRONT HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.1081
PARTICULATE CONCENTRATION (LBS/SCF):	1.54E-05
PARTICULATE EMISSION (LBS/HR):	25.8410

BACK HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.0054
PARTICULATE CONCENTRATION (LBS/SCF):	7.77E-07
PARTICULATE EMISSION (LBS/HR):	1.2996
ISOKINETIC RATIO (%):	102.3584

POINTS	STACK T. deg F	DELTA P	QUAR D.	DELTA H	METER T. INLET	METER T. OUTLET	
1	157	1.10	1.04881	1.17	86	82	
2	154	1.30	1.14018	1.38	87	83	
3	135	1.30	1.14018	1.38	90	83	
4	154	1.40	1.18322	1.48	92	84	
5	158	1.30	1.14018	1.38	95	85	
6	149	1.20	1.09545	1.27	95	86	
7	142	1.00	1	1.06	96	87	
8	148	0.89	0.9434	0.94	96	87	
9	146	0.85	0.92195	0.90	91	86	
10	147	1.30	1.14018	1.38	94	88	
11	146	1.40	1.18322	1.48	97	89	
12	148	1.40	1.18322	1.48	92	90	
13	143	1.30	1.14018	1.38	99	90	
14	146	1.20	1.09545	1.27	99	91	
15	129	0.99	0.99499	1.05	100	91	
16	122	0.80	0.89443	0.85	94	91	
	145.25		1.0778	1.2406	93.9375	87.0625	90.5000

EMISSION TEST SUMMARY

PLANT : Louisiana Pacific, Corrigan, TX
DATE : 2-Jun-95
PLACE : Dryer #3 Exhaust
RUN# : 1

TEST DURATION (MINUTES) :	60	LIQUID COLLECTED (mls) :	240.6
NOZZLE DIAMETER (INCH.) :	0.2386	PARTICULATE WEIGHT (Front half mg)	0
METER COEFFICIENT (Y) :	0.98893	PARTICULATE WEIGHT (Back half mg) :	0
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-8.6
GAS METER VOL.(Cu.Ft.) :	61.079	PERCENT CO2 :	1.5
BAROMETRIC PRESSURE :	29.9	PERCENT O2 :	19.5
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	42	STACK LENGTH(inchs) :	
STACK AREA (Sq.Ft.) :	9.621128	STACK WIDTH(inchs) :	
NOZZLE AREA (feet):	0.000311	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 9.621128

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	58.0971
VOLUME OF WATER VAPOR (STD. CU.FT.):	11.3250
FRACTIONAL MOISTURE CONTENT (%):	0.1631
DRY BASE:	79.0000
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.0200
MOLECULAR WT. OF STACK GAS (WET BASE):	27.2223
STACK PRESSURE (inch Hg):	29.2676
STACK GAS VELOCITY (ft/sec.):	74.2814
ACTUAL STACK GAS FLOW RATE (ACFM):	42880.2546
STANDARD STACK GAS FLOW RATE (SCFH):	1709370.18
ISOKINETIC RATIO (%):	105.3788

POINTS	STACK T. deg F	DELTA P	QUAR D.	DELTA H	METER T. INLET	METER T. OUTLET	
1	186	1.40	1.183216	2.92	88	88	
2	195	1.40	1.183216	2.92	90	87	
3	196	1.40	1.183216	2.92	92	88	
4	194	1.40	1.183216	2.92	94	88	
5	195	1.30	1.140175	2.71	94	89	
6	196	1.30	1.140175	2.71	95	89	
7	196	1.35	1.161895	2.81	95	90	
8	178	0.98	0.989949	2.00	96	90	
9	191	1.40	1.183216	2.92	98	90	
10	192	1.40	1.183216	2.92	96	90	
11	191	1.40	1.183216	2.92	97	91	
12	194	1.40	1.183216	2.92	92	91	
13	197	1.40	1.183216	2.92	92	91	
14	197	1.30	1.140175	2.71	92	91	
15	191	1.30	1.140175	2.71	99	92	
16	160	0.91	0.953939	1.89	99	92	
	190.5625		1.1447	2.7388	94.3125	89.8125	92.0625

EMISSION TEST SUMMARY

PLANT : Louisiana Pacific, Corrigan, TX
DATE : 2-Jun-95
PLACE : Dryer #3 Exhaust
RUN# : 2

TEST DURATION (MINUTES) :	60	LIQUID COLLECTED (mls) :	255.5
NOZZLE DIAMETER (INCH.) :	0.2386	PARTICULATE WEIGHT (Front half mg)	0
METER COEFFICIENT (Y) :	0.98893	PARTICULATE WEIGHT (Back half mg) :	0
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-8.5
GAS METER VOL.(Cu.Ft.) :	59.819	PERCENT CO2 :	2.5
BAROMETRIC PRESSURE :	29.9	PERCENT O2 :	18
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	42	STACK LENGTH(inches) :	
STACK AREA (Sq.Ft.) :	9.621128	STACK WIDTH(inches) :	
NOZZLE AREA (feet):	0.000311	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 9.621128

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	56.2410
VOLUME OF WATER VAPOR (STD. CU.FT.):	12.0264
FRACTIONAL MOISTURE CONTENT (%):	0.1762
DRY BASE:	79.5000
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.1200
MOLECULAR WT. OF STACK GAS (WET BASE):	27.1610
STACK PRESSURE (inch Hg):	29.2750
STACK GAS VELOCITY (ft/sec.):	72.7730
ACTUAL STACK GAS FLOW RATE (ACFM):	42009.5163
STANDARD STACK GAS FLOW RATE (SCFH):	1653122.55
ISOKINETIC RATIO (%):	105.4835

POINTS	STACK T. deg F	DELTA P	QUAR D.	DELTA H	METER T. INLET	METER T. OUTLET	
1	192	1.30	1.140175	2.71	91	91	
2	191	1.35	1.161895	2.81	97	92	
3	194	1.30	1.140175	2.71	100	92	
4	194	1.30	1.140175	2.71	102	93	
5	195	1.30	1.140175	2.71	102	93	
6	195	1.40	1.183216	2.92	103	94	
7	189	1.20	1.095445	2.50	103	94	
8	159	0.85	0.921954	1.77	104	95	
9	192	1.40	1.183216	2.92	98	95	
10	194	1.40	1.183216	2.92	102	95	
11	194	1.30	1.140175	2.71	104	96	
12	196	1.30	1.140175	2.71	105	96	
13	194	1.40	1.183216	2.92	105	96	
14	192	1.30	1.140175	2.71	106	97	
15	187	1.20	1.095445	2.50	106	97	
16	165	0.92	0.959166	1.92	107	97	
	188.9375		1.1217	2.6344	102.1875	94.5625	98.3750

EMISSION TEST SUMMARY

PLANT : Louisiana Pacific, Corrigan, TX
DATE : 2-Jun-95
PLACE : Dryer #3 Exhaust
RUN# : 3

TEST DURATION (MINUTES) :	60	LIQUID COLLECTED (mls) :	237.6
NOZZLE DIAMETER (INCH.) :	0.2386	PARTICULATE WEIGHT (Front half mg) :	0
METER COEFFICIENT (Y) :	0.98893	PARTICULATE WEIGHT (Back half mg) :	0
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-8.6
GAS METER VOL.(Cu.Ft.) :	59.237	PERCENT CO2 :	2.5
BAROMETRIC PRESSURE :	29.9	PERCENT O2 :	18
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	42	STACK LENGTH(inchs) :	
STACK AREA (Sq.Ft.) :	9.62113	STACK WIDTH(inchs) :	
NOZZLE AREA (feet):	0.00031	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 9.62113

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	55.3588
VOLUME OF WATER VAPOR (STD. CU.FT.):	11.1838
FRACTIONAL MOISTURE CONTENT (%):	0.1681
DRY BASE:	79.5000
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.1200
MOLECULAR WT. OF STACK GAS (WET BASE):	27.2511
STACK PRESSURE (inch Hg):	29.2676
STACK GAS VELOCITY (ft/sec.):	71.9892
ACTUAL STACK GAS FLOW RATE (ACFM):	41557.0629
STANDARD STACK GAS FLOW RATE (SCFH):	1649385.01

PARTICULATE

FRONT HALF

PARTICULATE CONCENTRATION (GR./SCF):	0.0000
PARTICULATE CONCENTRATION (LBS/SCF):	0.00E+00
PARTICULATE EMISSION (LBS/HR):	0.0000

BACK HALF

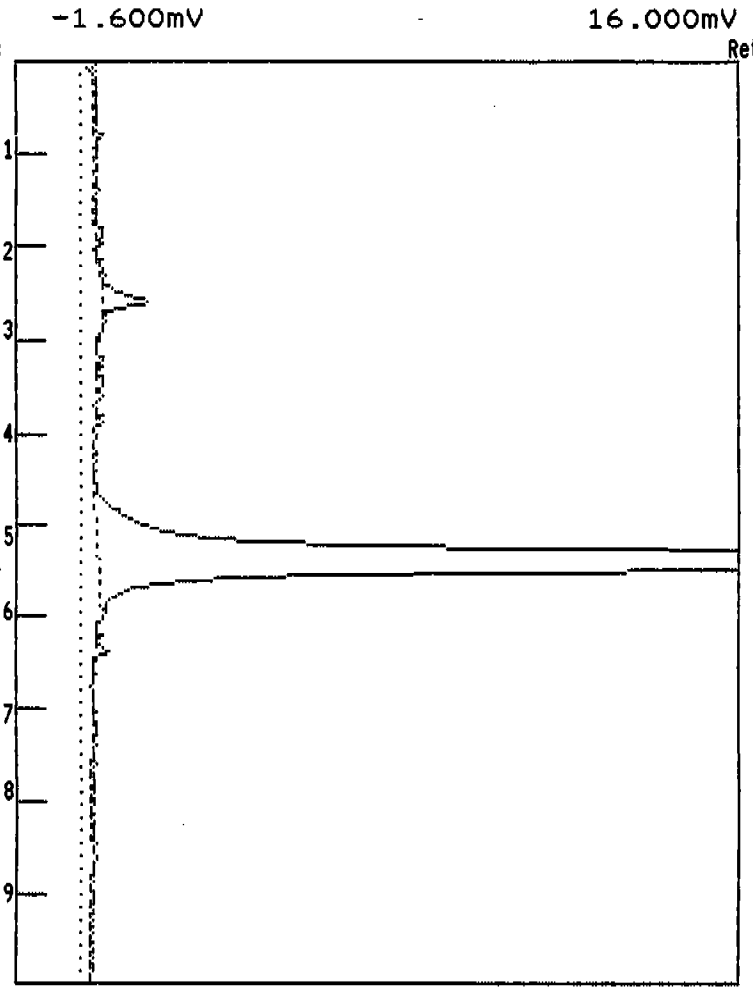
PARTICULATE CONCENTRATION (GR./SCF):	0.0000
PARTICULATE CONCENTRATION (LBS/SCF):	0.00E+00
PARTICULATE EMISSION (LBS/HR):	0.0000
ISOKINETIC RATIO (%):	104.0640

POINTS	STACK T. deg F	DELTA P	QUAR D.	DELTA H	METER T. INLET	METER T. OUTLET	
1	192	1.40	1.18322	2.92	96	96	
2	195	1.30	1.14018	2.71	100	96	
3	193	1.35	1.1619	2.81	101	96	
4	194	1.40	1.18322	2.92	104	97	
5	192	1.20	1.09545	2.50	105	97	
6	191	1.20	1.09545	2.50	105	98	
7	191	1.10	1.04881	2.29	106	98	
8	169	0.92	0.95917	1.92	107	99	
9	191	1.50	1.22474	3.13	109	99	
10	196	1.40	1.18322	2.92	105	99	
11	194	1.40	1.18322	2.92	106	99	
12	192	1.30	1.14018	2.71	107	100	
13	189	1.20	1.09545	2.50	107	100	
14	192	1.30	1.14018	2.71	107	100	
15	182	0.96	0.9798	2.00	107	100	
16	180	0.92	0.95917	1.92	107	101	
	189.5625		1.1108	2.5863	104.9375	98.4375	101.6875

APPENDIX B

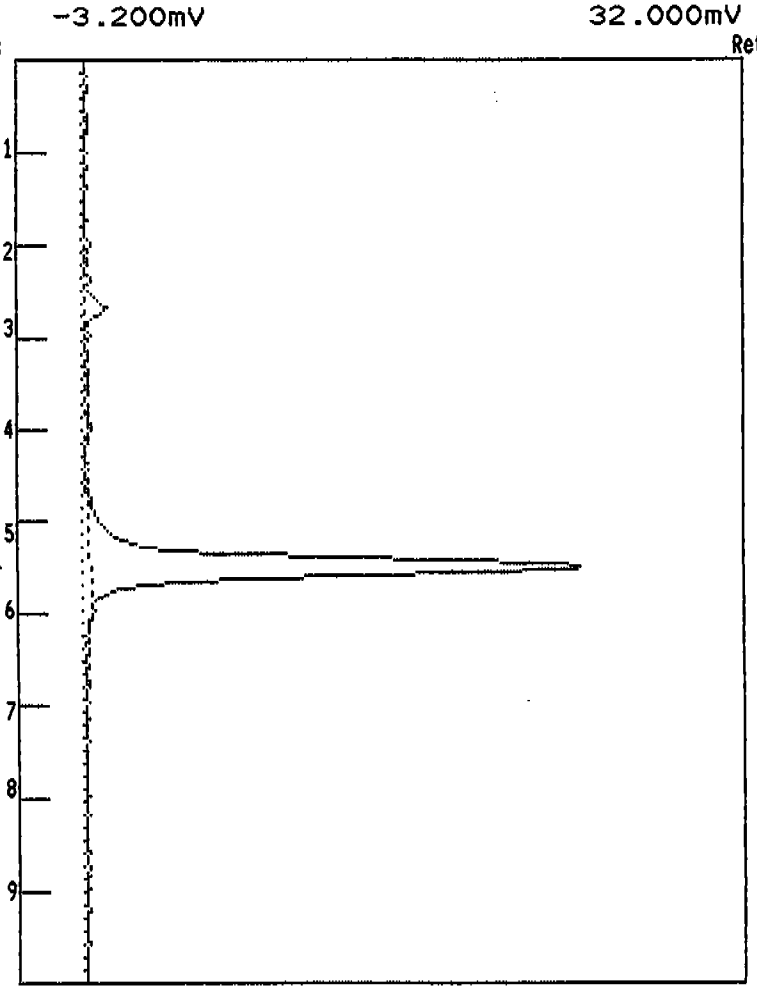
Summary of Formaldehyde Analysis						
Plant:	Louisiana Pacific, Corrigan, TX					
			Formaldehyde, mg			
Run#/Location		1		2		3
Field Spike, 1 mg		1.143 mg				
Dryer #1		16.685		18.837		4.248
Dryer #2		15.444		8.272		3.834
Dryer #3		9.94		10.985		7.255

Description : Channel 1
Conditions : 150 ng/ml Formaldehyde
Date : 06/03/1995
Time : 07:22:45



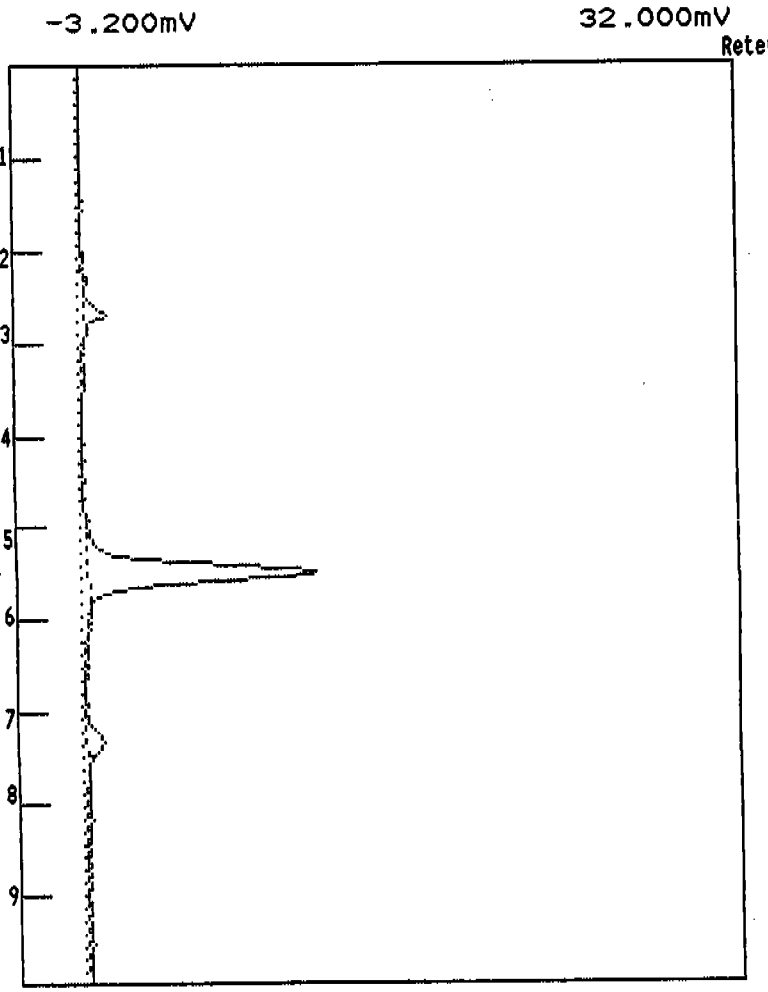
Component	External	Units	Retention	Height	Area
(unknown)	N/A		2.575	1.100	10.50
Formaldehyde	150.00	ng/ml	5.366	33.286	495.70

Description : Channel 1
Conditions : 100 ng/ml Formaldehyde
Date : 06/03/1995
Time : 07:41:47



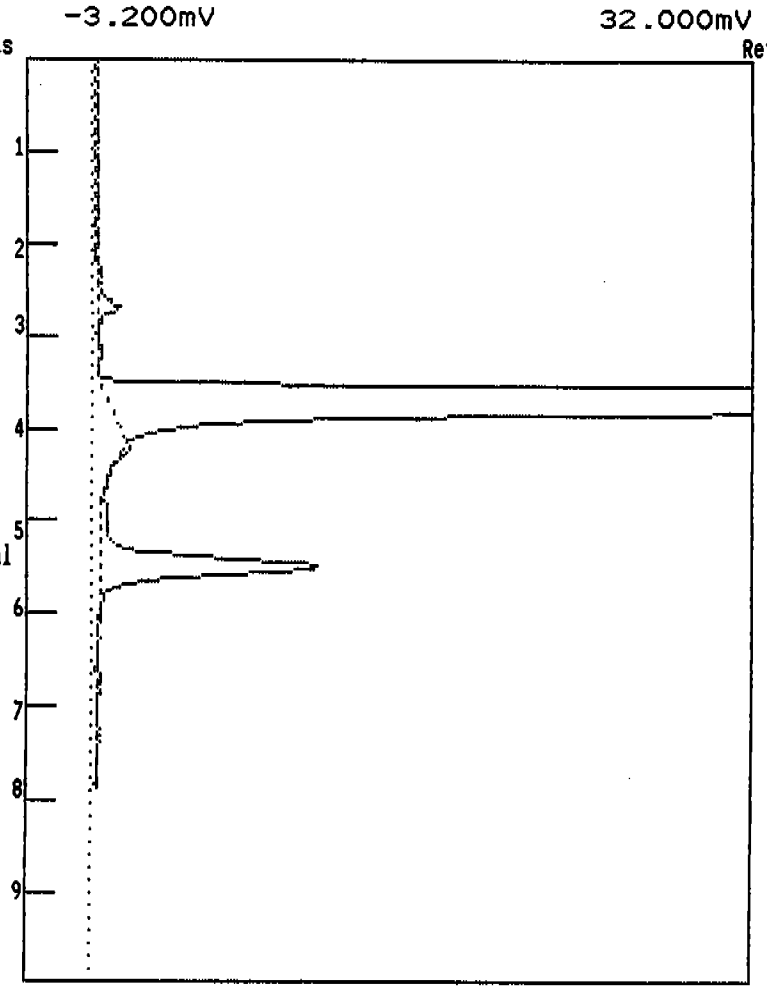
Component	External	Units	Retention	Height	Area
(unknown)	N/A		2.675	1.000	11.30
Formaldehyde	100.00	ng/ml	5.475	24.014	361.32

Description : Channel 1
Conditions : 50 ng/ml formaldehyde
Date : 06/03/1995
Time : 07:55:39



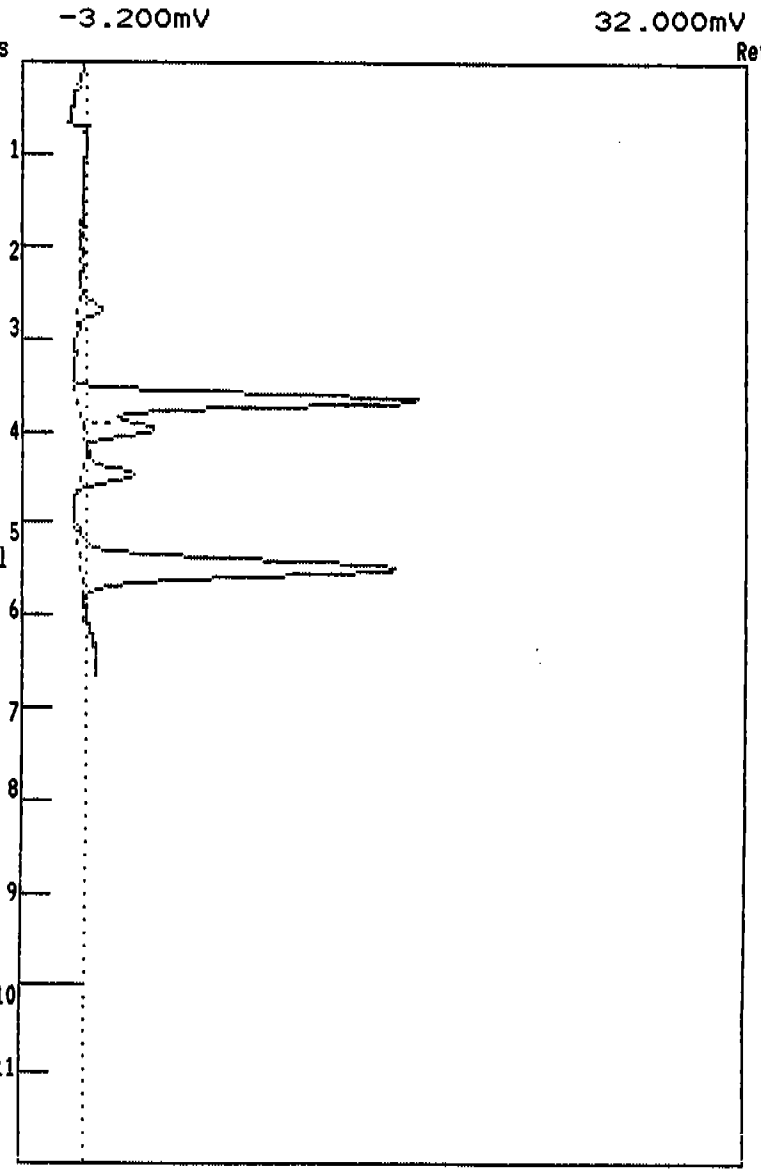
Component	External	Units	Retention	Height	Area
Formaldehyde	50.00	ng/ml	5.483	11.046	156.82
(unknown)	N/A		7.325	0.899	13.35

Description : Channel 1
Conditions : Field Spike
: Vol 250 mls
: Dil 1/100
Date : 06/03/1995
Time : 08:18:28



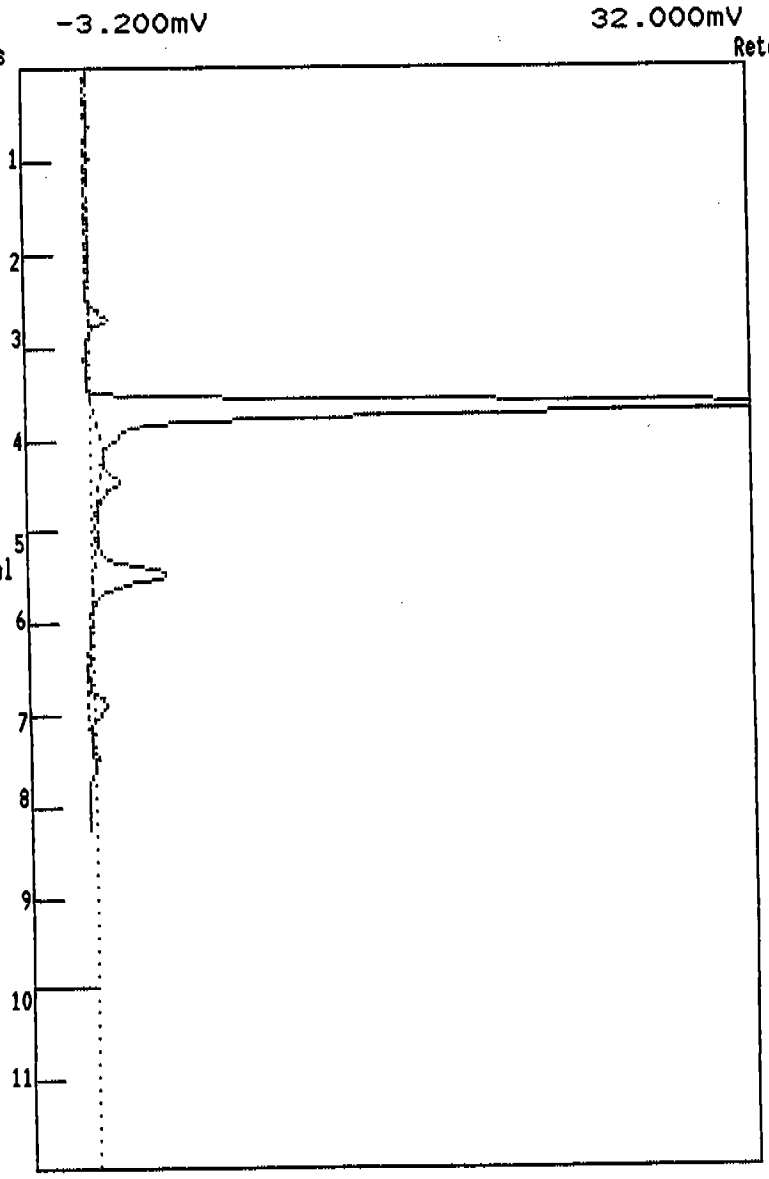
Component	External	Units	Retention	Height	Area
(unknown)	N/A		2.675	1.140	12.07
(unknown)	N/A		3.658	322.217	3107.55
Formaldehyde	46.73	ng/ml	5.475	10.500	146.55

Description : Channel 1
Conditions : R2 Dryer 1
: Vol 300 mls
: Dil 1/1000
Date : 06/03/1995
Time : 08:52:23



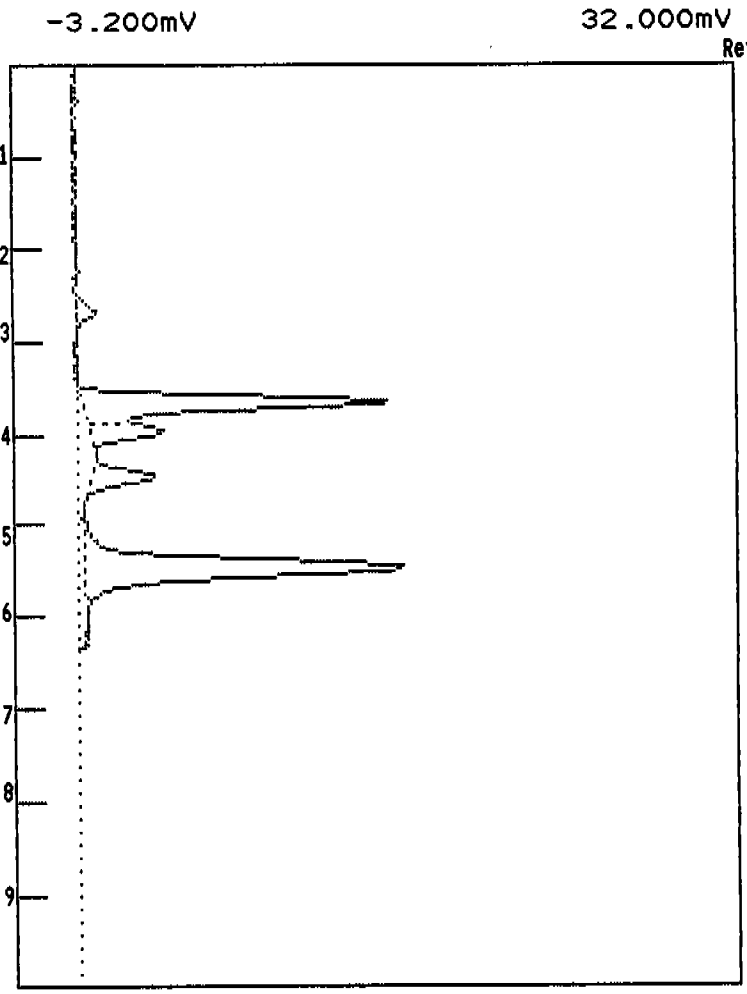
Component	External	Units	Retention	Height	Area
(unknown)	N/A		2.683	1.204	13.88
(unknown)	N/A		3.658	16.922	170.63
(unknown)	N/A		3.966	3.624	38.02
(unknown)	N/A		4.458	2.514	26.30
Formaldehyde	62.79	ng/ml	5.475	15.433	209.12

Description : Channel 1
Conditions : R3 Dryer 1
: Vol 250 mls
: Dil 1/1000
Date : 06/03/1995
Time : 09:05:29



Component	External	Units	Retention	Height	Area
(unknown)	N/A		3.641	35.234	371.70
(unknown)	N/A		4.425	0.987	12.18
Formaldehyde	16.99	ng/ml	5.458	3.541	53.30
(unknown)	N/A		6.850	0.854	13.10

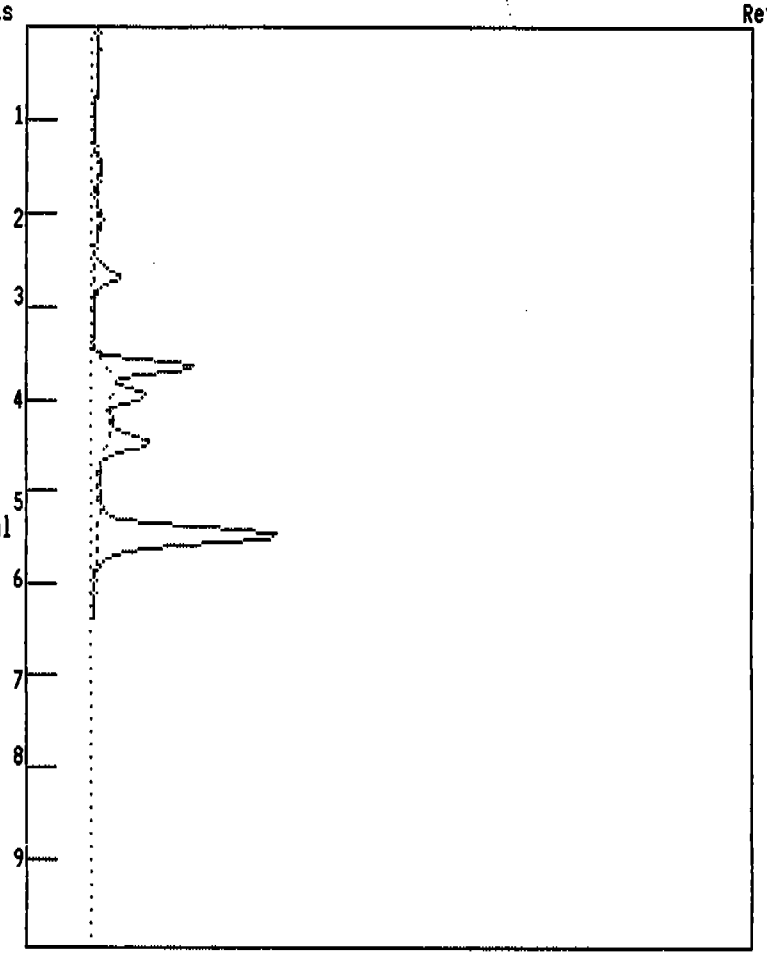
Description : Channel 1
Conditions : R1 Dryer 1
: Vol 250 mls
: Dil 1/1000
Date : 06/03/1995
Time : 09:16:31



Component	External	Units	Retention	Height	Area
(unknown)	N/A		2.691	1.052	10.62
(unknown)	N/A		3.641	14.832	152.64
(unknown)	N/A		3.958	3.524	38.28
(unknown)	N/A		4.450	2.983	32.45
Formaldehyde	66.74	ng/ml	5.458	15.594	225.30

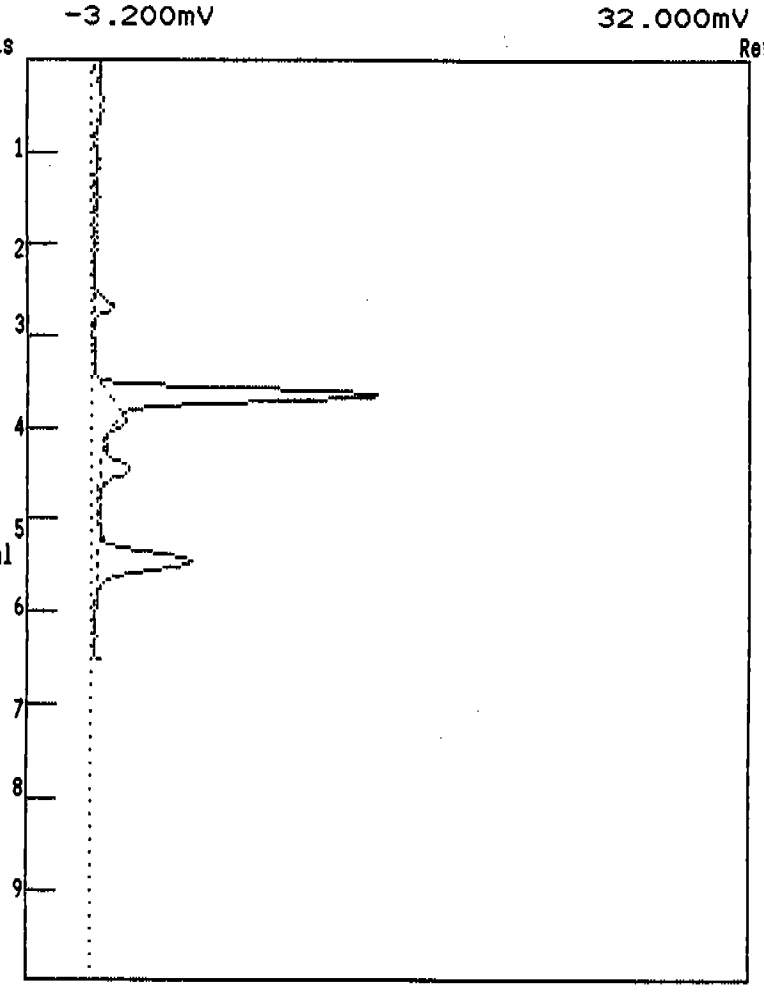
Description : Channel 1
Conditions : R1 Dryer 2
: Vol 400 mls
: Dil 1/1000
Date : 06/03/1995
Time : 09:35:10

-3.200mV 32.000mV



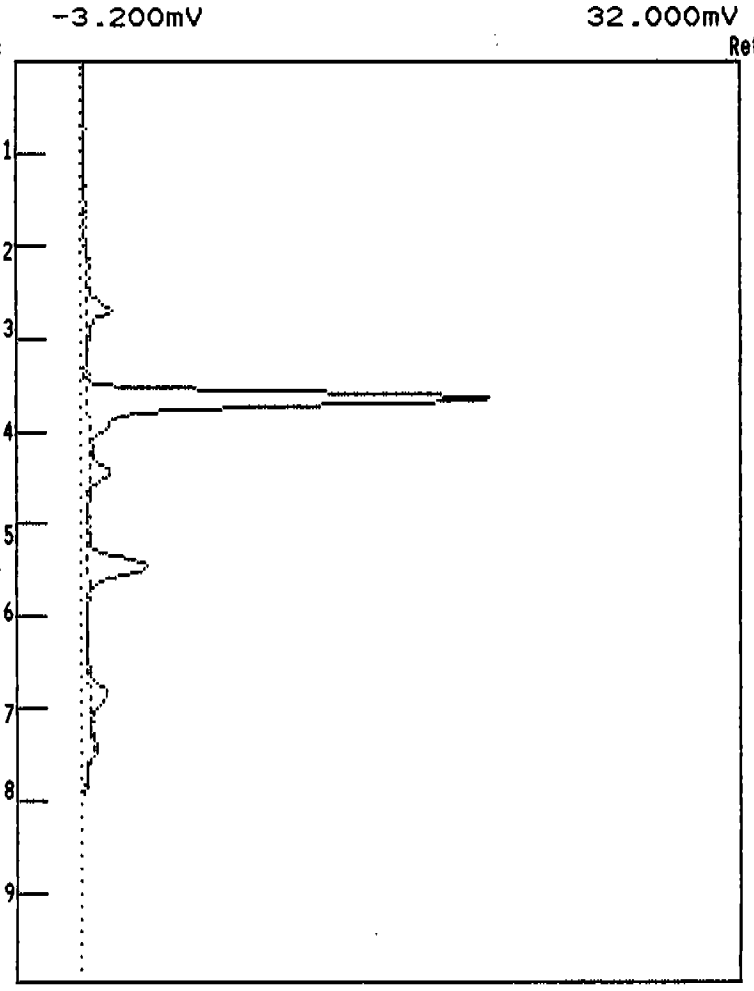
Component	External	Units	Retention	Height	Area
(unknown)	N/A		2.675	1.239	13.70
(unknown)	N/A		3.641	4.304	38.60
(unknown)	N/A		3.950	1.569	15.65
(unknown)	N/A		4.450	2.111	22.85
Formaldehyde	38.61	ng/ml	5.458	8.680	121.10

Description : Channel 1
Conditions : R2 Dryer 2
: Vol 400 mls
: Dil 1/1000
Date : 06/03/1995
Time : 09:44:34



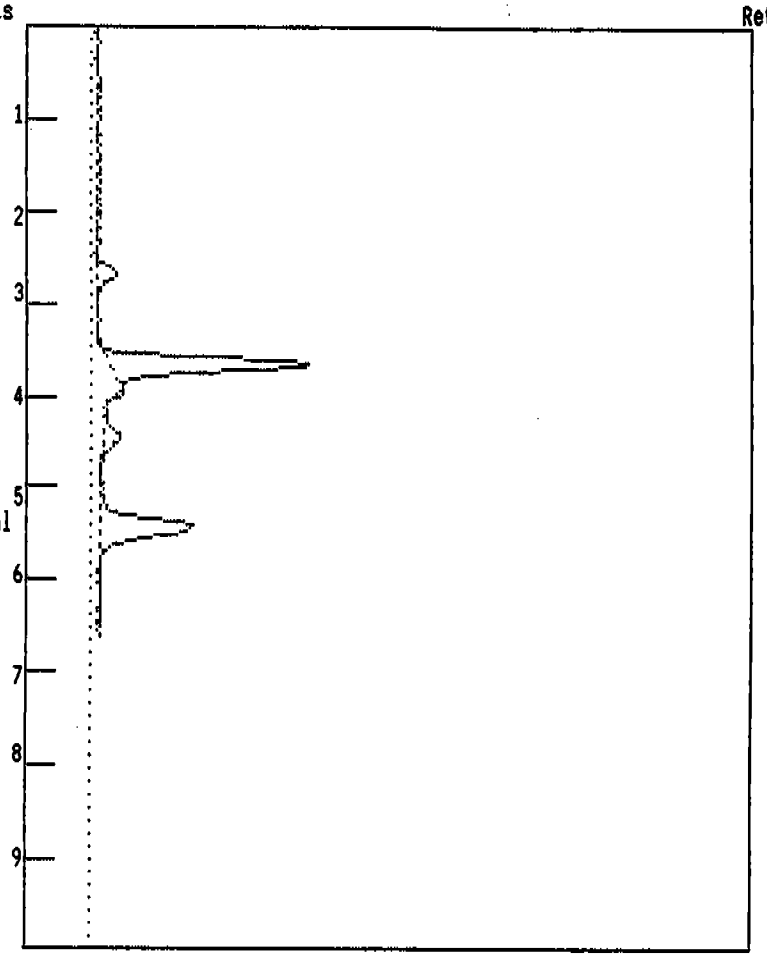
Component	External	Units	Retention	Height	Area
(unknown)	N/A		2.683	1.067	10.30
(unknown)	N/A		3.641	13.256	126.20
(unknown)	N/A		4.475	1.555	19.30
Formaldehyde	20.68	ng/ml	5.450	4.587	64.85

Description : Channel 1
Conditions : R3 Dryer 2
: Vol 300 mls
: Dil 1/1000
Date : 06/03/1995
Time : 09:54:30



Component	External	Units	Retention	Height	Area
(unknown)	N/A		2.708	1.200	13.85
(unknown)	N/A		3.641	19.517	213.32
(unknown)	N/A		4.450	1.074	11.75
Formaldehyde	12.78	ng/ml	5.441	2.848	40.08
(unknown)	N/A		6.841	0.900	13.15

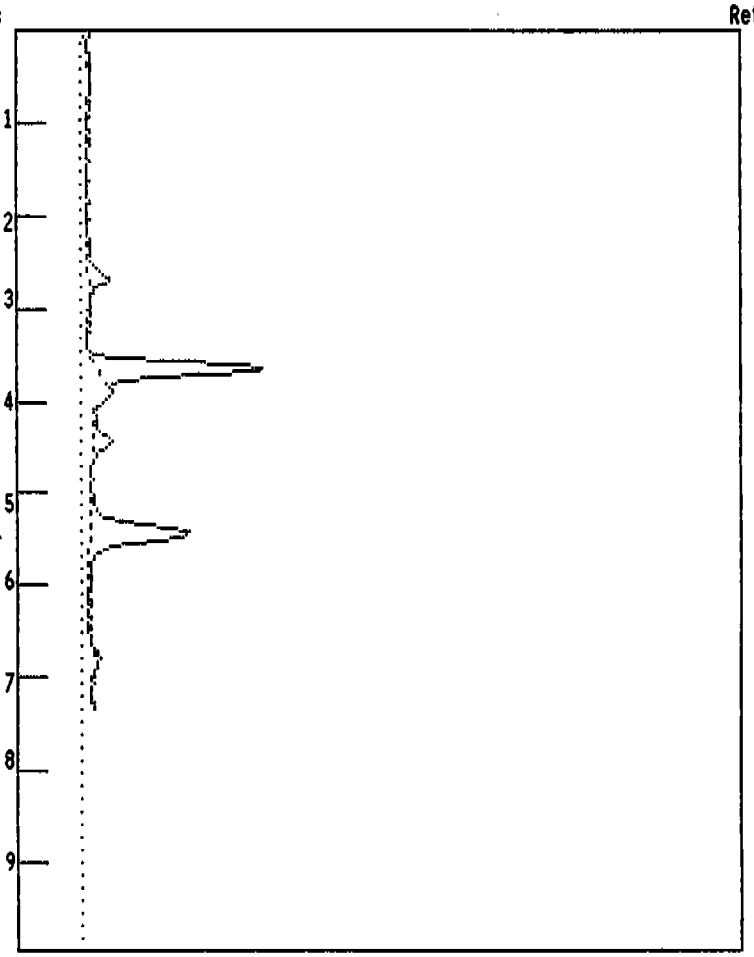
Description : Channel 1
Conditions : R1 Dryer 3
: Vol 500 mls
: Dil 1/1000
Date : 06/03/1995
Time : 10:05:27



Component	External	Units	Retention	Height	Area
(unknown)	N/A		2.683	1.057	12.03
(unknown)	N/A		3.641	9.669	97.40
Formaldehyde	19.88	ng/ml	5.416	4.448	62.35

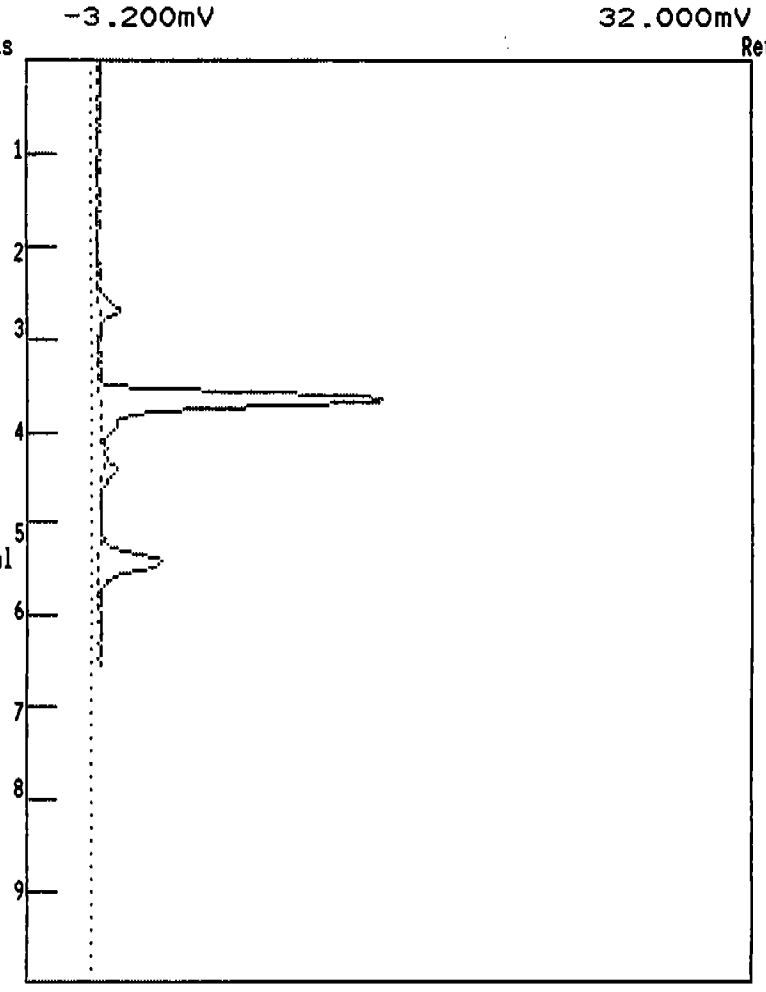
Description : Channel 1
Conditions : R2 Dryer 3
: Vol 500 mls
: Dil 1/1000
Date : 06/03/1995
Time : 10:14:47

-3.200mV 32.000mV



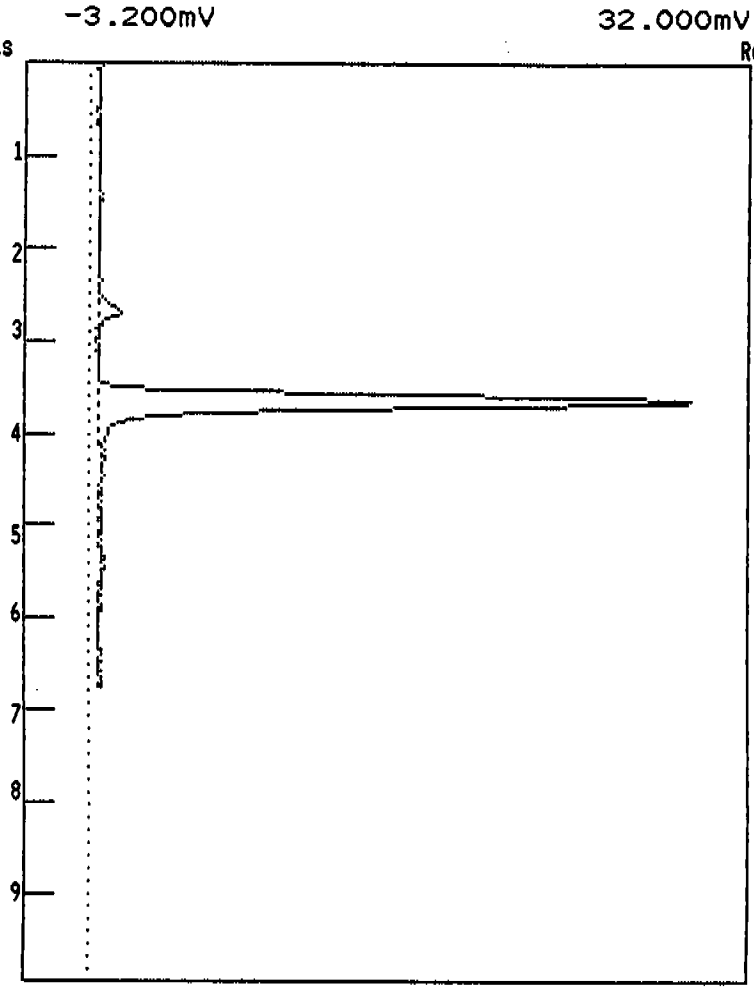
Component	External	Units	Retention	Height	Area
(unknown)	N/A		3.633	8.038	77.65
Formaldehyde	21.97	ng/ml	5.416	4.789	68.90

Description : Channel 1
Conditions : R3 Dryer 3
: Vol 500 mls
: Dil 1/1000
Date : 06/03/1995
Time : 10:24:39



Component	External	Units	Retention	Height	Area
(unknown)	N/A		2.683	1.006	10.20
(unknown)	N/A		3.633	13.827	153.35
Formaldehyde	14.51	ng/ml	5.400	3.042	45.50

Description : Channel 1
Conditions : Field Blank
: Vol 250 mls
: Dil 1/1000
Date : 06/03/1995
Time : 10:34:45



Component	External	Units	Retention	Height	Area
(unknown)	N/A		2.683	1.063	12.30
(unknown)	N/A		3.633	29.375	299.60

AccuStandard Inc.
25 Science Park
New Haven, CT 06511

CERTIFICATE OF PRODUCT DATA

PRODUCT: M-8315-02
DESCRIPTION: Aldehyde Solution
LOT #: 074-280
SOLVENT: water
EXPIRATION: On-going Stability Program

Component	CAS #	Purity % (GC/FID)	Gravimetric Concentration[1] (µg/mL)	Analyte Concentration[2] (µg/mL)
Formaldehyde	50-00-0	35.0	2868 *	1004

* Weight compensated to 100% purity

1. * All weights are traceable through National Bureau of Standards Test No. 731/243669 's'
2. Analyte Conc. = Purity x Gravimetric Conc.

Certified by: Certified by:

This product was manufactured to meet the quality system requirements of ISO 9001

PARTICULATE ANALYTICAL DATA FORM

Company: LP Corigan
Date: 6/1/95
Location: Dryer & PW

	Run 1	Run 2	Run 3
Density (Pa)	.7854	.7854	.7854
Blank Concentration (Ca)			
Rinse Volume (Vaw)	150	180	135
Residue in Rinse (Wa) = Ca*Vaw*Pa	0.45 mg	0.54 mg	0.70 mg
Date of Weighing	6/3	6/3	6/3
Gross Weight	111.3787	115.3917	106.8730
Date of Weighing	6/3	6/3	6/3
Gross Weight	111.3787	115.3917	106.8732
Average Gross Weight	111.3787	115.3917	106.8731
Less Blank Residue (Wa) (add Blank)	.00045	.00054	.00070
Tare Weight	111.3110	115.2935	106.797
Weight of Particulate in Rinse	.06815	0.09766	0.0747
Date of Weighing	6/3	6/3	6/3
Gross Filter Weight	.6158	.7035	.6576
Date of Weighing	6/3	6/3	6/3
Gross Filter Weight	.6158	.7037	.6578
Average Gross Weight	.6158	.7036	.6577
Filter Tare Weight	.4786	.4985	.4802
Weight of Particulate on Filter	.1372	.2051	.1775
Total Weight of Particulate	0.20535	0.30276	0.2522

ACETONE BLANK ANALYTICAL DATA FORM

Blank Volume	100
Date of Weighing	6/3
Gross Weight	106.2804
Date of Weighing	6/3
Gross Weight	106.2804
Average Gross Weight	106.2804
Tare Weight	106.2801
Weight of Blank (Ma)	.0003
Ca= ma/(Va*Pa) = mg/g	.0038

Note: In no case should a blank residue greater than 0.01 mg/g or 0.001% of the blank weight be subtracted from the sample weight.

PARTICULATE ANALYTICAL DATA FORM

Company: LP Corigan
Date: 6/13/95
Location: Dryer 1 Imps 100ml aliquots

	Run 1	Run 2	Run 3
Density (Pa)	1.0	1.0	1.0
Blank Concentration (~~Ca~~) Vols	345	396	348
Rinse Volume (Vaw) Vola	100	100	100
Residue in Rinse (Wa) = Ca*Vaw*Pa			
Date of Weighing	6/3	6/3	6/3
Gross Weight	105.7737	97.6128	112.9203
Date of Weighing	6/3	6/3	6/3
Gross Weight	105.7737	97.6128	112.9205
Average Gross Weight	105.7737	97.6128	112.9204
Less Blank Residue (Wa)			
Tare Weight	105.7662	97.6049	112.9106
Weight of Particulate in Rinse	0.0085	0.0079	0.0098
Date of Weighing			
Gross Filter Weight			
Date of Weighing			
Gross Filter Weight			
Average Gross Weight			
Filter Tare Weight			
Weight of Particulate on Filter			
Total Weight of Particulate	x3.45 29.35	x3.96 31.28	x348 34.10

ACETONE BLANK ANALYTICAL DATA FORM

Blank Volume	
Date of Weighing	
Gross Weight	
Date of Weighing	
Gross Weight	
Average Gross Weight	
Tare Weight	
Weight of Blank (Ma)	
Ca= ma/(Va*Pa) = mg/g	

Note: In no case should a blank residue greater than 0.01 mg/g or 0.001% of the blank weight be subtracted from the sample weight.

PARTICULATE ANALYTICAL DATA FORM

Company: LP Corigan
Date: 6/1/95
Location: Dryer Z Imps

	Run 1	Run 2	Run 3
Density (Pa)	1.0	1.0	1.0
Blank Concentration (Ca) Vols	441	409	388
Rinse Volume (Vaw) Vols	100	100	100
Residue in Rinse (Wa) = Ca*Vaw*Pa			
Date of Weighing	6/3	6/3	6/3
Gross Weight	96.8868	102.4907	106.1128
Date of Weighing	6/3	6/3	6/3
Gross Weight	96.8868	102.4908	106.1128
Average Gross Weight	96.8868	102.49075	106.1128
Less Blank Residue (Wa)			
Tare Weight	96.8770	102.4775	106.0961
Weight of Particulate in Rinse	.0097	0.01325	0.0167
Date of Weighing			
Gross Filter Weight			
Date of Weighing			
Gross Filter Weight			
Average Gross Weight			
Filter Tare Weight			
Weight of Particulate on Filter			
Total Weight of Particulate x 4.41	42.78	54.19	64.79

ACETONE BLANK ANALYTICAL DATA FORM

Blank Volume	
Date of Weighing	
Gross Weight	
Date of Weighing	
Gross Weight	
Average Gross Weight	
Tare Weight	
Weight of Blank (Ma)	
Ca= ma/(Va*Pa) = mg/g	

Note: In no case should a blank residue greater than 0.01 mg/g or 0.001% of the blank weight be subtracted from the sample weight.

PARTICULATE ANALYTICAL DATA FORM

Company: LP Corrigan
Date:
Location: Dryer 2 PW

	Run 1	Run 2	Run 3
Density (Pa)	.7854	.7854	.7854
Blank Concentration (Ca)	.01 mg/ml	.01	
Rinse Volume (Vaw)	175	230	195
Residue in Rinse (Wa) = Ca*Vaw*Pa	1.37 mg	1.8 mg	1.45
Date of Weighing	6/3	6/3	6/3
Gross Weight	99.5697	106.5340	112.6998
Date of Weighing	6/3	6/3	6/3
Gross Weight	99.5692	106.5339	112.6998
Average Gross Weight	99.5692	106.53395	112.6998
Less Blank Residue (Wa) Add Blank	0.00014	0.00048	0.00015
Tare Weight	99.5197	106.4807	112.6697
Weight of Particulate in Rinse	0.04936	0.05307	0.03095
Date of Weighing	6/3	6/3	6/3
Gross Filter Weight	.6376	.7267	.6219
Date of Weighing	6/3	6/3	6/3
Gross Filter Weight	.6378	.7269	.6220
Average Gross Weight	.6377	.7268	.62195
Filter Tare Weight	.4747	.4999	.4499
Weight of Particulate on Filter	.1630	.2269	.17205
Total Weight of Particulate	212.56mg	279.97	203.0

ACETONE BLANK ANALYTICAL DATA FORM

Blank Volume	100
Date of Weighing	6/3
Gross Weight	90.8210
Date of Weighing	6/3
Gross Weight	90.8210
Average Gross Weight	90.8210
Tare Weight	90.8192
Weight of Blank (Ma)	.0008
Ca= ma/(Va*Pa) = mg/g	0.01

Note: In no case should a blank residue greater than 0.01 mg/g or 0.001% of the blank weight be subtracted from the sample weight.

PARTICULATE ANALYTICAL DATA FORM

Company: LP Corrigan
Date: 6/1/95
Location: Dryer 3, Imps

	Run 1	Run 2	Run 3
Density (Pa)	1.0	1.0	1.0
Blank Concentration (Ca) Vols	341	359	346
Rinse Volume (Vaw) Vola	100	100	100
Residue in Rinse (Wa) = Ca*Vaw*Pa			
Date of Weighing	6/3	6/3	6/3
Gross Weight	103.8116	103.5587	103.2657
Date of Weighing	6/3	6/3	6/3
Gross Weight	103.8114	103.5588	103.2657
Average Gross Weight	103.8115	103.55875	103.2657
Less Blank Residue (Wa)			
Tare Weight	103.8076	103.5515	103.2595
Weight of Particulate in Rinse	0.0039 gr	0.00725	0.0062
Date of Weighing			
Gross Filter Weight			
Date of Weighing			
Gross Filter Weight			
Average Gross Weight			
Filter Tare Weight			
Weight of Particulate on Filter			
Total Weight of Particulate	13.30 mg	26.03 mg	21.45 mg

ACETONE BLANK ANALYTICAL DATA FORM

Blank Volume	
Date of Weighing	
Gross Weight	
Date of Weighing	
Gross Weight	
Average Gross Weight	
Tare Weight	
Weight of Blank (Ma)	
Ca= ma/(Va*Pa) = mg/g	

Note: In no case should a blank residue greater than 0.01 mg/g or 0.001% of the blank weight be subtracted from the sample weight.

PARTICULATE ANALYTICAL DATA FORM

Company: LP Corrigan
Date:
Location: Dryer 3 PW

	Run 1	Run 2	Run 3
Density (Pa)	.7854	.7854	.7854
Blank Concentration (Ca)	.0051	.0051	.0051
Rinse Volume (Vaw)	200	150	200
Residue in Rinse (Wa) = Ca*Vaw*Pa	0.80mg	0.76mg	0.80mg
Date of Weighing	6/3	6/3	6/3
Gross Weight	93.5500	99.9950	93.3496
Date of Weighing	6/3	6/3	6/3
Gross Weight	93.5501	99.9952	93.3496
Average Gross Weight	93.55005	99.9951	93.3496
Less Blank Residue (Wa) Add Blank	.0008	0.00076	0.0008
Tare Weight	93.4008	99.8910	93.2403
Weight of Particulate in Rinse	0.14845	0.1034	0.1085
Date of Weighing	6/3	6/3	6/3
Gross Filter Weight	.6151	.6039	.5971
Date of Weighing	6/3	6/3	6/3
Gross Filter Weight	.6151	.6039	.5969
Average Gross Weight	.6151	.6039	.5970
Filter Tare Weight	.4991	.4777	.4549
Weight of Particulate on Filter	.1160	.1262	.1421
Total Weight of Particulate	264.45	229.64	220.6

ACETONE BLANK ANALYTICAL DATA FORM

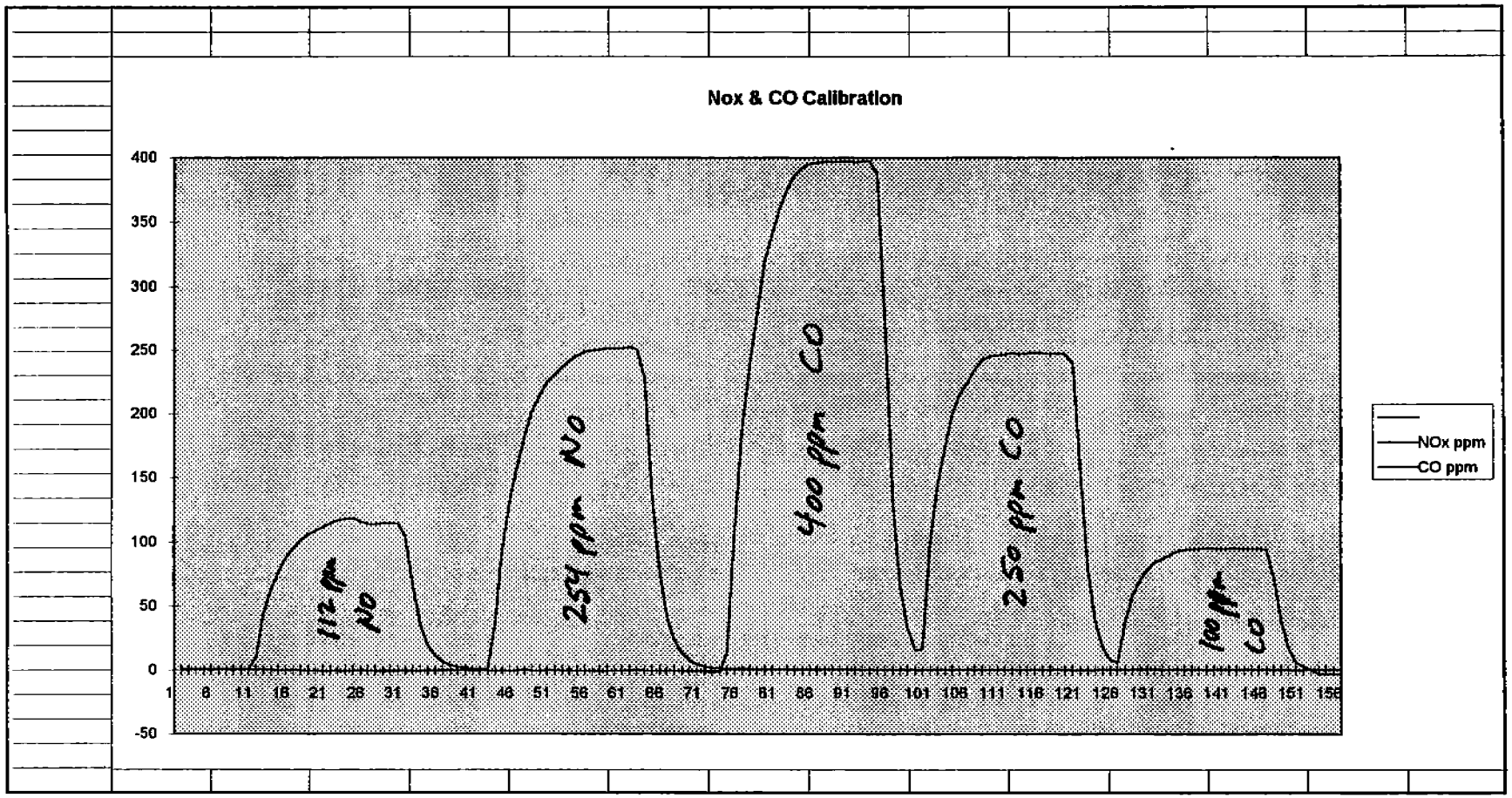
Blank Volume	100
Date of Weighing	6/2
Gross Weight	91.7682
Date of Weighing	6/3
Gross Weight	91.7682
Average Gross Weight	91.7682
Tare Weight	91.7619
Weight of Blank (Ma)	.0004
Ca = ma/(Va*Pa) = mg/g	.0051

Note: In no case should a blank residue greater than 0.01 mg/g or 0.001% of the blank weight be subtracted from the sample weight.

APPENDIX C

Nox CO Calibration

Dryer #1 5/8/95



9:13 am

9:19 am

9:23 am

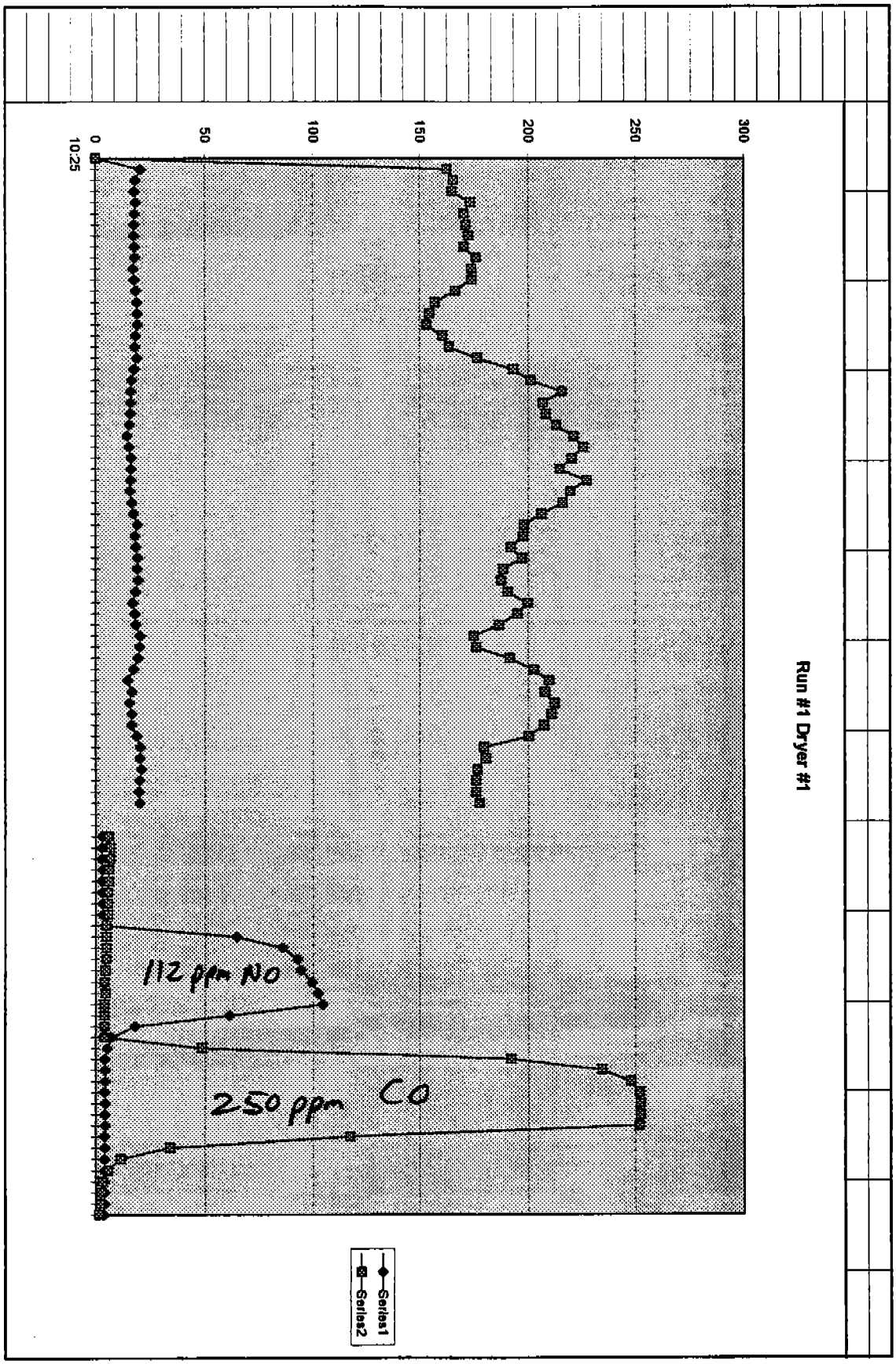
50

FILE NA e:cal1

LOGGIN 1 START LOGGING ########
LAST SAMPLE @ ########

	ACTIVE MODULE SAMPLE UNITS:	1A Voltage 5 sec Volts	1B Voltage 5 sec Volts	NOx ppm	2A Voltage 5 sec Volts	CO ppm	2B Voltage 4 hrs Volts
	1	0.0	0.0	0.5	0.0	1.5	0.7
	2	0.0	0.0	0.8	0.0	1.0	
	3	0.0	0.0	0.8	0.0	0.5	
	4	0.0	0.0	0.8	0.0	1.0	
	5	0.0	0.0	0.8	0.0	0.5	
	6	0.0	0.0	0.8	0.0	0.5	
	7	0.0	0.0	0.8	0.0	0.5	
	8	0.0	0.0	0.8	0.0	0.5	
	9	0.0	0.0	0.8	0.0	0.5	
	10	0.0	0.0	0.8	0.0	1.0	
09:13	11	0.0	0.4	10.0	0.0	0.5	
	12	0.0	1.8	44.0	0.0	0.5	
	13	0.0	2.5	62.8	0.0	0.5	
	14	0.0	3.0	76.0	0.0	0.0	
	15	0.0	3.5	87.0	0.0	0.0	
	16	0.0	3.8	96.3	0.0	0.0	
	17	0.0	4.1	101.3	0.0	0.0	
	18	0.0	4.3	106.3	0.0	-0.5	
	19	0.0	4.4	109.0	0.0	0.0	
	20	0.0	4.5	112.0	0.0	-1.0	
	21	0.0	4.6	114.8	0.0	-0.5	
	22	0.0	4.7	117.0	0.0	-0.5	
	23	0.0	4.7	118.3	0.0	-1.0	
	24	0.0	4.8	118.8	0.0	-0.5	
	25	0.0	4.7	116.3	0.0	-0.5	
	26	0.0	4.6	114.5	0.0	-0.5	
	27	0.0	4.6	114.3	0.0	-0.5	
	28	0.0	4.6	114.8	0.0	-1.0	
	29	0.0	4.6	115.0	0.0	-1.0	
	30	0.0	4.6	114.5	0.0	-0.5	
	31	0.0	4.2	105.3	0.0	-0.5	
	32	0.0	2.6	65.8	0.0	-1.0	
	33	0.0	1.5	36.5	0.0	-0.5	
	34	0.0	0.8	20.0	0.0	-0.5	
	35	0.0	0.5	11.3	0.0	-0.5	
	36	0.0	0.3	6.5	0.0	0.5	
	37	0.0	0.2	4.0	0.0	0.0	
	38	0.0	0.1	2.8	0.0	0.0	
	39	0.0	0.1	1.8	0.0	0.0	
	40	0.0	0.1	1.5	0.0	-0.5	
	41	0.0	0.0	1.0	0.0	0.0	
	42	0.0	0.0	1.0	0.0	0.0	
09:16	43	0.0	1.5	36.5	0.0	-0.5	
	44	0.0	3.9	97.0	0.0	-0.5	
	45	0.0	5.3	133.5	0.0	-0.5	
	46	0.0	6.4	160.0	0.0	0.0	
	47	0.0	7.4	184.5	0.0	0.5	
	48	0.0	8.1	203.0	0.0	-0.5	
	49	0.0	8.8	215.0	0.0	-0.5	
	50	0.0	9.0	225.3	0.0	0.0	
	51	0.0	9.2	231.0	0.0	0.5	
	52	0.0	9.5	236.8	0.0	-0.5	
	53	0.0	9.7	241.8	0.0	-0.5	
	54	0.0	9.8	245.0	0.0	-0.5	
	55	0.0	9.9	248.5	0.0	-0.5	
	56	0.0	10.0	250.0	0.0	-0.5	
	57	0.0	10.0	250.5	0.0	-1.0	
	58	0.0	10.1	251.5	0.0	-0.5	
	59	0.0	10.0	251.0	0.0	-0.5	
	60	0.0	10.1	251.3	0.0	-0.5	
	61	0.0	10.1	252.3	0.0	0.5	
	62	0.0	10.0	250.5	0.0	0.0	
	63	0.0	9.1	227.0	0.0	0.0	
	64	0.0	5.6	139.8	0.0	-0.5	
	65	0.0	3.1	77.8	0.0	0.0	
	66	0.0	1.7	42.8	0.0	-0.5	
	67	0.0	1.0	24.0	0.0	0.0	
	68	0.0	0.5	13.5	0.0	-0.5	
	69	0.0	0.3	7.5	0.0	-1.0	
	70	0.0	0.2	4.8	0.0	-0.5	
	71	0.0	0.1	3.0	0.0	-1.0	
	72	0.0	0.1	2.3	0.0	-1.5	
09:18	73	0.0	0.1	1.8	0.0	-1.0	
	74	0.0	0.1	1.3	0.0	13.5	
	75	0.0	0.1	1.3	0.2	111.5	
	76	0.0	0.1	1.3	0.4	190.0	
	77	0.0	0.1	1.3	0.5	241.0	
	78	0.0	0.0	1.0	0.6	278.5	
	79	0.0	0.0	1.0	0.6	321.0	
	80	0.0	0.0	1.0	0.7	341.0	
	81	0.0	0.0	1.0	0.7	360.5	
	82	0.0	0.0	0.8	0.8	375.5	
	83	0.0	0.0	0.8	0.8	386.5	
	84	0.0	0.0	0.8	0.8	392.5	
	85	0.0	0.0	0.8	0.8	395.0	
	86	0.0	0.0	1.0	0.8	396.0	
	87	0.0	0.0	1.0	0.8	397.0	
	88	0.0	0.0	1.0	0.8	397.0	
	89	0.0	0.0	0.8	0.8	397.0	
	90	0.0	0.0	0.8	0.8	397.5	
	91	0.0	0.0	0.8	0.8	398.5	
	92	0.0	0.0	0.5	0.8	397.5	
	93	0.0	0.0	0.5	0.8	397.5	

	94	0.0	0.0	0.5	0.8	387.0
	95	0.0	0.0	0.8	0.5	271.5
	96	0.0	0.0	0.5	0.3	135.0
	97	0.0	0.0	0.8	0.1	67.0
	98	0.0	0.0	0.8	0.1	33.0
	99	0.0	0.0	0.8	0.0	16.5
	100	0.0	0.0	0.5	0.0	17.0
09:21	101	0.0	0.0	0.5	0.2	100.5
	102	0.0	0.0	0.5	0.3	144.5
	103	0.0	0.0	0.5	0.3	174.5
	104	0.0	0.0	0.6	0.4	200.5
	105	0.0	0.0	0.6	0.4	215.0
	106	0.0	0.0	0.5	0.4	224.0
	107	0.0	0.0	0.6	0.6	234.5
	108	0.0	0.0	0.6	0.6	242.0
	109	0.0	0.0	0.5	0.6	246.0
	110	0.0	0.0	0.8	0.5	248.0
	111	0.0	0.0	0.6	0.5	247.0
	112	0.0	0.0	0.8	0.5	247.5
	113	0.0	0.0	0.5	0.5	247.0
	114	0.0	0.0	0.6	0.5	247.5
	115	0.0	0.0	0.6	0.5	247.5
	116	0.0	0.0	0.6	0.5	247.5
	117	0.0	0.0	0.6	0.5	247.0
	118	0.0	0.0	0.5	0.5	247.5
	119	0.0	0.0	0.6	0.5	247.0
	120	0.0	0.0	0.5	0.5	240.0
	121	0.0	0.0	0.3	0.3	159.5
	122	0.0	0.0	0.3	0.2	81.0
	123	0.0	0.0	0.5	0.1	38.5
	124	0.0	0.0	0.5	0.0	18.0
	125	0.0	0.0	0.5	0.0	8.5
	126	0.0	0.0	0.8	0.0	6.0
09:23	127	0.0	0.0	0.5	0.1	37.5
	128	0.0	0.0	0.8	0.1	58.0
	129	0.0	0.0	0.8	0.1	70.5
	130	0.0	0.0	0.8	0.2	78.5
	131	0.0	0.0	0.8	0.2	84.5
	132	0.1	0.0	0.8	0.2	87.0
	133	0.1	0.0	0.5	0.2	90.0
	134	0.1	0.0	0.8	0.2	93.0
	135	0.1	0.0	0.5	0.2	94.5
	136	0.1	0.0	0.5	0.2	95.5
	137	0.1	0.0	0.5	0.2	95.5
	138	0.1	0.0	0.5	0.2	96.0
	139	0.1	0.0	0.5	0.2	96.0
	140	0.1	0.0	0.5	0.2	95.5
	141	0.1	0.0	0.5	0.2	96.0
	142	0.1	0.0	0.5	0.2	96.0
	143	0.1	0.0	0.5	0.2	95.5
	144	0.1	0.0	0.5	0.2	95.5
	145	0.0	0.0	0.5	0.2	96.0
	146	0.0	0.0	0.5	0.2	94.5
	147	0.0	0.0	0.5	0.1	74.5
	148	0.0	0.0	0.5	0.1	38.5
	149	0.0	0.0	0.5	0.0	18.0
	150	0.0	0.0	0.3	0.0	6.0
09:25	151	0.0	0.0	0.5	0.0	3.0
	152	0.0	0.0	0.5	0.0	0.5
	153	0.0	0.0	0.6	0.0	-2.5
	154	0.0	0.0	0.5	0.0	-3.0
	155	0.0	0.0	0.5	0.0	-2.5
	156	0.0	0.0	0.5	0.0	-3.0



Sheet1

Page 1

Lost Power 11:22

Average Nox 28.13

Average CO 189.36

Dryer #1 CO & Nox					
Start Run#1			NOx ppm		CO ppm
10:25			20.75		162.5
			18.75		165.5
			18.25		165
			18.75		173.5
			18.25		170.5
			18		171.5
			17.75		172.5
			18.25		170.5
			18.25		176
			17.5		174
			18		174
			18.75		166.5
			19.25		157
			19.25		154.5
			19.25		153
			18.75		160.5
			18.25		163.5
			19		176.5
			17.75		193
			16.75		201
			16.25		215.5
			16.25		206.5
			16		208
			15.5		213
			14.75		221
			15.5		225.5
			16.5		220
			16.5		214.5
			16.25		227
			16		219.5
			16.75		216
			17.5		206
			19.25		198
			18.25		197.5
			18.75		192
			19.25		197
			19.25		188.5
			19.75		187.5
			18.5		190.5
			17.25		199.5
			18.25		195
			18.75		186.5
			20.5		175
			20.5		176
			19.5		191.5
			17.75		202.5

			15		209.5
			16.75		207.5
			15.5		212
			16.75		210.5
			16.5		207
			19		200
			20.75		179.5
			20.5		180.5
			21.25		176.5
			20.25		176
			20		176
			20.5		177.5
Stop Run 1					
11:22					
		0.1	3.3	0.0	6.0
		0.1	3.0	0.0	6.5
		0.1	3.0	0.0	6.5
		0.1	3.3	0.0	6.0
		0.1	3.0	0.0	6.0
		0.1	3.3	0.0	5.5
		0.1	3.3	0.0	5.5
		0.1	3.3	0.0	5.5
		0.2	4.8	0.0	5.0
		2.6	64.8	0.0	5.0
		3.4	86.0	0.0	5.0
		3.7	92.8	0.0	5.0
		3.8	94.3	0.0	4.5
		4.0	99.5	0.0	4.0
		4.1	102.3	0.0	4.5
		4.2	104.3	0.0	4.0
		2.5	61.3	0.0	4.0
		0.7	18.3	0.0	4.0
		0.3	7.8	0.0	4.0
		0.2	5.3	0.1	48.5
		0.2	4.5	0.4	192.0
		0.2	4.5	0.5	234.0
		0.2	4.5	0.5	247.5
		0.2	4.3	0.5	251.5
		0.2	4.8	0.5	252.0
		0.2	4.5	0.5	252.0
		0.2	4.5	0.5	251.5
		0.2	4.3	0.2	117.0
		0.2	4.5	0.1	34.0
		0.2	4.3	0.0	11.5
		0.2	4.3	0.0	5.5
		0.2	4.3	0.0	3.0
		0.2	4.3	0.0	2.5
		0.2	4.0	0.0	2.0
		0.2	4.0	0.0	1.5
		Average NOx		Average CO	

		18.12931		189.3621	

TIME	VOC EX	NOX	CO	O2
09:22:31	1.00	0.50	-2.50	
09:22:36	1.00	0.50	-3.00	
10:09:16	-2.00	0.75	2.00	
10:09:31	-2.00	0.75	1.50	
10:09:46	-2.00	0.75	1.50	
10:10:01	-2.00	0.75	1.50	
10:10:16	-2.00	0.75	2.00	
10:10:31	-2.00	0.75	1.50	
10:10:46	-2.00	1.00	1.50	
10:11:01	-2.00	1.00	1.50	
10:11:16	-2.00	0.75	2.00	
10:11:31	-2.00	0.75	1.50	
10:11:46	-2.00	6.00	90.50	
10:12:01	-2.00	13.50	202.00	
10:12:16	-2.00	14.75	217.50	
10:12:31	-2.00	14.00	214.50	
10:12:46	-2.00	16.00	217.00	
10:13:01	-2.00	14.75	209.00	
10:13:16	-2.00	15.25	209.00	
10:13:31	-2.00	16.00	209.50	
10:13:46	-2.00	16.00	217.00	
10:14:01	-2.00	16.25	207.50	
10:14:16	-2.00	16.50	210.50	
10:14:31	-2.00	16.50	214.00	
10:14:46	-2.00	16.00	209.50	
10:15:01	-2.00	15.50	209.00	
10:15:16	-2.00	15.75	208.50	
10:15:31	-2.00	16.25	202.00	
10:15:46	-2.00	17.00	196.50	
10:16:01	-2.00	17.25	197.00	
10:16:16	-2.00	16.75	191.00	
10:16:31	-2.00	16.75	198.50	
10:16:46	-2.00	17.25	201.50	
10:17:01	-2.00	17.00	204.00	
10:17:16	-2.00	17.00	206.50	
10:17:31	-2.00	17.25	200.50	
10:17:46	-2.00	16.75	203.00	
10:18:01	-2.00	17.50	197.50	
10:18:16	-2.00	17.75	194.00	
10:18:31	-2.00	17.50	191.50	
10:18:46	-2.00	18.00	184.50	
10:19:01	1.00	19.00	181.00	
10:19:16	-2.00	19.00	187.00	
10:19:31	1.00	19.25	182.50	
10:19:46	1.00	19.50	182.50	
10:20:01	1.00	20.00	179.50	
10:20:16	-2.00	20.00	170.50	
10:20:31	-2.00	20.25	165.00	
10:20:46	-2.00	20.50	160.50	
10:21:01	-2.00	20.75	157.00	
10:21:16	-2.00	20.75	158.00	
10:21:31	-2.00	20.50	159.00	
10:21:46	-2.00	20.50	160.00	
10:22:01	-2.00	20.75	162.50	
10:22:16	-2.00	20.75	161.50	
10:22:31	-2.00	18.75	162.50	
10:22:46	-2.00	18.75	162.00	
10:23:01	-2.00	18.75	165.50	

Probe In Stack

Start Run #1
Dryer #1
LP 6/11/95

TIME	VOC EX	NOX	CO	O2
10:23:46	-2.00	18.50	164.50	
10:24:01	-2.00	18.25	165.00	
10:24:16	-2.00	18.50	167.50	
10:24:31	-2.00	18.50	167.00	
10:24:46	-2.00	18.50	170.00	
10:25:01	-2.00	18.75	173.50	
10:25:16	-2.00	18.25	170.00	
10:25:31	-2.00	18.00	170.00	
10:25:46	-2.00	18.25	171.50	
10:26:01	-2.00	18.00	171.50	
10:26:16	-2.00	18.25	170.50	
10:26:31	-2.00	18.25	170.00	
10:26:46	-2.00	17.75	171.00	
10:27:01	-2.00	17.75	172.50	
10:27:16	-2.00	18.25	172.50	
10:27:31	-2.00	18.50	174.50	
10:27:46	-2.00	18.50	170.00	
10:28:01	-2.00	18.25	170.50	
10:28:16	-2.00	18.25	173.00	
10:28:31	-2.00	18.50	171.00	
10:28:46	-2.00	18.50	170.50	
10:29:01	-2.00	18.25	176.00	
10:29:16	-2.00	17.50	176.00	
10:29:31	-2.00	17.25	175.50	
10:29:46	-2.00	17.00	174.50	
10:30:01	-2.00	17.50	174.00	
10:30:16	-2.00	18.50	174.50	
10:30:31	-2.00	18.75	173.50	
10:30:46	-2.00	18.50	175.50	
10:31:01	-2.00	18.00	174.00	
10:31:16	-2.00	18.50	172.50	
10:31:31	-2.00	18.50	169.00	
10:31:46	-2.00	18.75	166.00	
10:32:01	-2.00	18.75	166.50	
10:32:16	-2.00	19.00	165.00	
10:32:31	1.00	19.25	158.50	
10:32:46	1.00	19.00	155.50	
10:33:01	1.00	19.25	157.00	
10:33:16	1.00	19.25	158.50	
10:33:31	1.00	19.25	156.50	
10:33:46	1.00	19.25	158.50	
10:34:01	1.00	19.25	154.50	
10:34:16	1.00	19.00	157.50	
10:34:31	1.00	19.00	159.00	
10:34:46	1.00	19.00	156.00	
10:35:01	1.00	19.25	153.00	
10:35:16	1.00	18.75	156.50	
10:35:31	1.00	18.75	162.50	
10:35:46	1.00	19.00	158.50	
10:36:01	1.00	18.75	160.50	
10:36:16	1.00	18.75	161.50	
10:36:31	1.00	18.75	159.00	
10:36:46	1.00	18.25	160.50	
10:37:01	-2.00	18.25	163.50	
10:37:16	-2.00	18.25	168.50	
10:37:31	-2.00	18.75	173.00	
10:37:46	-2.00	18.50	174.00	
10:38:01	-2.00	19.00	176.50	
10:38:16	-2.00	19.00	179.00	

10:38:46	-2.00	18.50	191.00
10:39:01	-2.00	18.25	188.50

TIME	VOC EX	NOX	CO	O2
10:39:16	-2.00	18.00	188.00	
10:39:31	-2.00	18.00	190.00	
10:39:46	-2.00	17.50	191.50	
10:40:01	-2.00	17.75	193.00	
10:40:16	-2.00	17.50	192.50	
10:40:31	-2.00	17.00	196.00	
10:40:46	-2.00	17.00	203.00	
10:41:01	-2.00	16.75	201.00	
10:41:16	-2.00	16.50	198.00	
10:41:31	-2.00	16.00	200.50	
10:41:46	-2.00	16.50	206.50	
10:42:01	-2.00	16.25	215.50	
10:42:16	-2.00	15.25	212.00	
10:42:31	-2.00	15.75	206.50	
10:42:46	-2.00	16.25	204.50	
10:43:01	-2.00	16.25	206.50	
10:43:16	-2.00	18.00	205.00	
10:43:31	-2.00	18.25	210.00	
10:43:46	-2.00	16.75	208.50	
10:44:01	-2.00	16.00	208.00	
10:44:16	-2.00	15.25	208.50	
10:44:31	-2.00	16.00	209.50	
10:44:46	-2.00	16.25	213.00	
10:45:01	-2.00	15.50	213.00	
10:45:16	-2.00	16.00	212.00	
10:45:31	-2.00	16.00	214.50	
10:45:46	-2.00	15.25	220.00	
10:46:01	-2.00	14.75	221.00	
10:46:16	-2.00	15.75	217.50	
10:46:31	1.00	16.25	214.00	
10:46:46	2.00	16.25	220.50	
10:47:01	1.00	15.50	225.50	
10:47:16	1.00	15.25	225.50	
10:47:31	1.00	15.50	222.00	
10:47:46	1.00	15.50	216.50	
10:48:01	1.00	16.50	220.00	
10:48:16	1.00	16.25	216.00	
10:48:31	1.00	15.50	219.50	
10:48:46	1.00	16.25	218.00	
10:49:01	2.00	16.50	214.50	
10:49:16	2.00	16.00	216.00	
10:49:31	2.00	15.25	218.50	
10:49:46	2.00	16.00	218.50	
10:50:01	2.00	16.25	227.00	
10:50:16	1.00	16.50	228.50	
10:50:31	1.00	16.00	229.50	
10:50:46	1.00	17.25	224.50	
10:51:01	1.00	16.00	219.50	
10:51:16	1.00	16.75	216.00	
10:51:31	1.00	16.50	220.00	
10:51:46	1.00	16.00	219.00	
10:52:01	1.00	16.75	216.00	
10:52:16	1.00	16.75	207.50	
10:52:31	1.00	17.50	205.00	
10:52:46	1.00	18.00	208.50	
10:53:01	1.00	17.50	206.00	
10:53:16	1.00	18.00	201.50	

TIME	VOC EX	NOX	CO	O2
10:53:46	1.00	18.75	196.50	
10:54:01	1.00	19.25	198.00	
10:54:16	1.00	19.00	201.00	
10:54:31	1.00	18.50	199.50	
10:54:46	1.00	18.50	197.50	
10:55:01	1.00	18.25	197.50	
10:55:16	1.00	18.50	202.50	
10:55:31	1.00	18.50	201.00	
10:55:46	1.00	18.75	197.00	
10:56:01	1.00	18.75	192.00	
10:56:16	1.00	18.50	193.50	
10:56:31	1.00	19.00	192.00	
10:56:46	1.00	19.75	189.50	
10:57:01	1.00	19.25	197.00	
10:57:16	1.00	19.50	201.50	
10:57:31	1.00	19.25	194.50	
10:57:46	1.00	19.25	191.50	
10:58:01	1.00	19.25	188.50	
10:58:16	1.00	19.75	186.50	
10:58:31	1.00	18.75	184.50	
10:58:46	-2.00	19.25	186.50	
10:59:01	-2.00	19.75	187.50	
10:59:16	-2.00	19.25	190.50	
10:59:31	-2.00	18.75	189.50	
10:59:46	1.00	18.50	191.50	
11:00:01	1.00	18.50	190.50	
11:00:16	1.00	18.75	189.50	
11:00:31	1.00	17.75	194.00	
11:00:46	1.00	18.00	196.00	
11:01:01	1.00	17.25	199.50	
11:01:16	1.00	17.25	201.50	
11:01:31	1.00	17.25	199.00	
11:01:46	1.00	18.00	198.50	
11:02:01	1.00	18.25	195.00	
11:02:16	1.00	17.25	194.00	
11:02:31	1.00	17.50	198.50	
11:02:46	1.00	17.25	199.00	
11:03:01	1.00	18.75	186.50	
11:03:16	1.00	19.50	177.00	
11:03:31	1.00	20.50	172.00	
11:03:46	1.00	20.25	171.50	
11:04:01	1.00	20.50	175.00	
11:04:16	1.00	20.75	172.50	
11:04:31	1.00	20.75	170.50	
11:04:46	1.00	20.00	173.00	
11:05:01	1.00	20.50	176.00	
11:05:16	1.00	21.00	176.00	
11:05:31	1.00	20.75	180.50	
11:05:46	1.00	20.50	183.00	
11:06:01	1.00	19.50	191.50	
11:06:16	1.00	19.00	190.50	
11:06:31	1.00	18.50	191.00	
11:06:46	1.00	18.50	193.50	
11:07:01	1.00	17.75	202.50	
11:07:16	1.00	19.00	211.50	
11:07:31	1.00	17.50	216.00	
11:07:46	1.00	16.25	219.50	
11:08:01	-2.00	15.00	209.00	

11:08:46	-2.00	15.25	206.50
11:09:01	-2.00	16.75	207.50

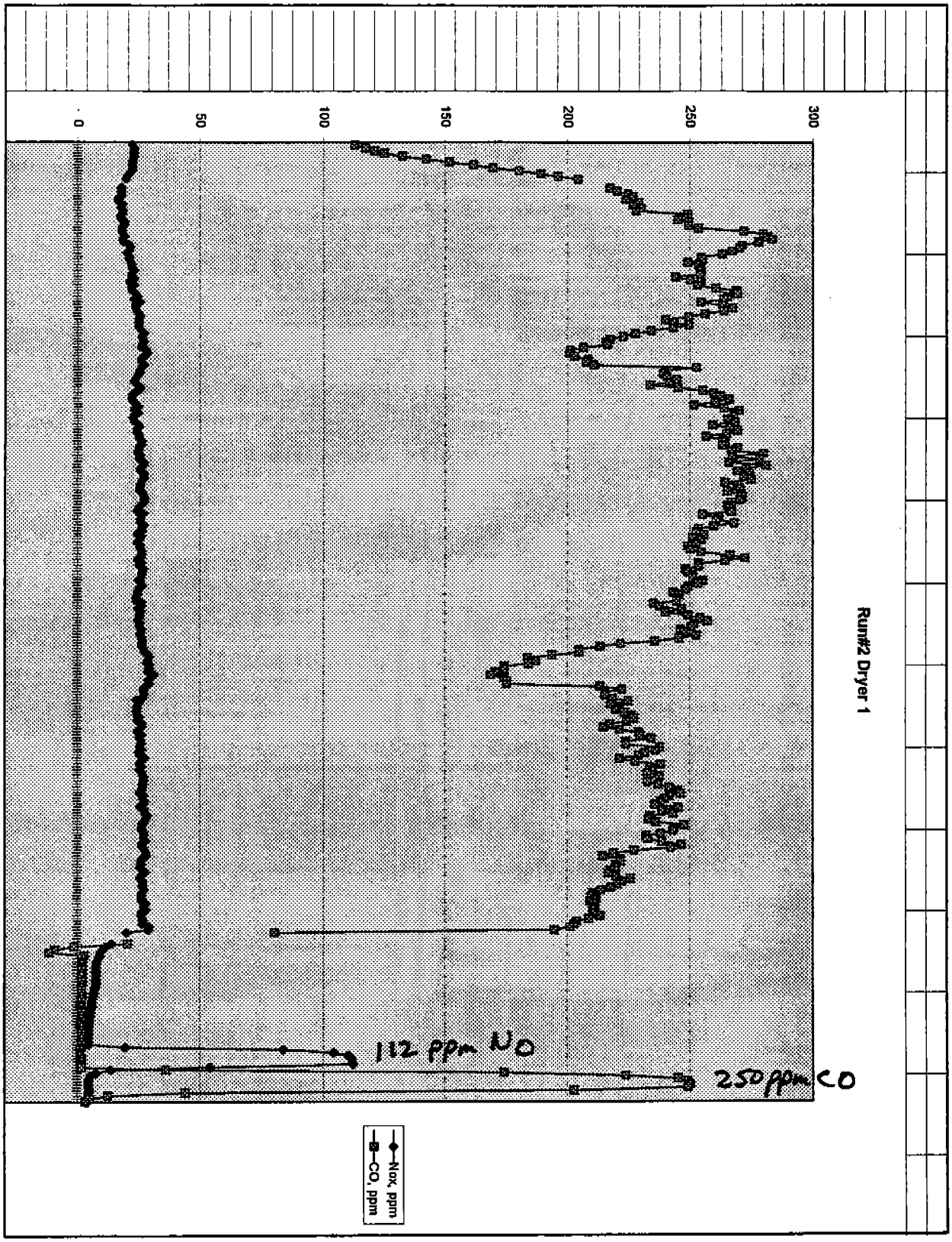
TIME	VOC EX	NOX	CO	O2
11:09:16	-2.00	16.00	213.00	
11:09:31	-2.00	14.50	215.50	
11:09:46	-2.00	14.50	214.50	
11:10:01	1.00	15.50	212.00	
11:10:16	1.00	15.25	215.50	
11:10:31	1.00	16.75	212.50	
11:10:46	1.00	17.00	214.00	
11:11:01	1.00	16.75	210.50	
11:11:16	1.00	17.75	213.50	
11:11:31	1.00	16.50	219.00	
11:11:46	1.00	18.00	209.50	
11:12:01	1.00	16.50	207.00	
11:12:16	1.00	17.50	206.00	
11:12:31	-2.00	17.50	202.50	
11:12:46	-2.00	18.25	201.00	
11:13:01	-2.00	19.00	200.00	
11:13:16	-2.00	20.25	191.50	
11:13:31	-2.00	20.50	189.00	
11:13:46	-2.00	20.50	182.50	
11:14:01	-2.00	20.75	179.50	
11:14:16	-2.00	21.00	177.50	
11:14:31	-2.00	20.75	174.50	
11:14:46	-2.00	20.75	176.00	
11:15:01	-2.00	20.50	180.50	
11:15:16	-2.00	19.75	182.00	
11:15:31	-2.00	20.50	186.50	
11:15:46	-2.00	21.00	180.50	
11:16:01	-2.00	21.25	176.50	
11:16:16	-2.00	22.00	185.50	
11:16:31	-2.00	21.25	186.00	
11:16:46	-2.00	20.50	182.00	
11:17:01	-2.00	20.25	176.00	
11:17:16	-2.00	20.25	174.00	
11:17:31	-2.00	20.25	171.50	
11:17:46	-2.00	19.75	172.50	
11:18:01	-2.00	20.00	176.00	
11:18:16	-2.00	20.00	173.00	
11:18:31	-2.00	21.00	174.50	
11:18:46	-2.00	21.25	182.00	
11:19:01	1.00	20.50	177.50	
11:19:16	1.00	19.25	181.00	
11:19:31	1.00	19.00	187.00	

TIME	VOC EX	NOX	CO	O2
12:11:45	-2.00	3.25	5.50	
12:12:00	-1.00	3.25	5.50	
12:12:15	-2.00	4.75	5.00	
12:12:30	-2.00	64.75	5.00	
12:12:45	-2.00	86.00	5.00	
12:13:00	-2.00	92.75	5.00	
12:13:15	-2.00	94.25	4.50	
12:13:30	-2.00	99.50	4.00	
12:13:45	-2.00	102.25	4.50	
12:14:00	-2.00	104.25	4.00	
12:14:15	-2.00	61.25	4.00	
12:14:30	-2.00	18.25	4.00	
12:14:45	-2.00	7.75	4.00	
12:15:00	15.00	5.25	48.50	
12:15:15	1.00	4.50	192.00	
12:15:30	1.00	4.50	234.00	
12:15:45	1.00	4.50	247.50	
12:16:00	1.00	4.25	251.50	
12:16:15	1.00	4.75	252.00	
12:16:30	1.00	4.50	252.00	
12:16:45	1.00	4.50	251.50	
12:17:00	1.00	4.25	117.00	
12:17:15	1.00	4.50	34.00	
12:17:30	1.00	4.25	11.50	
12:17:45	-2.00	4.25	5.50	
12:18:00	1.00	4.25	3.00	
12:18:15	1.00	4.25	2.50	
12:18:30	1.00	4.00	2.00	
12:18:45	1.00	4.00	1.50	

112 ppm NO

<250 ppm CO

Run2 Nox CO



Start — 2:45 pm

STOP 3:49 pm

Page 1

Average Nox 24.9

Average CO 239.0

FILE NAME:

LOGGING SESSION: START LOGGING @ #######
LAST SAMPLE @ #######

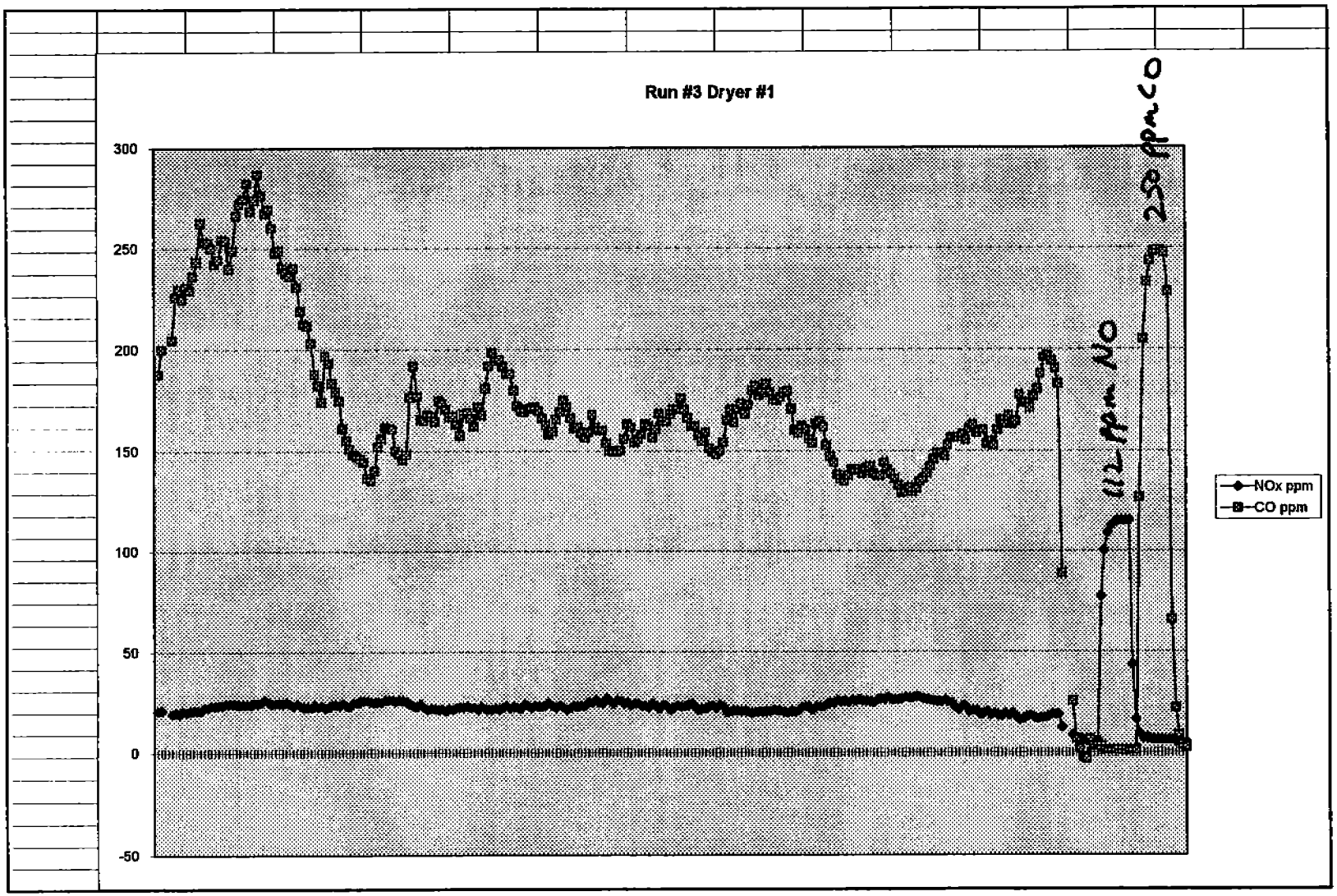
	ACTIVE C MODULE SAMPLE UNITS:	1B Voltage 15 sec Volts	Nox, ppm	2A Voltage 15 sec Volts	CO, ppm	2B Voltage 4 hrs Volts
	1	0.9	22.0	0.2	112.5	0.9
	2	0.9	22.8	0.2	117.0	
	3	0.9	22.8	0.2	120.5	
	4	0.9	22.8	0.2	124.5	
	5	0.9	22.8	0.3	132.0	
	6	0.9	22.5	0.3	142.0	
	7	0.9	22.3	0.3	151.5	
	8	0.9	22.0	0.3	161.5	
	9	0.9	22.3	0.3	169.5	
	10	0.9	22.0	0.4	180.0	
	11	0.8	21.0	0.4	189.0	
	12	0.8	20.0	0.4	196.0	
	13	0.8	19.5	0.4	204.0	
Start Run2 2:44	14	0.7	17.8	0.4	217.0	
	15	0.7	17.8	0.4	220.0	
	16	0.7	17.8	0.4	224.5	
	17	0.7	17.8	0.5	226.5	
	18	0.7	16.3	0.4	223.5	
	19	0.7	16.8	0.5	229.0	
	20	0.7	18.0	0.5	226.5	
	21	0.7	17.5	0.5	230.0	
	22	0.7	18.3	0.5	228.0	
	23	0.7	18.0	0.5	248.0	
	24	0.7	17.3	0.5	247.5	
	25	0.7	17.8	0.5	245.0	
	26	0.8	19.0	0.5	249.5	
	27	0.8	18.8	0.5	249.5	
	28	0.7	18.0	0.5	253.5	
	29	0.7	18.0	0.5	271.5	
	30	0.7	18.3	0.6	279.5	
	31	0.8	18.8	0.6	281.0	
	32	0.7	18.3	0.6	283.0	
	33	0.7	18.5	0.6	277.5	
	34	0.8	20.8	0.5	271.0	
	35	0.9	21.3	0.5	270.0	
	36	0.8	20.8	0.6	267.0	
	37	0.8	20.0	0.5	263.0	
	38	0.8	21.0	0.5	254.5	
	39	0.8	20.8	0.5	255.0	
	40	0.9	21.5	0.6	249.0	
	41	0.9	21.8	0.5	253.5	
	42	0.9	22.0	0.5	254.5	
	43	0.9	22.8	0.5	254.5	
	44	0.9	21.8	0.5	254.0	
	45	0.9	22.0	0.5	244.0	
	46	0.9	22.8	0.5	250.0	
	47	0.8	21.0	0.5	254.5	
	48	0.9	22.8	0.5	253.0	
	49	0.9	21.8	0.5	260.5	
	50	0.9	22.0	0.5	268.5	
	51	0.9	23.5	0.5	269.0	
	52	1.0	24.3	0.5	265.0	
	53	0.9	22.8	0.5	263.5	
	54	1.0	25.3	0.5	254.5	
	55	0.9	23.5	0.5	263.0	
	56	0.9	23.5	0.5	267.0	
	57	1.0	23.8	0.5	263.5	
	58	1.0	24.8	0.5	256.0	
	59	1.0	25.3	0.5	249.5	
	60	1.0	24.8	0.5	240.0	
	61	1.0	24.8	0.5	243.5	
	62	1.0	24.8	0.5	249.5	
	63	1.0	24.8	0.5	243.0	
	64	1.0	25.8	0.5	234.0	
	65	1.1	27.0	0.5	227.5	
	66	1.1	26.3	0.4	222.5	
	67	1.1	26.5	0.4	217.0	
	68	1.1	26.8	0.4	215.5	
	69	1.1	26.3	0.4	216.0	
	70	1.0	26.0	0.4	206.0	
	71	1.1	27.8	0.4	201.0	
	72	1.1	28.0	0.4	200.5	
	73	1.1	27.3	0.4	202.5	
	74	1.0	28.0	0.4	208.0	
	75	1.0	26.8	0.4	207.0	
	76	1.1	27.0	0.4	210.5	
	77	1.0	26.0	0.5	252.5	
	78	1.0	25.3	0.5	239.5	
	79	1.0	25.0	0.5	239.0	
	80	1.0	24.5	0.5	240.5	
	81	0.9	23.5	0.5	244.5	
	82	0.9	23.0	0.5	241.5	
	83	1.0	24.0	0.5	233.5	
	84	1.0	25.3	0.5	245.0	
	85	1.0	25.0	0.5	255.0	
	86	0.9	23.3	0.5	259.5	
	87	0.9	22.3	0.5	262.0	
	88	0.9	21.8	0.5	265.5	
	89	0.9	22.5	0.5	260.0	
	90	0.9	23.5	0.5	251.5	
	91	1.0	24.5	0.5	253.5	

92	0.9	23.0	0.6	269.5
93	1.0	24.5	0.6	267.5
94	0.9	22.8	0.5	267.5
95	0.9	22.5	0.5	265.0
96	0.9	23.0	0.5	268.0
97	1.0	24.5	0.5	258.0
98	1.0	24.8	0.5	268.0
99	1.0	24.0	0.5	269.0
100	1.0	24.0	0.5	264.5
101	1.0	24.8	0.5	256.5
102	1.0	25.0	0.5	263.0
103	1.0	26.0	0.5	264.0
104	1.0	25.8	0.5	253.0
105	1.0	26.0	0.5	269.0
106	1.0	24.8	0.5	266.5
107	1.0	24.5	0.6	278.5
108	1.0	25.5	0.5	267.0
109	1.0	25.0	0.6	278.0
110	1.1	26.5	0.5	265.5
111	1.1	26.8	0.6	280.5
112	1.0	25.8	0.6	272.5
113	1.0	25.5	0.6	269.0
114	1.1	28.8	0.6	274.0
115	1.1	28.8	0.6	271.5
116	1.1	28.8	0.6	274.5
117	1.0	25.8	0.5	264.0
118	1.0	25.5	0.5	269.0
119	1.0	25.3	0.5	270.0
120	1.0	25.3	0.5	266.0
121	1.1	26.3	0.5	270.5
122	1.1	26.8	0.5	271.0
123	1.1	27.3	0.5	270.0
124	1.1	27.3	0.5	266.5
125	1.0	26.0	0.5	265.0
126	1.0	24.8	0.5	265.5
127	1.0	24.3	0.5	266.5
128	1.1	28.5	0.5	255.0
129	1.0	25.8	0.5	261.5
130	1.0	25.5	0.5	260.5
131	1.0	25.5	0.5	257.5
132	1.1	26.8	0.5	259.5
133	1.0	25.0	0.5	253.5
134	1.1	26.3	0.5	252.5
135	1.0	24.3	0.5	255.5
136	1.0	25.8	0.5	251.0
137	1.0	25.3	0.5	254.5
138	1.0	24.3	0.5	252.5
139	1.0	25.5	0.5	249.0
140	1.0	25.5	0.5	250.0
141	1.0	26.0	0.5	254.5
142	1.0	29.0	0.5	266.0
143	1.0	25.8	0.5	272.0
144	1.0	24.5	0.5	264.0
145	1.0	25.8	0.5	253.5
146	1.0	25.0	0.5	253.5
147	1.1	28.5	0.5	248.0
148	1.1	28.5	0.5	249.0
149	1.0	26.0	0.5	251.0
150	1.0	25.8	0.5	251.0
151	1.0	24.8	0.5	255.0
152	1.0	25.5	0.5	253.0
153	1.1	28.3	0.5	249.0
154	1.0	25.0	0.5	248.0
155	1.0	24.5	0.5	243.0
156	1.0	24.5	0.5	246.5
157	1.0	23.8	0.5	244.5
158	1.0	23.8	0.5	244.5
159	1.0	25.8	0.5	235.0
160	1.0	25.8	0.5	237.5
161	1.0	24.5	0.5	246.5
162	1.0	25.8	0.5	240.0
163	1.0	25.0	0.5	249.0
164	1.0	25.3	0.5	254.0
165	1.0	24.5	0.5	257.0
166	1.0	25.5	0.5	251.5
167	1.0	25.0	0.5	250.5
168	1.0	25.8	0.5	245.0
169	1.0	25.8	0.5	247.5
170	1.0	25.5	0.5	252.5
171	1.0	25.0	0.5	245.5
172	1.1	26.5	0.5	235.5
173	1.1	26.3	0.4	221.5
174	1.0	26.0	0.4	213.0
175	1.1	26.8	0.4	204.5
176	1.1	27.3	0.4	204.5
177	1.2	28.8	0.4	193.5
178	1.2	29.0	0.4	183.5
179	1.1	28.5	0.4	187.0
180	1.1	28.3	0.4	184.0
181	1.2	29.3	0.3	174.0
182	1.2	29.0	0.3	174.0
183	1.1	28.5	0.3	170.5
184	1.2	31.0	0.3	168.5
185	1.2	29.8	0.3	174.0
186	1.2	28.8	0.4	175.0
187	1.2	29.3	0.4	175.0
188	1.1	28.0	0.4	213.0
189	1.1	28.8	0.4	222.0
190	1.1	28.8	0.4	215.0
191	1.1	27.0	0.4	215.0
192	1.1	26.5	0.4	218.0
193	1.0	24.0	0.4	224.5
194	1.0	25.0	0.4	217.5

	195	1.0	24.3	0.4	221.0
	196	1.0	24.3	0.4	219.5
	197	1.0	24.0	0.4	223.0
	198	1.0	24.3	0.5	226.0
	199	1.0	25.0	0.5	227.0
	200	1.0	24.3	0.4	224.0
	201	1.1	28.3	0.4	217.0
	202	1.0	26.0	0.4	214.5
	203	1.0	25.5	0.4	221.0
	204	1.0	24.5	0.5	229.0
	205	1.0	26.0	0.5	229.5
	206	1.0	25.0	0.5	234.0
	207	1.0	25.8	0.4	223.5
	208	1.0	25.8	0.4	223.5
	209	1.0	25.3	0.5	237.5
	210	1.0	26.0	0.5	238.0
	211	1.0	24.8	0.5	231.5
	212	1.0	25.3	0.5	229.0
	213	1.1	27.3	0.4	221.0
	214	1.0	26.0	0.5	227.5
	215	1.0	25.3	0.5	238.0
	216	1.0	26.0	0.5	233.5
	217	1.0	25.0	0.5	234.5
	218	1.0	26.0	0.5	232.5
	219	1.1	26.5	0.5	237.5
	220	1.1	26.8	0.5	232.5
	221	1.1	26.8	0.5	232.5
	222	1.1	26.5	0.5	237.0
	223	1.1	26.5	0.5	241.5
	224	1.1	26.3	0.5	245.0
	225	1.0	25.3	0.5	246.0
	226	1.1	26.8	0.5	241.5
	227	1.1	26.5	0.5	239.5
	228	1.1	27.3	0.5	238.0
	229	1.1	26.8	0.5	235.5
	230	1.0	25.5	0.5	245.0
	231	1.1	27.0	0.5	238.5
	232	1.1	27.5	0.5	243.0
	233	1.1	28.3	0.5	233.5
	234	1.1	27.8	0.5	233.0
	235	1.1	27.3	0.5	236.0
	236	1.1	26.5	0.5	247.5
	237	1.0	26.0	0.5	243.5
	238	1.0	26.0	0.5	243.0
	239	1.1	26.8	0.5	238.0
	240	1.1	27.0	0.5	232.0
	241	1.1	26.8	0.5	232.5
	242	1.1	27.5	0.5	238.5
	243	1.0	26.0	0.5	246.5
	244	1.1	26.6	0.6	242.0
	245	1.1	27.3	0.5	227.0
	246	1.1	27.8	0.4	218.5
	247	1.1	28.0	0.4	214.0
	248	1.1	26.5	0.4	221.5
	249	1.0	25.8	0.4	221.5
	250	1.0	25.8	0.4	219.5
	251	1.0	25.5	0.4	219.5
	252	1.1	26.5	0.4	217.5
	253	1.1	27.3	0.4	216.5
	254	1.0	26.0	0.4	219.5
	255	1.0	25.5	0.5	225.5
	256	1.1	26.5	0.4	222.0
	257	1.1	26.5	0.4	220.0
	258	1.1	26.5	0.4	217.5
	259	1.1	27.0	0.4	213.5
	260	1.1	26.3	0.4	210.0
	261	1.0	25.8	0.4	209.5
	262	1.0	26.0	0.4	211.5
	263	1.0	26.0	0.4	209.0
	264	1.1	27.8	0.4	210.5
	265	1.1	26.8	0.4	211.0
	266	1.1	27.8	0.4	210.0
	267	1.0	25.8	0.4	211.0
	268	1.0	25.8	0.4	213.0
	269	1.1	26.3	0.4	208.5
	270	1.1	26.5	0.4	203.5
	271	1.1	26.5	0.4	202.5
	272	1.2	28.8	0.4	201.0
	273	1.2	28.8	0.4	194.5
	274	0.8	19.8	0.2	80.0
Stop Run2 3:49					
	275	0.6	13.8	0.0	20.0
	276	0.5	11.5	0.0	-1.5
	277	0.4	10.3	0.0	-9.5
	278	0.4	9.3	0.0	-11.5
	279	0.4	9.0	0.0	2.5
	280	0.3	8.5	0.0	1.5
	281	0.3	8.0	0.0	1.5
	282	0.3	7.8	0.0	2.0
	283	0.3	7.5	0.0	1.5
	284	0.3	7.5	0.0	1.5
	285	0.3	7.5	0.0	2.0
	286	0.3	7.8	0.0	2.0
	287	0.3	7.6	0.0	1.5
	288	0.3	7.5	0.0	2.0
	289	0.3	7.5	0.0	1.5
	290	0.3	7.3	0.0	1.5
	291	0.3	7.0	0.0	1.5
	292	0.3	6.8	0.0	1.5
	293	0.3	6.5	0.0	2.0
	294	0.3	6.3	0.0	1.5

295	0.2	6.0	0.0	1.5
296	0.2	6.0	0.0	1.0
297	0.2	5.8	0.0	1.5
298	0.2	5.5	0.0	1.5
299	0.2	5.3	0.0	2.0
300	0.2	5.3	0.0	2.0
301	0.2	5.0	0.0	1.5
302	0.2	5.0	0.0	2.0
303	0.2	4.8	0.0	1.0
304	0.2	4.8	0.0	1.5
305	0.2	4.6	0.0	1.5
306	0.2	4.6	0.0	1.5
307	0.2	4.5	0.0	1.5
308	0.2	4.6	0.0	1.5
309	0.2	4.5	0.0	1.5
310	0.2	4.5	0.0	1.5
311	0.8	19.5	0.0	1.5
312	3.3	83.5	0.0	1.0
313	4.2	104.3	0.0	1.0
314	4.4	110.3	0.0	1.0
315	4.5	111.5	0.0	1.5
316	4.5	111.8	0.0	1.5
317	4.5	112.3	0.0	1.0
318	2.2	54.0	0.0	1.5
319	0.5	13.5	0.1	36.0
320	0.3	7.5	0.3	174.0
321	0.2	5.3	0.4	223.5
322	0.2	4.8	0.5	245.0
323	0.2	4.6	0.5	249.0
324	0.2	4.6	0.5	250.0
325	0.2	4.5	0.5	249.0
326	0.2	4.8	0.4	202.5
327	0.2	4.3	0.1	44.0
328	0.2	4.3	0.0	12.0
329	0.2	4.5	0.0	5.0
330	0.2	4.0	0.0	3.0

Average NOx	Average CO
24.9	239.0



Start 4:24

Stop 5:30

Average NOx 23.0

Average CO 174.9

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FILE NAME:

LOGGING SESSION: START LOGGING @ ########
LAST SAMPLE @ ########

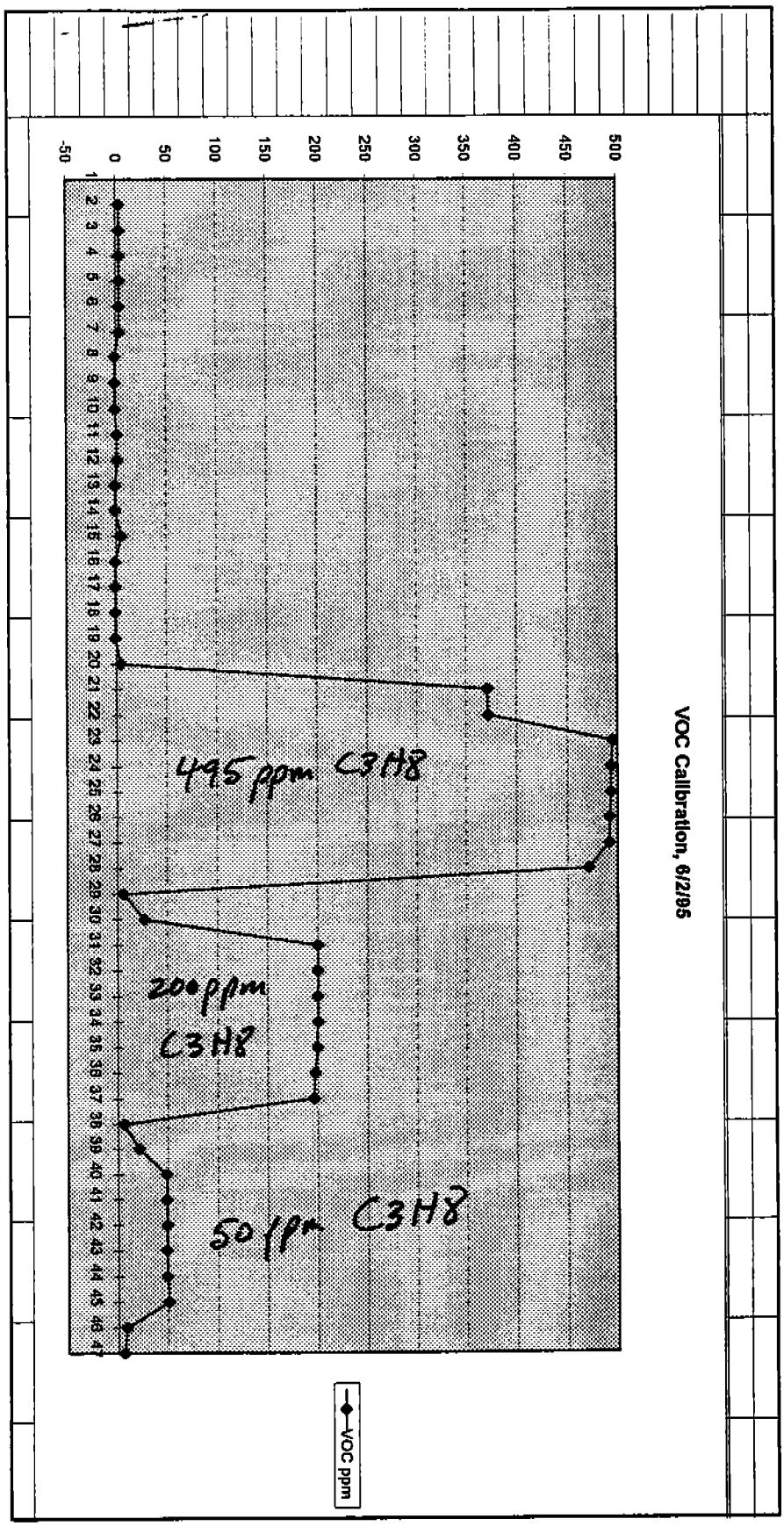
	ACTIVE C MODULE SAMPLE UNITS:	1B Voltage 15 sec Volts	NOx ppm	2A Voltage 15 sec Volts	CO ppm	2B Voltage 4 hrs Volts
	1	0.8	20.8	0.4	187.5	1.1
	2	0.9	21.3	0.4	200.0	
Start Run3 4:24						
	3	0.8	19.5	0.4	204.5	
	4	0.8	20.0	0.5	226.0	
	5	0.8	19.5	0.5	230.0	
	6	0.8	20.5	0.5	225.0	
	7	0.8	20.3	0.5	231.0	
	8	0.8	20.8	0.5	229.5	
	9	0.8	21.0	0.5	236.5	
	10	0.8	21.0	0.5	243.5	
	11	0.8	20.8	0.5	262.5	
	12	0.9	22.6	0.5	263.0	
	13	0.9	22.5	0.5	252.5	
	14	0.9	23.5	0.5	250.0	
	15	0.9	23.5	0.5	242.5	
	16	1.0	23.8	0.5	244.5	
	17	1.0	23.8	0.5	254.0	
	18	1.0	24.5	0.5	253.5	
	19	1.0	24.5	0.5	240.0	
	20	1.0	24.5	0.5	249.0	
	21	1.0	24.3	0.5	266.0	
	22	1.0	24.0	0.5	271.5	
	23	1.0	24.3	0.5	274.0	
	24	1.0	24.3	0.6	282.0	
	25	1.0	24.0	0.5	268.0	
	26	1.0	24.8	0.5	273.5	
	27	1.0	24.8	0.6	286.5	
	28	1.0	25.3	0.8	276.0	
	29	1.1	26.3	0.5	287.0	
	30	1.0	25.3	0.5	269.0	
	31	1.0	24.5	0.5	260.0	
	32	1.0	24.8	0.5	248.0	
	33	1.0	24.8	0.5	249.0	
	34	1.0	24.8	0.5	240.5	
	35	1.0	25.3	0.5	238.0	
	36	1.0	24.5	0.5	236.5	
	37	0.9	23.3	0.5	240.5	
	38	1.0	24.5	0.5	231.0	
	39	0.9	23.3	0.4	219.0	
	40	0.9	22.8	0.4	212.5	
	41	0.9	22.8	0.4	211.5	
	42	0.9	22.5	0.4	203.0	
	43	1.0	24.0	0.4	187.5	
	44	0.9	22.8	0.4	182.0	
	45	0.9	23.3	0.3	174.0	
	46	0.9	22.3	0.4	198.5	
	47	0.9	22.8	0.4	193.0	
	48	1.0	24.0	0.4	183.0	
	49	1.0	24.0	0.4	179.0	
	50	1.0	23.8	0.3	174.5	
	51	1.0	24.8	0.3	161.0	
	52	0.9	23.3	0.3	156.0	
	53	0.9	23.0	0.3	151.0	
	54	1.0	25.0	0.3	148.0	
	55	1.0	25.0	0.3	147.0	
	56	1.0	25.8	0.3	145.0	
	57	1.0	26.0	0.3	144.5	
	58	1.0	26.0	0.3	138.5	
	59	1.0	26.5	0.3	136.0	
	60	1.0	25.3	0.3	140.0	
	61	1.0	25.5	0.3	162.0	
	62	1.0	25.3	0.3	169.0	
	63	1.1	26.3	0.3	161.5	
	64	1.1	26.5	0.3	161.0	
	65	1.1	26.3	0.3	160.5	
	66	1.0	25.8	0.3	150.0	
	67	1.1	26.3	0.3	148.0	
	68	1.0	25.0	0.3	145.5	
	69	1.0	25.5	0.3	148.0	
	70	1.0	24.5	0.4	176.0	
	71	0.9	23.5	0.4	191.5	
	72	0.9	23.0	0.4	176.5	
	73	1.0	24.3	0.3	165.5	
	74	0.9	22.5	0.3	165.0	
	75	0.9	21.5	0.3	167.5	
	76	0.9	22.0	0.3	167.0	
	77	0.9	21.8	0.3	164.5	
	78	0.9	21.3	0.3	174.5	
	79	0.9	21.8	0.3	173.0	
	80	0.8	20.8	0.3	170.5	
	81	0.9	21.8	0.3	168.5	
	82	0.9	21.5	0.3	167.0	
	83	0.9	22.3	0.3	163.0	
	84	0.9	22.5	0.3	157.5	
	85	0.9	22.5	0.3	168.0	
	86	0.9	23.0	0.3	168.5	
	87	0.9	22.3	0.3	166.0	
	88	0.9	22.5	0.3	162.0	
	89	0.9	21.5	0.3	171.5	
	90	0.9	22.8	0.3	167.5	
	91	0.9	21.8	0.4	180.5	

92	0.9	21.5	0.4	191.5
93	0.9	21.5	0.4	198.0
94	0.9	22.0	0.4	194.0
95	0.9	21.5	0.4	194.5
96	0.9	22.3	0.4	191.0
97	0.9	23.5	0.4	187.5
98	0.9	22.0	0.4	187.5
99	0.9	22.8	0.4	179.5
100	0.9	22.5	0.3	172.0
101	0.9	22.0	0.3	169.5
102	1.0	24.0	0.3	169.0
103	0.9	23.5	0.3	170.5
104	0.8	22.3	0.3	171.0
105	0.9	23.5	0.3	171.5
106	0.9	23.0	0.3	169.5
107	0.9	22.8	0.3	166.0
108	1.0	23.8	0.3	162.5
109	1.0	24.8	0.3	158.0
110	0.9	23.5	0.3	159.5
111	0.9	22.5	0.3	165.5
112	1.0	23.8	0.3	169.0
113	0.9	22.5	0.3	174.5
114	0.9	21.5	0.3	171.5
115	0.9	22.3	0.3	168.0
116	0.9	23.5	0.3	161.0
117	0.9	22.8	0.3	161.5
118	0.9	23.5	0.3	158.5
119	0.9	23.5	0.3	156.5
120	1.0	25.3	0.3	159.0
121	1.0	25.0	0.3	167.5
122	1.1	26.3	0.3	161.5
123	1.0	25.0	0.3	160.0
124	1.0	24.8	0.3	160.0
125	1.1	27.0	0.3	153.5
126	1.0	26.0	0.3	150.0
127	1.0	24.5	0.3	149.5
128	1.0	26.0	0.3	149.5
129	1.0	25.8	0.3	150.0
130	1.0	24.5	0.3	155.5
131	1.0	25.0	0.3	163.0
132	1.0	23.8	0.3	161.5
133	1.0	24.8	0.3	154.0
134	1.0	24.5	0.3	155.5
135	0.9	23.3	0.3	158.0
136	0.9	23.3	0.3	163.0
137	0.9	22.5	0.3	162.0
138	1.0	24.5	0.3	156.5
139	0.9	23.3	0.3	160.5
140	0.9	22.0	0.3	168.0
141	1.0	23.8	0.3	164.5
142	0.9	23.3	0.3	164.5
143	0.9	21.3	0.3	168.0
144	0.9	22.3	0.3	170.0
145	0.9	23.3	0.3	170.5
146	0.9	22.8	0.4	175.5
147	0.9	23.0	0.3	170.0
148	1.0	23.8	0.3	166.0
149	1.0	24.5	0.3	162.0
150	0.9	22.8	0.3	162.0
151	0.9	21.3	0.3	157.5
152	0.9	21.8	0.3	154.5
153	0.9	22.0	0.3	159.0
154	0.9	23.0	0.3	151.0
155	0.9	23.5	0.3	149.0
156	0.9	22.0	0.3	148.0
157	1.0	24.0	0.3	150.0
158	0.9	22.8	0.3	154.0
159	0.8	20.0	0.3	165.0
160	0.8	20.5	0.3	170.0
161	0.8	21.0	0.3	164.0
162	0.8	20.8	0.3	170.5
163	0.8	20.5	0.3	173.0
164	0.8	20.8	0.3	168.0
165	0.8	20.3	0.3	172.5
166	0.8	19.8	0.4	179.5
167	0.8	20.3	0.4	181.5
168	0.8	20.5	0.4	177.0
169	0.8	20.3	0.4	179.5
170	0.8	20.5	0.4	182.5
171	0.8	20.5	0.4	178.5
172	0.9	21.3	0.4	175.0
173	0.8	20.8	0.3	174.5
174	0.8	20.8	0.4	176.0
175	0.8	20.3	0.4	178.5
176	0.8	19.8	0.4	179.0
177	0.8	20.5	0.3	170.5
178	0.8	20.3	0.3	160.0
179	0.8	20.8	0.3	158.5
180	0.9	22.5	0.3	162.0
181	0.9	22.8	0.3	160.5
182	0.9	22.5	0.3	155.5
183	0.9	21.3	0.3	153.5
184	0.9	22.5	0.3	163.0
185	0.9	22.5	0.3	164.5
186	0.9	22.8	0.3	161.5
187	1.0	24.0	0.3	152.5
188	1.0	24.8	0.3	147.0
189	1.0	24.8	0.3	144.0
190	1.0	26.0	0.3	138.0
191	1.0	25.3	0.3	136.0
192	1.0	25.8	0.3	134.5
193	1.0	25.0	0.3	137.5
194	1.1	26.3	0.3	140.5

	195	1.0	25.8	0.3	140.0
	196	1.1	26.3	0.3	140.5
	197	1.0	25.8	0.3	138.5
	198	1.0	25.8	0.3	141.0
	199	1.0	25.5	0.3	142.0
	200	1.0	25.0	0.3	138.5
	201	1.1	26.3	0.3	137.5
	202	1.1	26.8	0.3	137.5
	203	1.1	26.5	0.3	144.0
	204	1.1	27.5	0.3	140.5
	205	1.1	26.5	0.3	138.5
	206	1.1	26.5	0.3	136.0
	207	1.1	26.5	0.3	132.5
	208	1.1	26.8	0.3	129.0
	209	1.1	27.5	0.3	129.5
	210	1.1	27.0	0.3	131.5
	211	1.1	27.3	0.3	129.5
	212	1.1	27.8	0.3	131.0
	213	1.1	27.5	0.3	134.5
	214	1.1	26.8	0.3	136.0
	215	1.1	26.5	0.3	138.5
	216	1.0	26.0	0.3	142.0
	217	1.0	25.8	0.3	145.5
	218	1.0	25.5	0.3	148.5
	219	1.0	25.3	0.3	148.5
	220	1.0	26.0	0.3	147.0
	221	1.0	25.3	0.3	152.5
	222	1.0	24.5	0.3	156.0
	223	0.9	22.3	0.3	156.0
	224	0.9	21.3	0.3	156.5
	225	0.9	23.0	0.3	158.0
	226	0.9	22.8	0.3	155.0
	227	0.8	20.5	0.3	160.5
	228	0.8	20.8	0.3	162.5
	229	0.8	20.5	0.3	158.5
	230	0.8	19.0	0.3	160.0
	231	0.8	19.5	0.3	160.0
	232	0.8	20.5	0.3	163.0
	233	0.8	18.8	0.3	164.5
	234	0.8	19.5	0.3	162.5
	235	0.8	18.8	0.3	160.0
	236	0.7	18.3	0.3	165.0
	237	0.8	19.5	0.3	163.0
	238	0.7	18.5	0.3	167.0
	239	0.8	19.5	0.3	163.0
	240	0.7	18.0	0.3	164.5
	241	0.7	16.3	0.4	177.0
	242	0.7	17.0	0.3	173.5
	243	0.7	17.8	0.3	173.5
	244	0.7	18.5	0.3	171.0
	245	0.7	17.5	0.4	176.5
	246	0.7	16.8	0.4	180.0
	247	0.7	17.5	0.4	187.5
	248	0.7	17.5	0.4	195.5
	249	0.7	18.0	0.4	196.5
	250	0.8	19.0	0.4	194.0
	251	0.8	19.0	0.4	190.0
	252	0.8	19.0	0.4	182.5
	253	0.5	12.5	0.2	89.0
Stop Run3 5:30					
	254	0.3	8.5	0.1	25.5
	255	0.3	7.0	0.0	8.5
	256	0.3	6.8	0.0	1.5
	257	0.3	6.3	0.0	-2.5
	258	0.2	5.8	0.0	-3.0
	259	0.2	5.5	0.0	6.5
	260	0.2	5.8	0.0	3.0
	261	0.2	6.0	0.0	3.5
	262	3.1	77.5	0.0	3.0
	263	4.0	100.5	0.0	1.0
	264	4.4	109.3	0.0	1.0
	265	4.5	112.8	0.0	1.0
	266	4.6	114.3	0.0	1.0
	267	4.6	115.3	0.0	1.0
	268	4.6	115.5	0.0	1.0
	269	4.6	115.5	0.0	0.5
	270	4.6	115.5	0.0	1.0
	271	1.8	43.8	0.0	1.0
	272	0.7	16.3	0.0	1.0
	273	0.4	9.0	0.3	126.5
	274	0.3	7.0	0.4	204.5
	275	0.3	7.0	0.5	233.0
	276	0.3	6.8	0.5	243.5
	277	0.3	6.5	0.5	248.0
	278	0.3	6.5	0.5	248.5
	279	0.3	6.5	0.6	248.5
	280	0.3	6.3	0.5	247.5
	281	0.3	6.3	0.5	228.5
	282	0.3	6.3	0.1	66.0
	283	0.2	5.3	0.0	22.0
	284	0.2	5.3	0.0	8.5
	285	0.2	5.0	0.0	3.5
	286	0.2	5.0	0.0	2.5

Average NOx	Average CO
23.0	174.9

Dryer #1

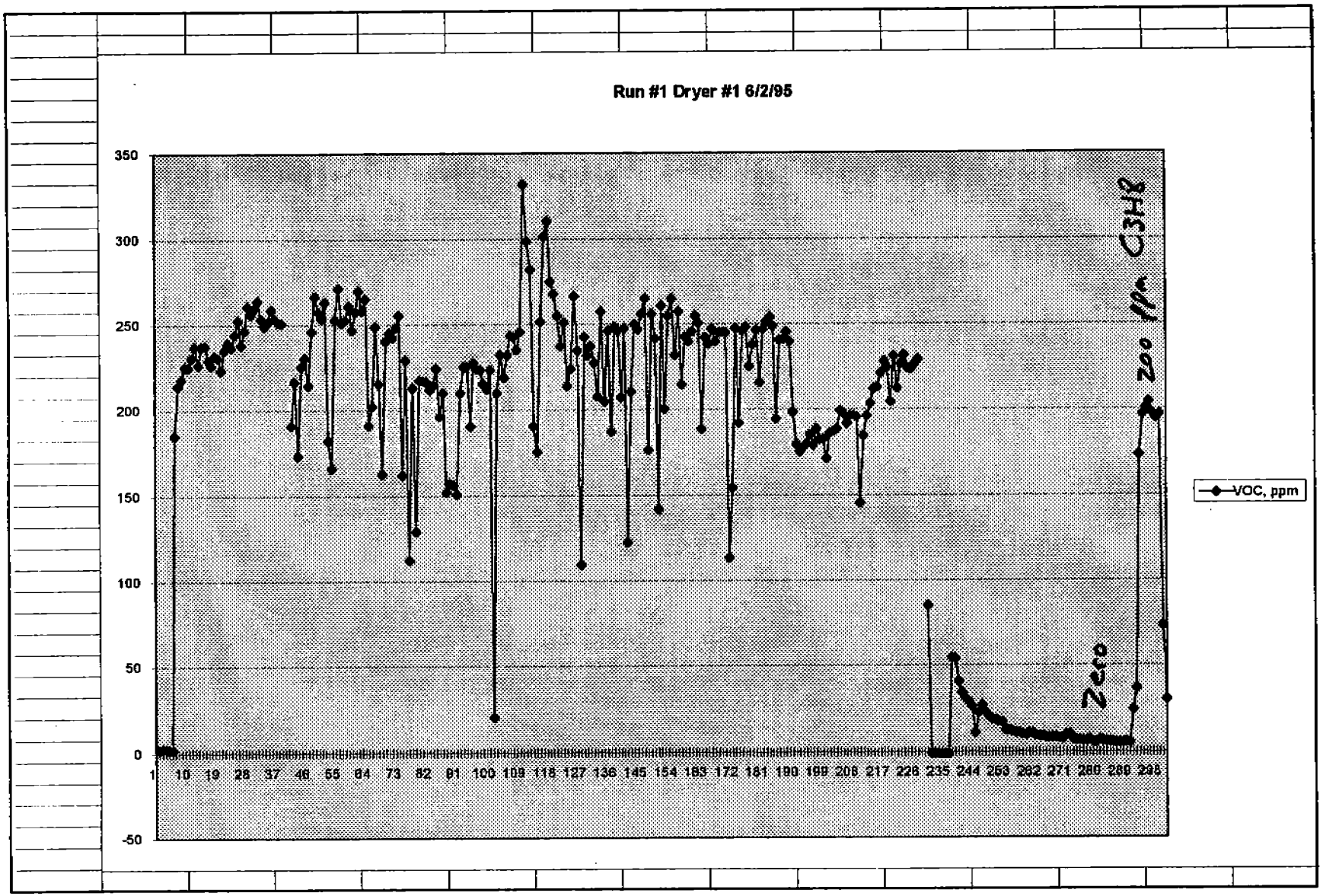


Page 1

FILE NAM a:voccal

LOGGING 1

ACTIVE C	1A	
MODULE	Voltage	
SAMPLE	15 sec	
UNITS:	Volts	VOC ppm
1	0.1	3.5
2	0.1	3.5
3	0.1	3.5
4	0.1	3.5
5	0.1	3.5
6	0.1	3.5
7	0.0	-1
8	0.0	-1
9	0.0	-1
10	0.0	0.5
11	0.0	1
12	0.0	-1
13	0.0	-1
14	0.1	5
15	0.0	-1
16	0.0	-1
17	0.0	-1
18	0.0	-1
19	0.1	4
20	7.4	371
21	7.5	372.5
22	9.9	495
23	9.9	494
24	9.9	493.5
25	9.9	492.5
26	9.8	492
27	9.4	471
28	0.1	6.5
29	0.5	27
30	4.0	200.5
31	4.0	200
32	4.0	200
33	4.0	200
34	4.0	199.5
35	4.0	197.5
36	3.9	196.5
37	0.1	6
38	0.4	21.5
39	1.0	49
40	1.0	49
41	1.0	49
42	1.0	49
43	1.0	49.5
44	1.0	51
45	0.2	8.5
46	0.1	6.5



Average VOC 220.62

74

Start 8:30

STOP - ~~9:35~~ 9:35

FILE NAM e:voc1

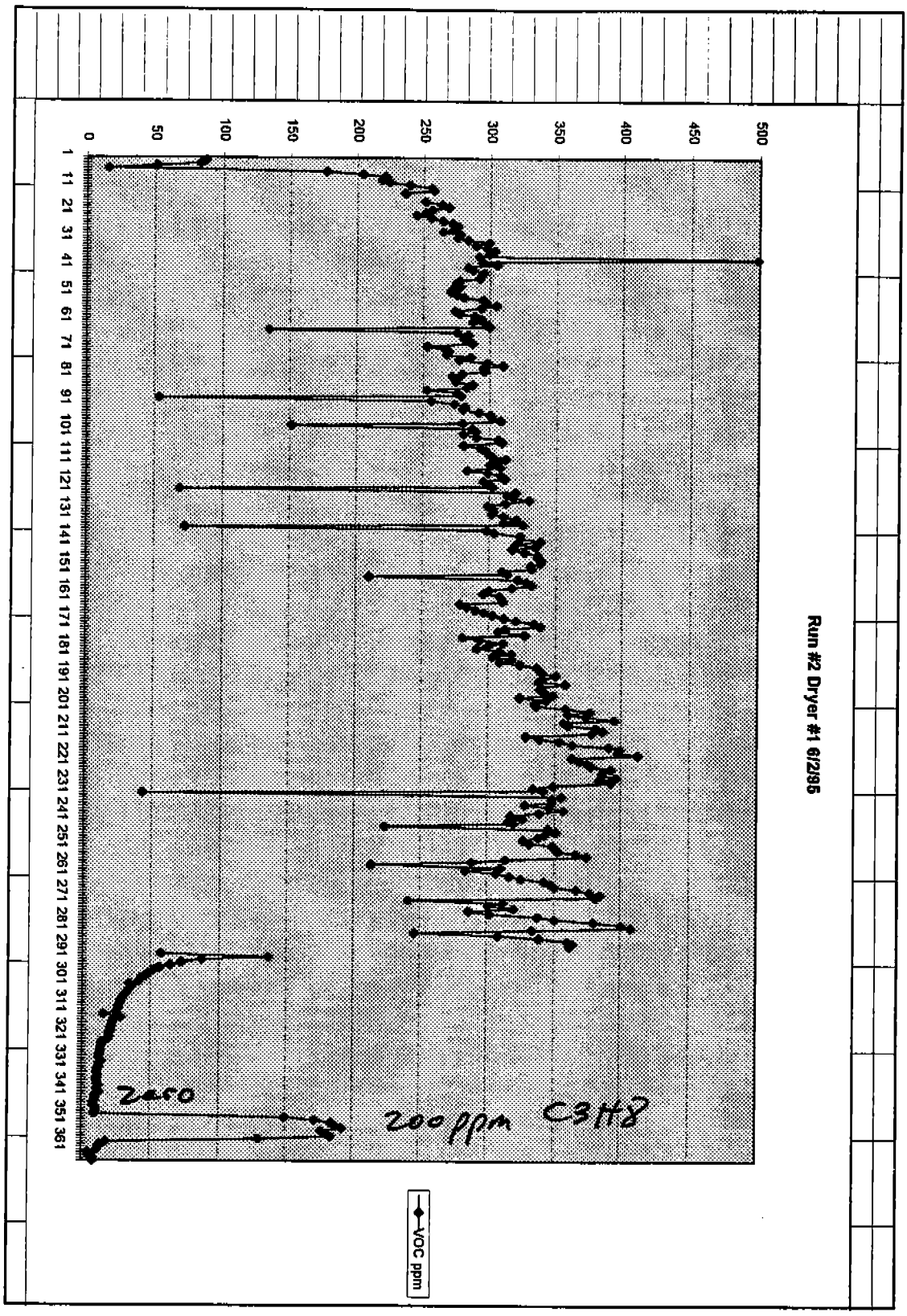
LOGGING 1

	ACTIVE C	1A	
	MODULE	Voltage	
	SAMPLE	15 sec	
	UNITS:	Volts	VOC, ppm
	1	0.0	2
	2	0.1	2.5
	3	0.1	2.5
	4	0.0	2
	5	0.0	2
	6	3.7	185
	7	4.3	214
	8	4.4	218
	9	4.5	225.5
	10	4.5	225
	11	4.6	230.5
	12	4.7	237
	13	4.5	226.5
	14	4.7	237
	15	4.8	237.5
	16	4.6	229
	17	4.5	226
	18	4.6	231.5
	19	4.6	230.5
	20	4.5	223.5
	21	4.7	235
	22	4.8	239
	23	4.7	236.5
	24	4.9	244
	25	5.1	252.5
	26	4.8	238
	27	4.9	246.5
	28	5.2	261
	29	5.1	256
	30	5.2	259.5
	31	5.3	264
	32	5.1	253.5
	33	5.0	249
	34	5.0	251.5
	35	5.2	259
	36	5.1	253.5
	37	5.0	251.5
	38	5.0	251
Start Run1 8:30			
	47	3.8	191
	48	4.3	215.5
	49	3.5	173.5
	50	4.5	225.5
	51	4.6	230.5
	75	4.3	214.5
	76	4.9	246
	77	5.3	266.5
	78	5.2	257.5
	79	5.1	253.5
	80	5.3	263
	84	3.6	182
	85	3.3	166
	86	5.1	253
	87	5.4	271.5
	88	5.0	251
	89	5.1	252.5
	90	5.2	261
	91	4.9	247
	92	5.2	257.5
	93	5.4	270
	94	5.2	258
	95	5.3	265
	97	3.8	191
	100	4.0	202
	101	5.0	249
	102	4.3	215.5
	106	3.3	163
	112	4.8	240
	113	4.9	245
	114	4.8	242
	115	5.0	248
	116	5.1	255.5
	117	3.2	162
	118	4.6	228
	119	2.3	112.5
	120	4.3	213
	121	2.6	129.5
	122	4.4	217.5
	123	4.3	217
	124	4.3	216.5
	125	4.2	212
	126	4.3	214.5
	127	4.5	224
	128	3.9	198
	129	4.2	210
	130	3.0	152
	131	3.1	157
	132	3.1	156.5
	133	3.0	151
	134	4.2	210
	135	4.5	225.5
	136	4.5	225.5

138	3.8	190.5
139	4.6	227.5
141	4.5	224
142	4.5	223.5
143	4.3	215.5
144	4.2	212
145	4.5	223.5
146	0.4	20.5
147	4.2	210
148	4.6	232
150	4.4	219
151	4.6	232
152	4.9	243.5
153	4.9	242.5
154	4.7	235
155	4.9	245.5
156	6.6	331.5
157	6.0	299
158	5.7	282.5
159	3.8	190.5
171	3.5	175.5
172	5.0	251.5
173	6.0	301.5
174	6.2	310.5
176	5.5	275
177	5.4	268
178	5.1	255
179	4.7	237
180	5.0	251
181	4.3	214
182	4.5	224
183	5.3	266.5
184	4.7	234.5
185	2.2	109.5
186	4.9	242.5
187	4.6	231.5
197	4.7	237
198	4.6	227.5
199	4.2	208
200	5.2	257.5
201	4.1	205
202	4.9	246
203	3.7	187
204	5.0	248.5
205	4.9	246
206	4.2	207.5
207	5.0	247.5
208	2.5	122.5
211	4.2	210.5
212	5.0	250
213	4.9	247
214	5.1	256
215	5.3	265
218	3.5	176.5
219	5.1	256
220	4.8	241.5
221	2.8	142
222	5.2	261
223	4.0	200.5
224	5.1	255
225	5.3	265
226	4.6	231.5
228	5.2	257.5
229	4.3	214.5
230	4.9	242.5
231	4.8	239.5
232	4.9	245.5
233	5.1	255
234	5.0	250.5
235	3.8	188.5
237	4.8	242
238	4.8	238.5
239	4.9	247
240	4.8	239.5
241	4.9	245
242	4.9	245
243	4.9	245
244	2.3	113.5
245	3.1	154.5
246	5.0	247.5
247	3.8	192
248	4.9	246
249	5.0	248
250	4.6	225
251	4.8	238
252	4.9	248.5
253	4.3	216
254	4.9	247
255	5.0	251.5
256	5.1	254
257	5.0	249
258	3.9	194.5
259	4.8	240.5
260	4.8	241
261	4.9	245.5
262	4.8	239.5
270	4.0	198.5
271	3.6	179.5
272	3.5	175
273	3.6	178
274	3.6	180
275	3.7	185
276	3.6	179

	277	3.8	188.5
	278	3.7	182.5
	279	3.7	182.5
	280	3.4	171.5
	281	3.7	186
	282	3.7	187
	283	3.8	188.5
	284	4.0	199
	285	3.9	197
	286	3.8	191.5
	287	3.9	196
	288	3.9	196
	289	3.9	195.5
	290	2.9	145.5
	291	3.7	184.5
	292	3.9	196
	293	4.1	203.5
	294	4.2	212
	295	4.3	213
	296	4.4	221
	297	4.5	228
	298	4.5	224.5
	299	4.1	204.5
	300	4.6	231
	301	4.3	212.5
	302	4.5	226.5
	303	4.6	231.5
	304	4.5	224
	305	4.5	223.5
	306	4.5	226
	307	4.6	229
Stop Run 1 10:35			Average VOC 220.628
	308	1.7	85
	309	0.0	-1
	310	0.0	-1
	311	0.0	-1
	312	0.0	-1
	313	0.0	-1
	314	0.0	-1
	315	1.1	54.5
	316	1.1	54
	317	0.8	40.5
	318	0.7	34
	319	0.6	31
	320	0.6	29
	321	0.5	26
	322	0.2	11
	323	0.5	22.5
	324	0.5	26.5
	325	0.5	22.5
	326	0.4	20
	327	0.4	19
	328	0.4	18
	329	0.4	17.5
	330	0.3	17
	331	0.3	12.5
	332	0.3	12.5
	333	0.2	12
	334	0.2	11
	335	0.2	11
	336	0.2	10.5
	337	0.2	10
	338	0.2	11
	339	0.2	10.5
	340	0.2	9.5
	341	0.2	9
	342	0.2	9
	343	0.2	8.5
	344	0.2	8.5
	345	0.2	8.5
	346	0.2	8.5
	347	0.2	8
	348	0.2	7.5
	349	0.2	10
	350	0.2	10.5
	351	0.1	7
	352	0.1	7
	353	0.1	7
	354	0.1	6.5
	355	0.1	6.5
	356	0.1	7
	357	0.1	6
	358	0.1	6
	359	0.1	7
	360	0.1	6.5
	361	0.1	6
	362	0.1	6
	363	0.1	6
	364	0.1	5.5
	365	0.1	5.5
	366	0.1	5.5
	367	0.1	6
	368	0.1	5.5
	369	0.5	24
	370	0.7	36.5
	371	3.5	173
	372	3.9	197
	373	4.0	201
	374	4.1	204.5
	375	4.0	197.5
	376	3.9	194.5
	377	3.9	197

378	1.5	73.5
379	0.6	30



start
10:13

STOP
11:20

Average 310.6

Sheet1

Page 1

FILE NAM a:voc2

LOGGING 1

	ACTIVE C	1A	
	MODULE	Voltage	
	SAMPLE	15 sec	
	UNITS:	Volts	VOC ppm
	1	1.7	87.0
	2	1.7	83.0
	3	1.0	51.5
	4	0.3	16.0
	5	3.5	177.0
	6	4.1	204.0
	7	4.4	220.5
	8	4.4	218.5
	9	4.5	224.0
	10	4.8	239.5
	11	5.1	256.0
	12	5.2	257.5
	13	4.7	236.0
Start Run2 10:13			
	14	5.0	251.0
	15	5.3	263.5
	16	5.4	269.0
	17	5.1	256.5
	18	5.0	251.5
	19	4.9	245.0
	20	5.1	255.5
	21	5.3	264.5
	22	5.4	271.5
	23	5.5	275.5
	24	5.5	272.5
	25	5.3	264.5
	26	5.6	278.0
	27	5.5	275.5
	28	5.7	283.5
	29	6.0	299.5
	30	5.8	289.5
	31	6.0	297.5
	32	6.1	303.0
	33	6.0	299.5
	34	5.8	291.5
	35	10.0	499.0
	36	5.9	294.5
	37	6.1	305.0
	38	5.7	283.5
	39	5.8	287.5
	40	5.9	295.5
	41	5.9	293.5
	42	5.9	292.5
	43	5.5	277.0
	44	5.5	274.5
	45	5.6	278.0
	46	5.4	272.0
	47	5.4	270.5
	48	5.5	275.5
	49	5.6	280.5
	50	5.9	295.0
	51	5.8	295.5
	52	6.1	304.5
	53	5.9	293.5
	54	5.5	274.0
	55	5.6	277.5
	56	5.8	289.0
	57	5.9	293.5
	58	5.8	287.5
	59	5.9	297.0
	60	6.0	300.0
	61	2.7	134.5
	62	5.5	275.5
	63	5.7	284.0
	64	5.6	280.5
	65	5.7	284.5
	66	5.7	287.0
	67	5.1	253.0
	68	5.3	265.0
	69	5.4	269.5
	70	5.4	267.5
	71	5.7	286.0
	72	5.5	277.0
	73	6.0	298.0
	74	6.2	309.5
	75	5.9	295.0
	76	5.9	296.0
	77	5.6	278.5
	78	5.4	271.5
	79	5.6	275.5
	80	5.5	274.5
	81	5.8	287.5
	82	5.7	283.0
	83	5.1	253.0
	84	5.5	275.5
	85	5.6	278.5
	86	1.1	53.5
	87	5.1	256.0
	88	5.5	273.5
	89	5.6	281.5
	90	5.6	280.0
	91	5.8	292.0

92	6.0	300.5
93	6.0	301.5
94	6.2	308.0
95	5.6	280.0
96	3.0	151.0
97	5.8	287.5
98	5.8	290.0
99	5.6	280.5
100	5.8	290.5
101	6.1	305.5
102	6.2	309.5
103	5.6	281.0
104	5.9	293.5
105	6.0	297.5
106	6.0	298.5
107	6.1	302.5
108	6.3	312.5
109	6.1	306.5
110	6.0	300.5
111	6.2	308.0
112	5.7	283.5
113	6.0	299.0
114	6.2	308.5
115	6.2	311.5
116	5.9	296.0
117	6.0	298.5
118	6.1	302.5
119	1.4	68.5
120	6.4	319.5
121	6.3	313.0
122	6.4	318.0
123	6.6	329.5
124	6.3	312.5
125	6.0	299.0
126	6.1	302.5
127	6.1	303.5
128	6.0	302.0
129	6.2	311.0
130	6.4	320.0
131	6.2	311.0
132	6.5	325.5
133	1.5	72.5
134	6.0	298.5
135	6.1	304.0
136	6.5	323.0
137	6.5	323.5
138	6.8	336.5
139	6.4	320.0
140	6.7	334.5
141	6.4	317.5
142	6.5	326.5
143	6.7	336.0
144	6.7	336.0
145	6.8	339.0
146	6.8	338.5
147	6.6	331.0
148	6.6	332.0
149	6.2	310.0
150	6.3	314.0
151	4.2	210.0
152	6.4	321.5
153	6.6	328.0
154	6.6	332.0
155	6.4	317.5
156	6.0	300.5
157	5.9	296.5
158	6.2	308.0
159	6.2	309.5
160	6.2	310.5
161	5.6	278.5
162	5.7	284.0
163	5.8	290.6
164	5.9	296.6
165	6.1	303.0
166	6.2	311.6
167	6.4	320.6
168	6.7	334.0
169	6.8	338.5
170	6.3	312.5
171	6.2	307.5
172	6.5	327.0
173	5.6	281.0
174	5.9	294.0
175	6.2	311.0
176	6.0	300.0
177	5.8	291.5
178	6.2	308.5
179	6.4	317.6
180	6.1	303.5
181	6.4	317.5
182	6.2	308.5
183	6.5	323.5
184	6.7	336.0
185	6.8	338.5
186	6.8	340.5
187	7.0	350.5
188	6.8	340.5
189	6.8	337.5
190	7.2	357.5
191	6.8	339.5
192	6.8	339.0
193	6.8	342.0
194	7.0	348.5

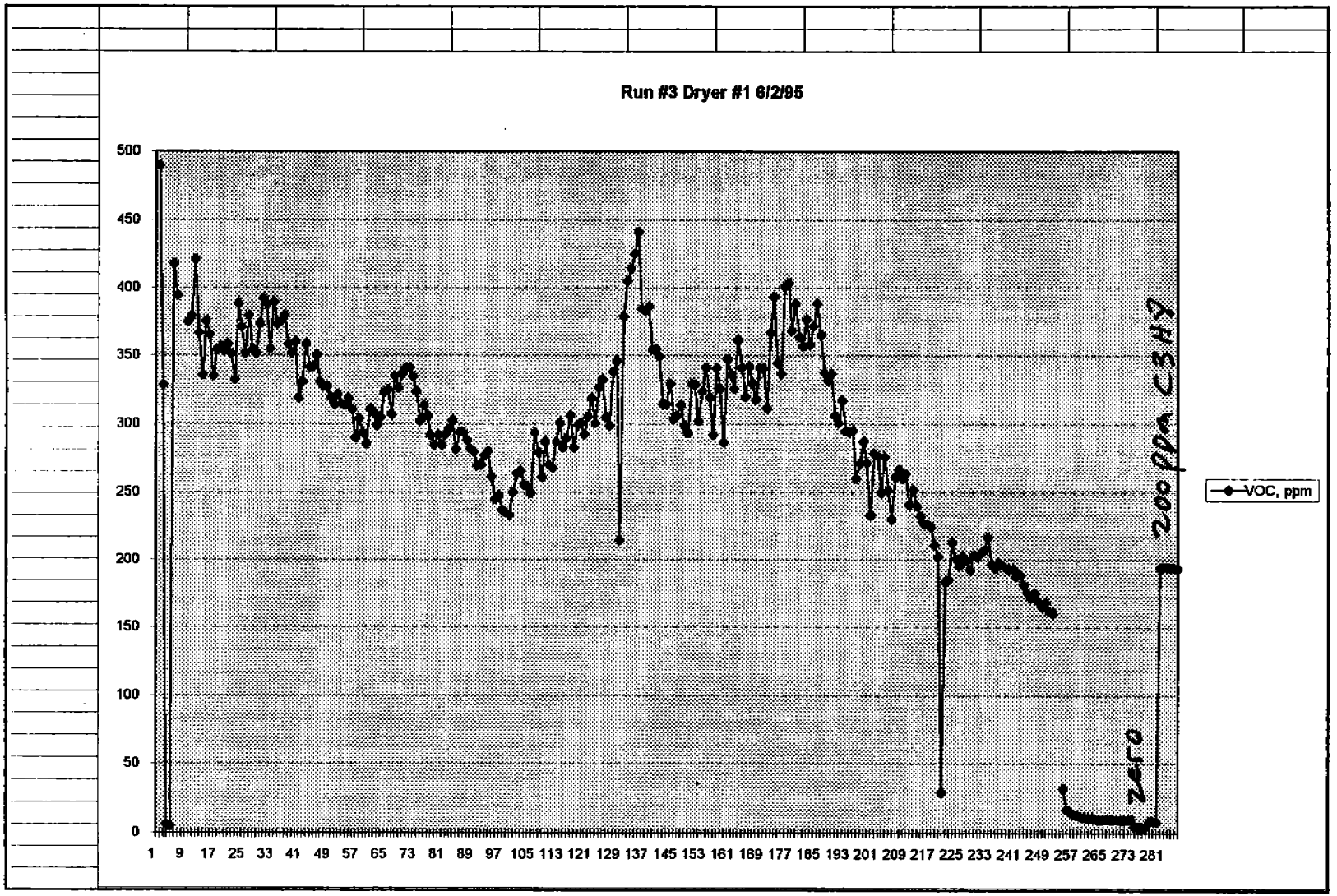
195	6.5	323.5
196	6.9	343.5
197	6.7	335.0
198	6.7	336.0
199	7.2	358.5
200	7.5	376.5
201	7.2	360.0
202	7.5	373.5
203	7.9	395.0
204	7.1	357.0
205	7.2	360.6
206	7.6	380.6
207	7.7	385.5
208	7.6	378.0
209	6.6	328.5
210	6.8	338.5
211	7.1	353.5
212	7.3	363.5
213	7.8	391.0
214	8.0	399.0
215	8.0	397.5
216	8.3	412.5
217	7.3	363.0
218	7.4	369.0
219	7.5	375.0
220	7.6	377.5
221	7.9	392.6
222	7.7	386.5
223	7.7	386.0
224	7.9	396.5
225	7.7	383.5
226	7.9	392.5
227	7.0	349.0
228	6.7	334.0
229	6.8	341.5
230	0.9	43.6
231	7.1	356.6
232	7.0	348.0
233	7.0	348.0
234	6.6	328.0
235	6.9	346.0
236	7.1	357.0
237	6.8	339.0
238	6.4	317.5
239	6.6	326.5
240	6.3	316.0
241	6.4	319.5
242	4.5	223.0
243	6.9	345.5
244	7.0	351.0
245	6.9	342.5
246	6.8	338.0
247	6.5	327.0
248	6.6	331.6
249	7.0	349.0
250	7.0	350.5
251	7.1	352.5
252	7.3	366.6
253	7.5	374.6
254	6.3	314.0
255	5.8	289.0
256	4.3	213.5
257	6.2	310.6
258	5.7	284.5
259	6.1	307.0
260	6.3	317.0
261	6.5	325.6
262	6.9	342.5
263	7.0	347.5
264	7.0	350.5
265	7.3	367.0
266	7.5	377.0
267	7.7	385.0
268	7.6	381.5
269	4.8	241.0
270	6.2	312.0
271	6.0	301.0
272	6.4	320.0
273	5.7	285.5
274	6.1	302.5
275	6.8	337.5
276	7.0	350.5
277	7.6	380.0
278	8.0	400.5
279	8.2	408.0
280	6.7	334.0
281	4.9	248.0
282	6.2	308.6
283	6.8	339.0
284	7.2	360.5
285	7.3	364.0
286	7.2	362.0

Stop Run2
11:20

Average VOC
310.6

287	1.2	57.5
288	2.7	138.5
289	1.7	87.0
290	1.4	72.0
291	1.3	64.0
292	1.1	56.5
293	1.0	52.0
294	1.0	48.5
295	0.9	46.0

296	0.9	43.0
297	0.8	41.5
298	0.7	35.0
299	0.7	36.0
300	0.7	34.0
301	0.7	33.0
302	0.6	31.0
303	0.6	29.5
304	0.6	28.5
305	0.6	28.0
306	0.5	27.0
307	0.5	26.5
308	0.5	25.5
309	0.3	16.0
310	0.6	28.5
311	0.5	23.5
312	0.5	22.5
313	0.4	22.0
314	0.4	21.0
315	0.4	21.0
316	0.4	20.0
317	0.4	20.0
318	0.4	19.0
319	0.3	14.5
320	0.3	14.5
321	0.3	14.0
322	0.3	14.0
323	0.3	13.5
324	0.3	13.0
325	0.3	13.0
326	0.3	14.5
327	0.3	13.0
328	0.3	12.5
329	0.2	11.5
330	0.2	11.0
331	0.2	12.0
332	0.2	11.0
333	0.2	11.0
334	0.2	11.5
335	0.3	12.5
336	0.2	11.0
337	0.3	13.0
338	0.2	10.5
339	0.2	10.0
340	0.2	9.5
341	0.2	9.0
342	0.2	9.0
343	0.2	10.5
344	0.2	10.5
345	0.2	9.5
346	3.0	149.5
347	3.4	172.0
348	3.7	184.5
349	3.8	187.5
350	3.9	192.5
351	3.5	177.0
352	3.6	181.5
353	3.7	184.0
354	2.6	130.0
355	0.4	18.0
356	0.3	13.5
357	0.3	12.5
358	0.2	11.5
359	0.1	5.0
360	0.1	5.5
361	0.2	9.0
362	0.2	8.5



Average 299.3 ppm

84

FILE NAM a:voc3

LOGGING 1 ########
########

	ACTIVE C	1A	
	MODULE	Voltage	
	SAMPLE	15 sec	
	UNITS:	Volts	VOC, ppm
	1	9.8	489.5
	2	6.6	328.5
	3	0.1	6.0
	4	0.1	5.0
	5	8.4	418.0
	6	7.9	394.5
Start Run 3 11:45			
	7	7.5	375.0
	8	7.6	379.5
	9	8.4	421.0
	10	7.3	367.0
	11	6.7	335.5
	12	7.5	376.5
	13	7.3	365.5
	14	6.7	335.0
	15	7.1	354.0
	16	7.1	356.5
	17	7.1	353.0
	18	7.2	358.5
	19	7.0	351.0
	20	6.6	332.0
	21	7.8	388.5
	22	7.4	371.0
	23	7.0	352.0
	24	7.6	379.5
	25	7.1	354.5
	26	7.0	351.5
	27	7.5	373.5
	28	7.9	392.5
	29	7.8	388.5
	30	7.1	355.0
	31	7.8	389.5
	32	7.5	373.6
	33	7.5	376.5
	34	7.6	379.6
	35	7.2	358.5
	36	7.0	352.0
	37	7.2	360.6
	38	6.4	319.0
	39	6.6	330.5
	40	7.2	356.5
	41	6.8	341.5
	42	6.8	342.0
	43	7.0	350.0
	44	6.6	330.5
	45	6.6	327.5
	46	6.5	327.0
	47	6.4	319.5
	48	6.3	314.5
	49	6.4	321.5
	50	6.3	315.0
	51	6.3	313.5
	52	6.4	318.5
	53	6.2	310.5
	54	5.8	290.5
	55	6.1	304.0
	56	5.9	294.0
	57	5.7	286.0
	58	6.2	311.0
	59	6.2	308.5
	60	6.0	299.0
	61	6.1	306.0
	62	6.5	323.0
	63	6.5	326.0
	64	6.1	307.0
	65	6.7	335.0
	66	6.5	328.0
	67	6.7	336.5
	68	6.8	341.0
	69	6.8	341.0
	70	6.7	334.5
	71	6.5	323.5
	72	6.1	302.5
	73	6.3	313.5
	74	6.1	306.0
	75	5.8	292.0
	76	5.7	285.0
	77	5.8	292.0
	78	5.7	285.0
	79	5.9	293.0
	80	5.9	298.6
	81	6.1	303.0
	82	5.6	282.0
	83	5.9	294.5
	84	5.9	294.0
	85	5.8	288.5
	86	5.7	282.5
	87	5.6	280.0
	88	5.4	270.0
	89	5.4	270.5
	90	5.6	277.5
	91	5.6	280.5

92	5.2	261.5
93	4.9	245.0
94	5.0	247.5
95	4.7	237.0
96	4.7	235.0
97	4.7	233.5
98	5.0	250.0
99	5.3	264.0
100	5.3	266.0
101	5.1	256.5
102	5.1	254.5
103	5.0	249.5
104	5.9	294.0
105	5.6	280.0
106	5.2	261.0
107	5.8	287.5
108	5.4	270.5
109	5.4	268.0
110	5.8	287.5
111	6.0	301.0
112	5.7	283.0
113	5.8	290.0
114	6.1	306.5
115	5.7	283.0
116	6.0	299.5
117	6.0	301.0
118	5.9	293.0
119	6.1	305.5
120	6.4	318.5
121	6.0	301.0
122	6.5	326.5
123	6.6	332.0
124	6.1	305.0
125	6.0	299.0
126	6.8	338.0
127	6.9	345.5
128	4.3	214.5
129	7.6	379.0
130	8.1	405.0
131	8.3	414.5
132	8.6	426.0
133	8.8	441.0
134	7.7	384.6
135	7.7	383.0
136	7.7	386.0
137	7.1	354.0
138	7.1	355.0
139	7.0	349.0
140	6.3	315.0
141	6.3	314.5
142	6.6	329.0
143	6.1	304.0
144	6.1	306.5
145	6.3	313.5
146	6.0	299.0
147	5.9	294.0
148	6.6	329.0
149	6.6	328.5
150	6.1	302.5
151	6.5	323.5
152	6.8	341.0
153	6.4	319.5
154	5.9	292.5
155	6.8	340.5
156	6.5	325.5
157	5.7	287.0
158	6.9	347.0
159	6.7	336.0
160	6.5	325.5
161	7.2	361.5
162	6.8	341.0
163	6.4	320.0
164	6.8	342.0
165	6.6	330.0
166	6.4	318.0
167	6.8	341.0
168	6.8	340.5
169	6.2	311.5
170	7.3	367.0
171	7.9	393.5
172	6.9	344.0
173	6.7	336.5
174	8.0	401.0
175	8.1	403.5
176	7.4	368.5
177	7.8	388.5
178	7.3	364.0
179	7.1	357.0
180	7.5	376.5
181	7.2	358.0
182	7.4	372.0
183	7.8	388.5
184	7.3	366.0
185	6.7	337.0
186	6.6	331.5
187	6.7	336.5
188	6.1	306.5
189	6.0	301.0
190	6.3	317.0
191	5.9	295.0
192	5.9	294.5
193	5.9	296.5
194	5.2	260.5

	195	5.4	271.5	
	196	5.8	288.0	
	197	5.4	272.0	
	198	4.7	233.5	
	199	5.6	279.0	
	200	5.5	277.0	
	201	5.0	250.0	
	202	5.5	276.5	
	203	5.0	251.5	
	204	4.6	230.5	
	205	5.2	261.5	
	206	5.3	267.0	
	207	5.2	260.0	
	208	5.3	264.0	
	209	4.8	241.0	
	210	5.0	252.0	
	211	4.8	240.5	
	212	4.7	232.5	
	213	4.6	227.5	
	214	4.5	227.0	
	215	4.5	224.5	
	216	4.2	211.0	
	217	4.1	202.5	
	218	0.6	29.5	
	219	3.7	183.5	
	220	3.7	185.0	
	221	4.3	213.0	
	222	4.0	200.5	
	223	3.9	195.5	
	224	4.1	202.5	
	225	4.0	199.5	
	226	3.9	192.5	
	227	4.1	203.5	
	228	4.0	202.0	
	229	4.1	205.0	
	230	4.1	207.0	
	231	4.3	217.0	
	232	3.9	197.0	
	233	3.9	194.0	
	234	4.0	197.5	
	235	3.9	196.5	
	236	3.9	194.0	
	237	3.9	193.0	
	238	3.9	193.0	
	239	3.8	188.0	
	240	3.8	188.5	
	241	3.6	181.5	
	242	3.5	175.5	
	243	3.4	171.5	
	244	3.5	175.0	Average VOC
	245	3.4	169.5	299.3
	246	3.3	165.0	
	247	3.4	168.5	
	248	3.2	162.0	
	249	3.2	160.5	
Stop Run#3 12:45				
	250	0.6	32.0	
	251	0.3	17.0	
	252	0.3	15.5	
	253	0.3	14.0	
	254	0.3	13.0	
	255	0.2	12.0	
	256	0.2	11.5	
	257	0.2	11.0	
	258	0.2	11.0	
	259	0.2	10.5	
	260	0.2	10.0	
	261	0.2	10.0	
	262	0.2	10.0	
	263	0.2	10.0	
	264	0.2	9.5	
	265	0.2	10.0	
	266	0.2	9.5	
	267	0.2	9.5	
	268	0.2	9.5	
	269	0.2	10.0	
	270	0.1	5.0	
	271	0.1	4.5	
	272	0.1	4.5	
	273	0.1	4.5	
	274	0.2	8.5	
	275	0.2	9.0	
	276	0.2	8.5	
	277	3.9	194.0	
	278	3.9	194.5	
	279	3.9	194.5	
	280	3.9	194.0	
	281	3.9	194.0	
	282	3.9	193.5	
	283	3.9		

(Dryer #2)

LP corrigan
#2 Inlet 6/11/15
CO

Run 1 (10:25 – 11:33)	Run 2 (2:45 – 3:45)	Run 3 (4:27 – 5:27)
11	12	14
9	12.5	14
10	12	13
10.5	14	13
14	15.5	11
10.5	16.5	8
10.5	18.5	7
13	14.5	12
10	11	10
10.5	11	9
10.5	12	8
7	10	10
8.5	10	9
4	10	9
12	10	9
15	13	7
12	12	13.5
11.5	11.5	12
9.5	11.5	9
11	10	10
10.5	11	8
11	14	8.5
10.5	11.5	9
9	10	8
9	10	12
10	10	10
11	11	7
281 ÷ 27	11.5	8
→ 10.4 × 5	13	9
→ 52.04 ppm	12.5	10
	(352 ÷ 30) – 0.5	287 ÷ 30
	→ 11.23 × 5	→ 9.567 × 5
	→ 56.17 ppm	→ 47.83 ppm

Dupe #2

LP Corrigan
#2 Inlet 6/1/95
NOX
2:45 - 3:45

	Run 1	Run 2	Run 3
DATA		14	24
		14	26
		17	27
		13	25
		12	26
NO		15	32
		17	28
		17	27
GOOD		18	27
		22	25
		21	29
DATA		17	27
		19	29
POOR		17	29
		15	27
		15	32
		16	30
		15	27
SENSITIVITY		14	32
		12	30
		6	28
		14	31
		14	28
		14	34
		14	31
		13.5	29
		13.5	29
		11	33
		10	29
		11	32
LOST POWER		(441 ÷ 30) - 1	(887 ÷ 30) = 2
		→ 13.7 × 1.35	→ 26.96 × 1.07
		→ 18.49 ppm	→ 28.84 ppm
		18.49	

Dynetz

8:30 - 9:34

LP Corrigan #2 Inlet NOX 6/2/95

Run 1	Run 2	Run 3
29	24	27
27	24	26
29	23	25
28	26	27
27	24	30
27	24	30
25	25	29
28	22	29
27	21	29
25	22	27
25	23	30
29	22	29
25	19	31
24	19	30
22	17	32
23	15	33
24	16	27
23	18	27
15	18	285
12	20	31
18	15	29
17	17	27
18	23	26
27	23	28
24	24	31
24	19	28
24	23	27
23	27	32
24	21	31
(660 ÷ 30) - 0.5	24	807.5 ÷ 30
21.95 X .977	21	
→ 21.44 ppm	26	26.91 x .977
	(685 ÷ 27) ÷ .5	26.29 ppm
	20.25 ppm	

(Duct #2)
8:30 - 9:12

LP Corrigan
#2 Inlet 6/2/95
VOC
10:13 - 11:23

Run 1		Run 2		Run 3	
22	23	19	23	14	24
14	12	23	23	16	27
8	20	23	23	15	29
5	14	24	23	17	27
4	18.5	23	23.5	16	27
4	10	23	20	16	27
3	14	24	24	15	27
4	8	25	24	15	28
3	6	23	26	17	30
3	16	26	25	18	30
6	26	25	22.5	18	30
5	25	25	25	18	29
6	24	28	23	17	30
2.5	26	26	23	19	31
3	23	26	22	20	30
3	23	29	21	21	32
2.5	22	29	21	22	33
2	22	28	22	22	29
2	4.5	29	22	24.5	29
2.5	20	29	23	22	29
4	23	28	23	23	29
4	23	29	23.5	23	29
4	22	26.5	23.5	24	27
4.5	23	28	23.5	24	26
6		26	23	24	26
4		25	21	23	28
7		24	20.5	22	27
10		25	20.5	25	27
20		26		25	25
21		23		26	23

(632 ÷ 54)

1381 ÷ 58) - 0.5

1448.5 ÷ 60

11.7 x 10

23.31 x 10

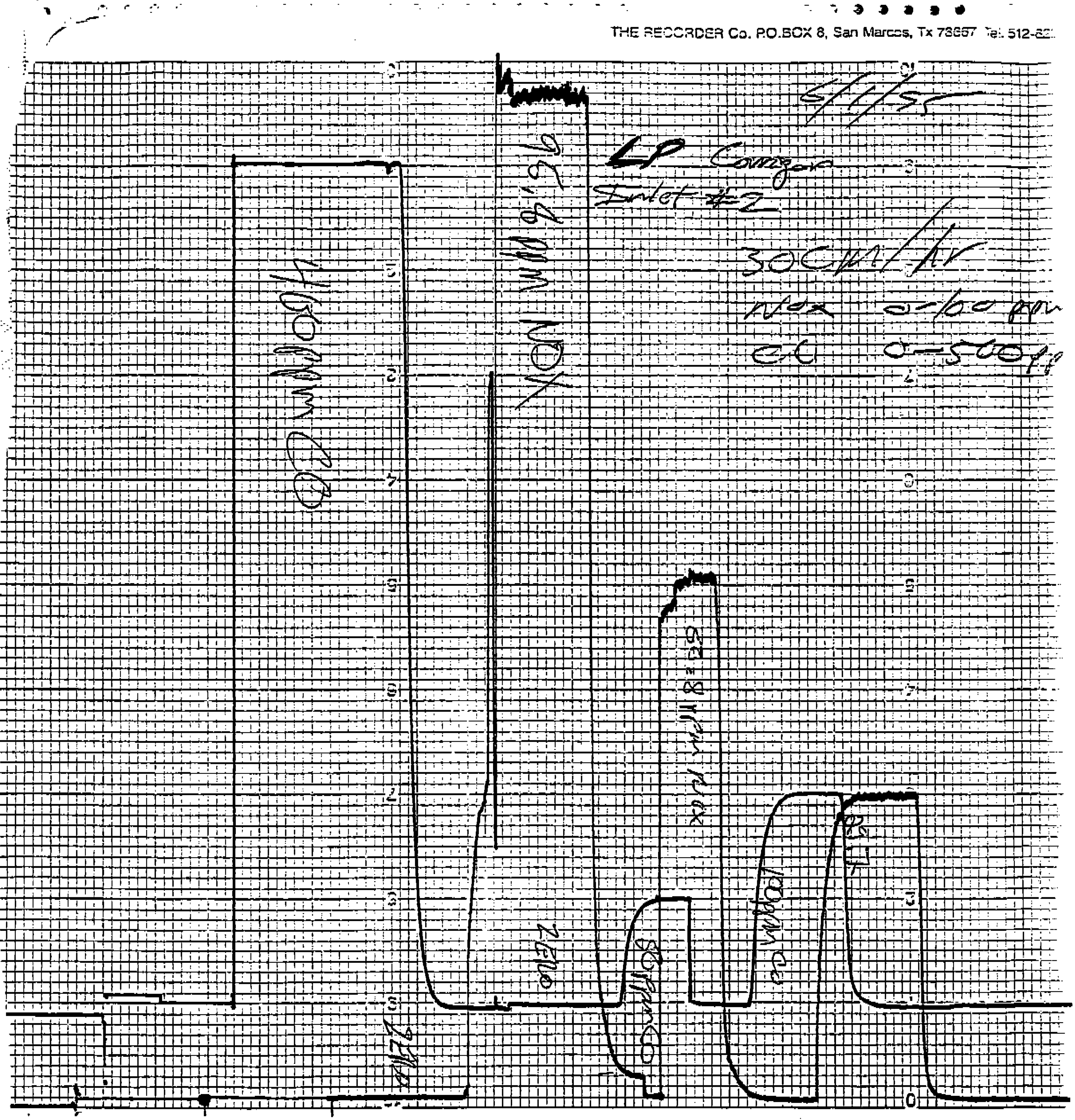
24.14 x 10.81

117.04 ppm

233.1 ppm

260.97 ppm

THE RECORDER Co. P.O.BOX 8, San Marcos, Tx 78667 Tel. 512-...



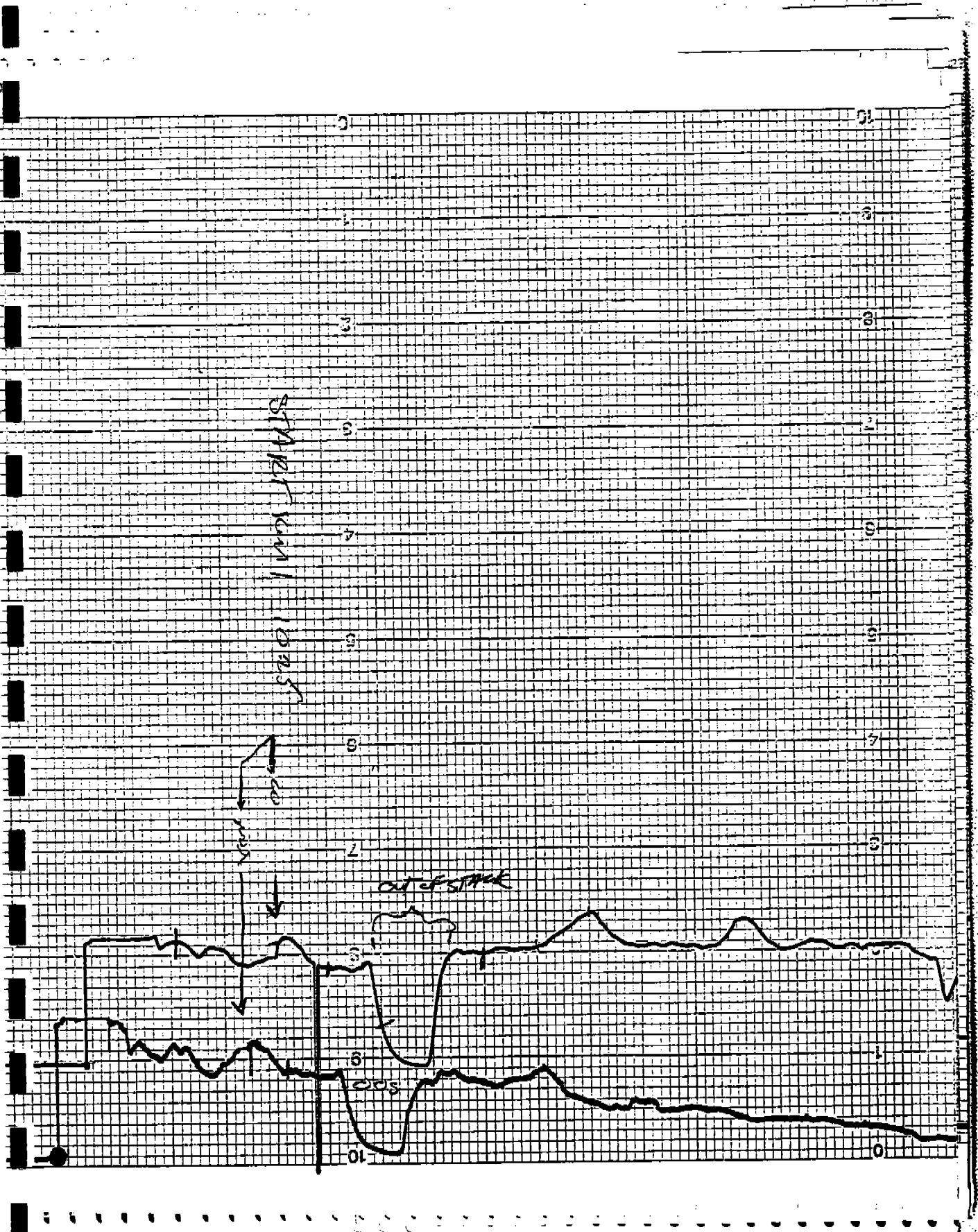
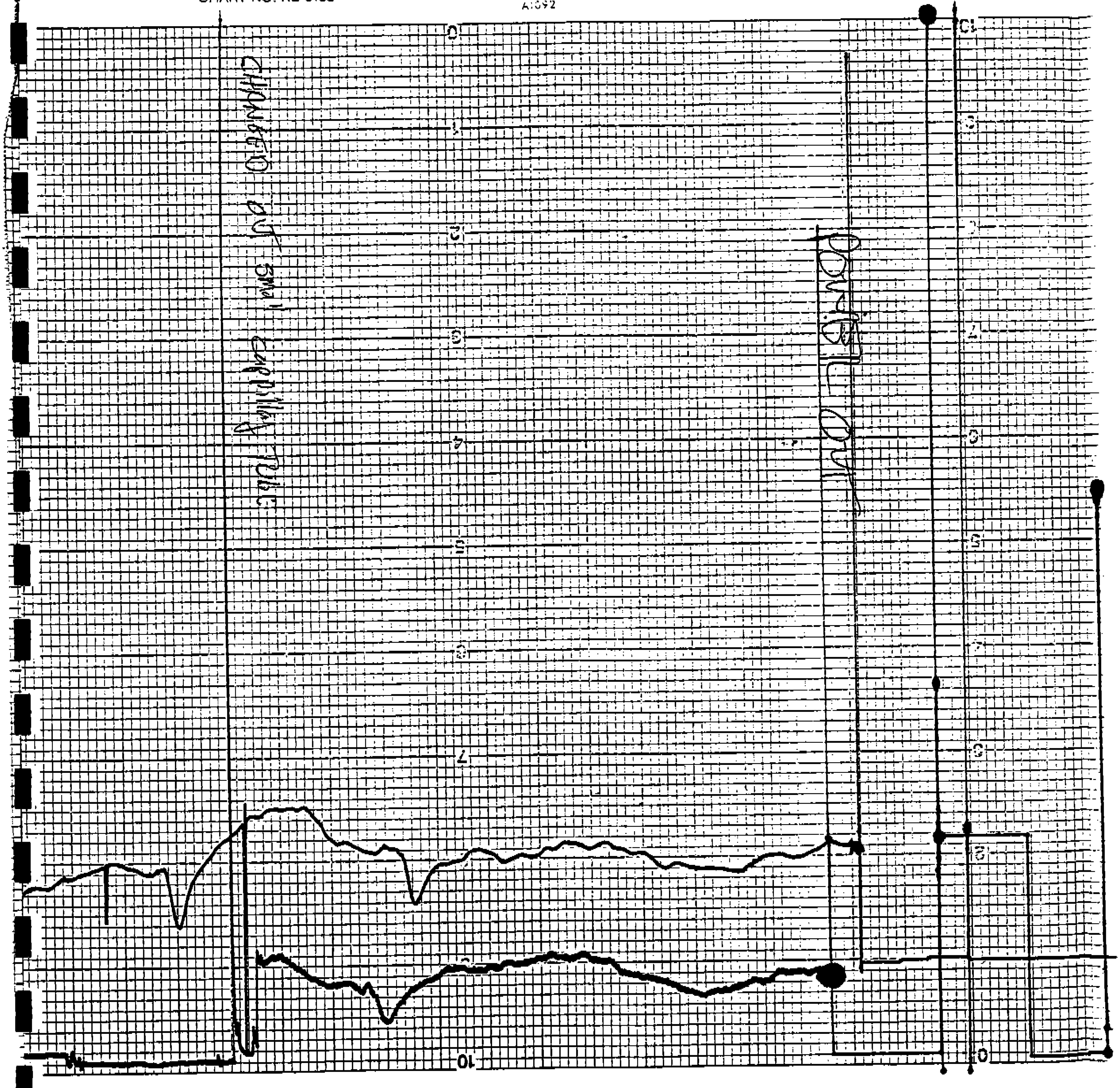
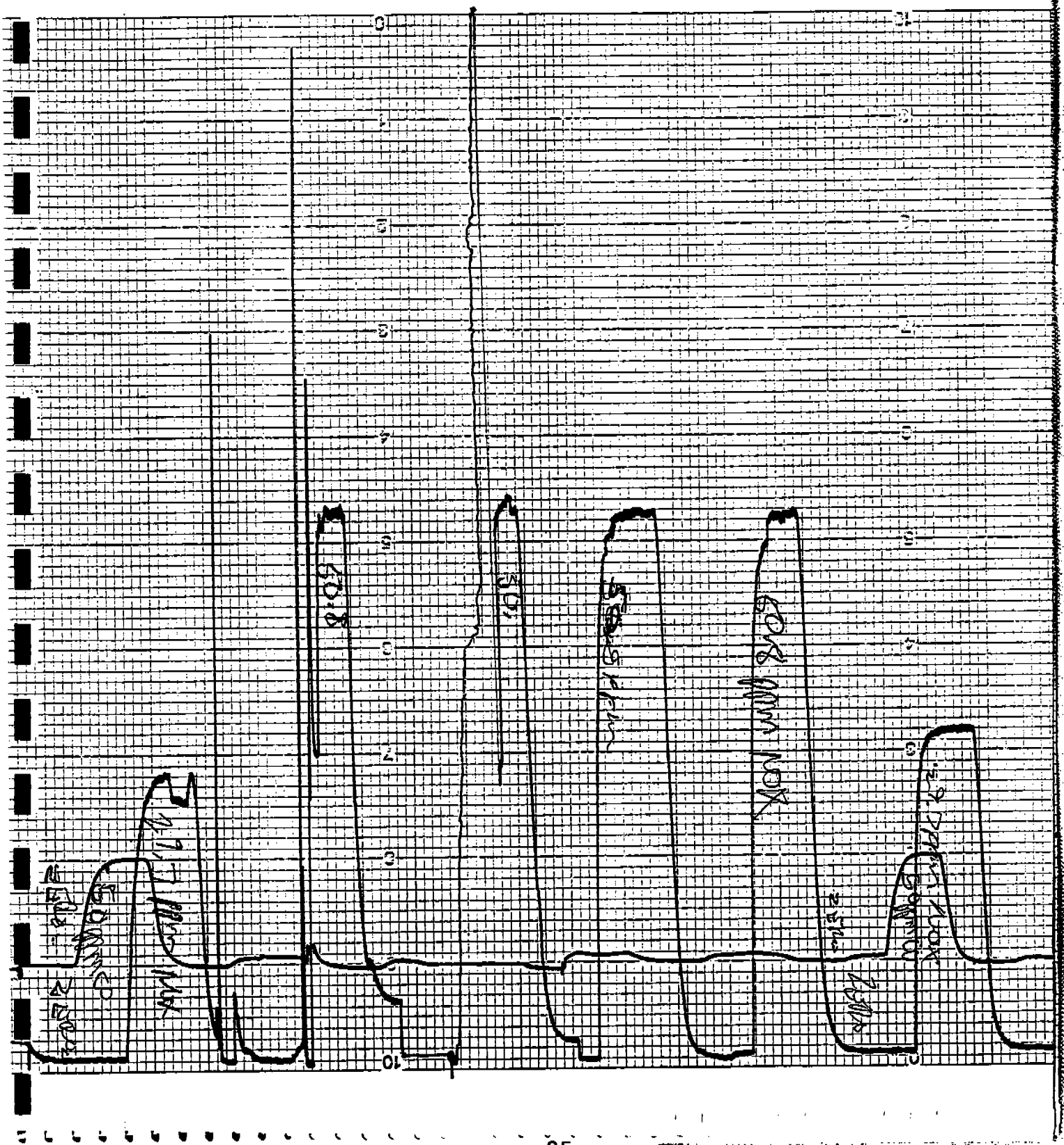

OUT OF STEP

CHART NO. RC-3135





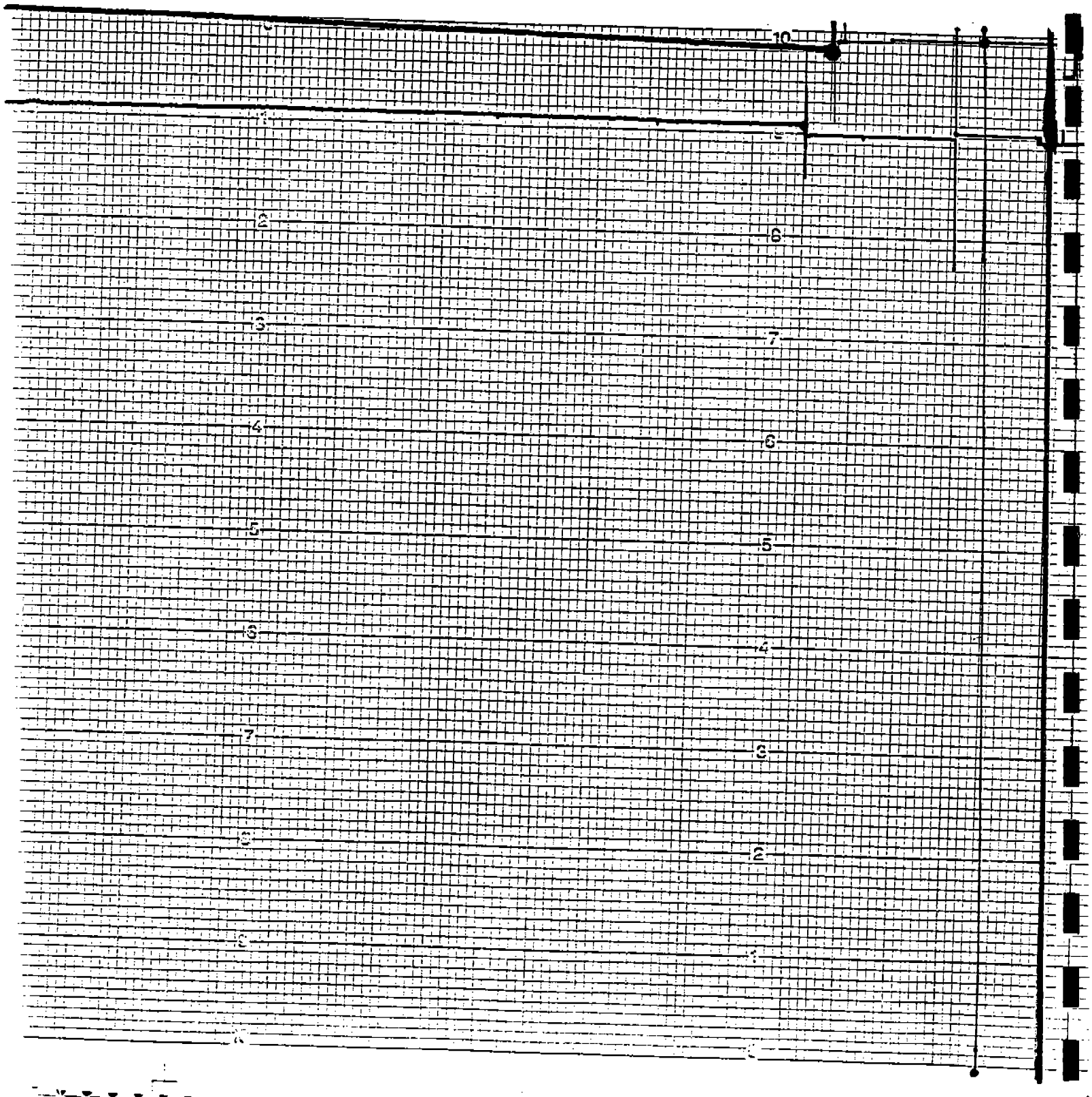
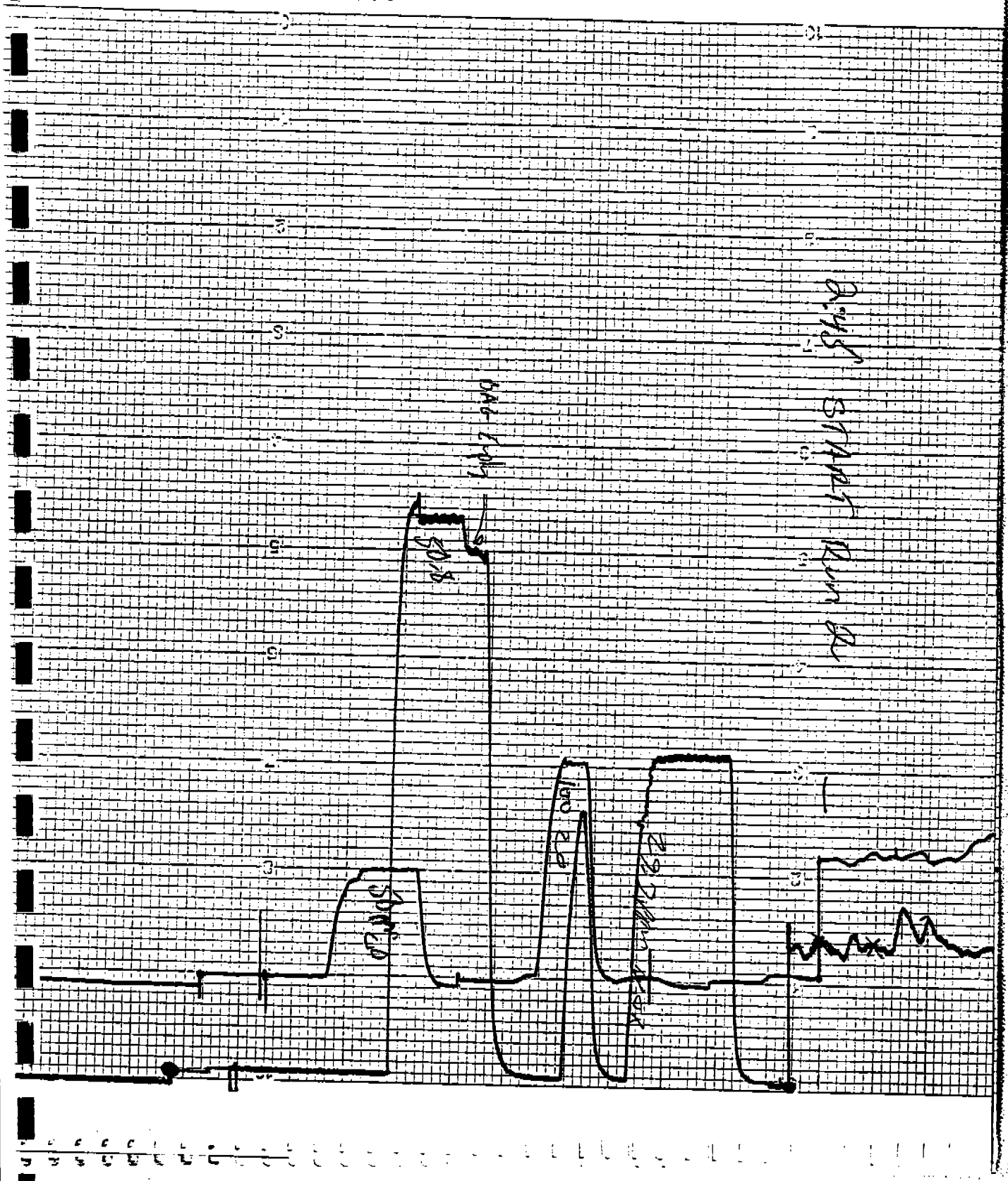
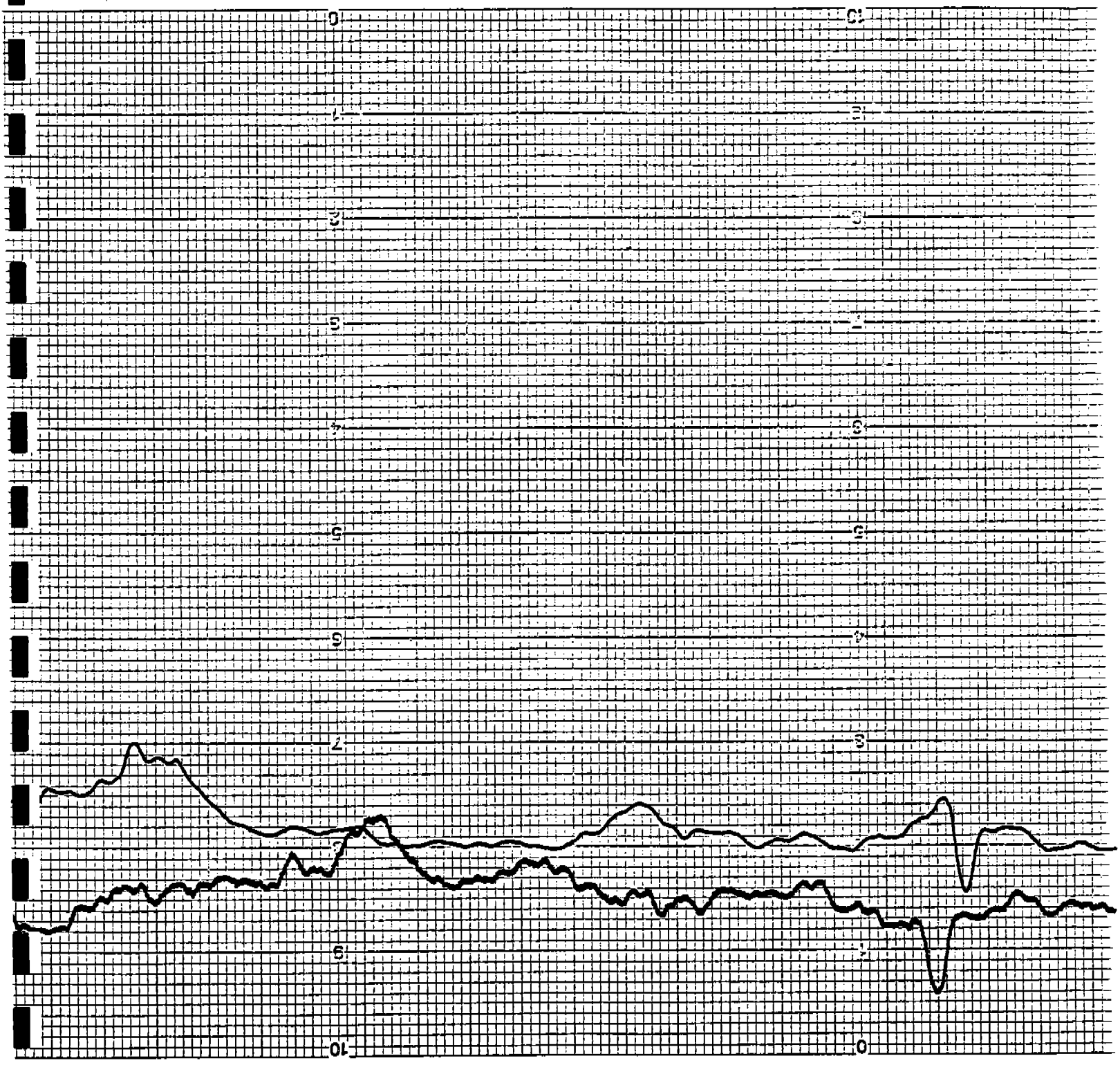


CHART NO. RC-31C5



THE RECORDER Co. P.O.BOX 8, San Marcos, Tx 78667 Tel 512-6291400



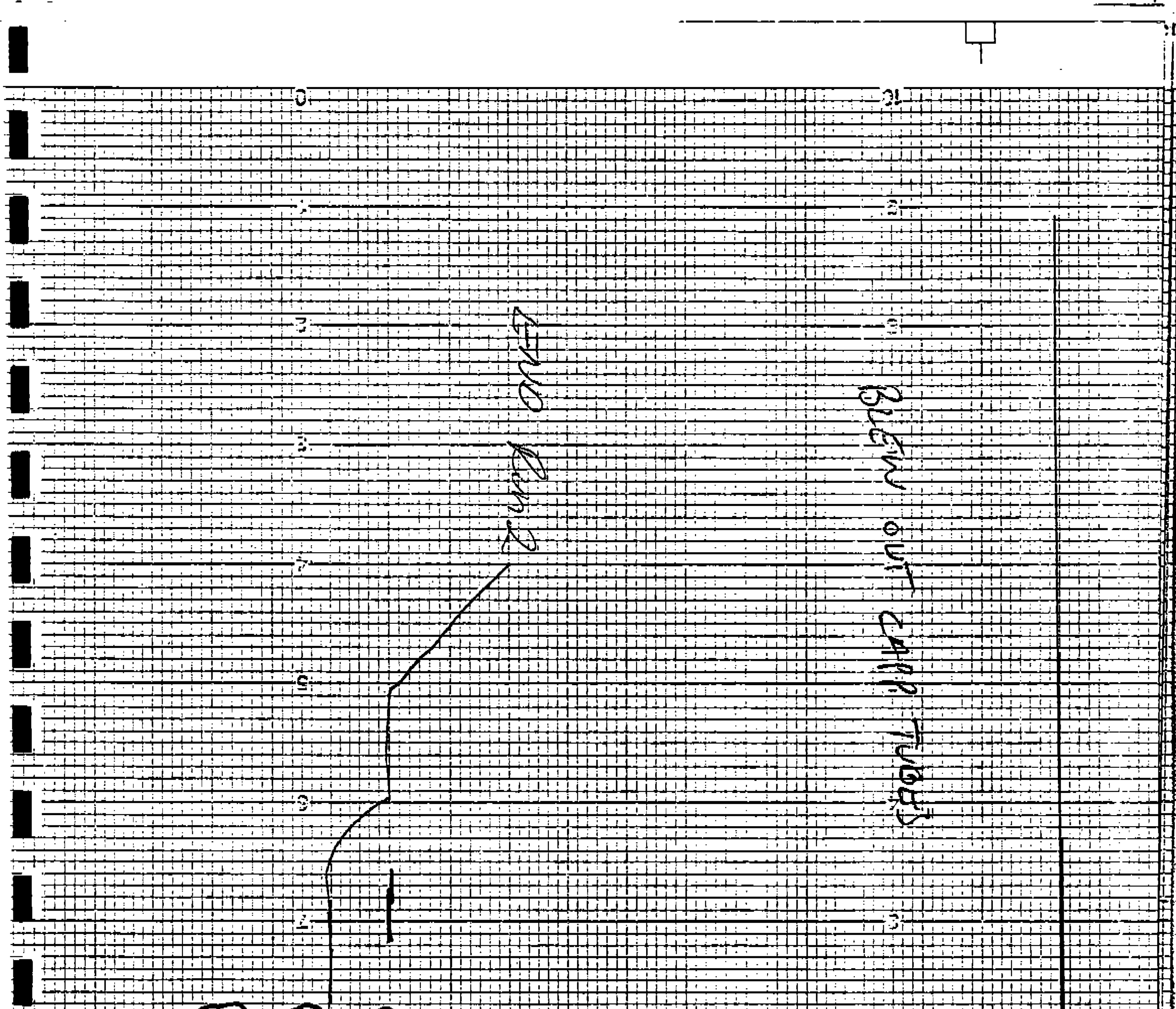
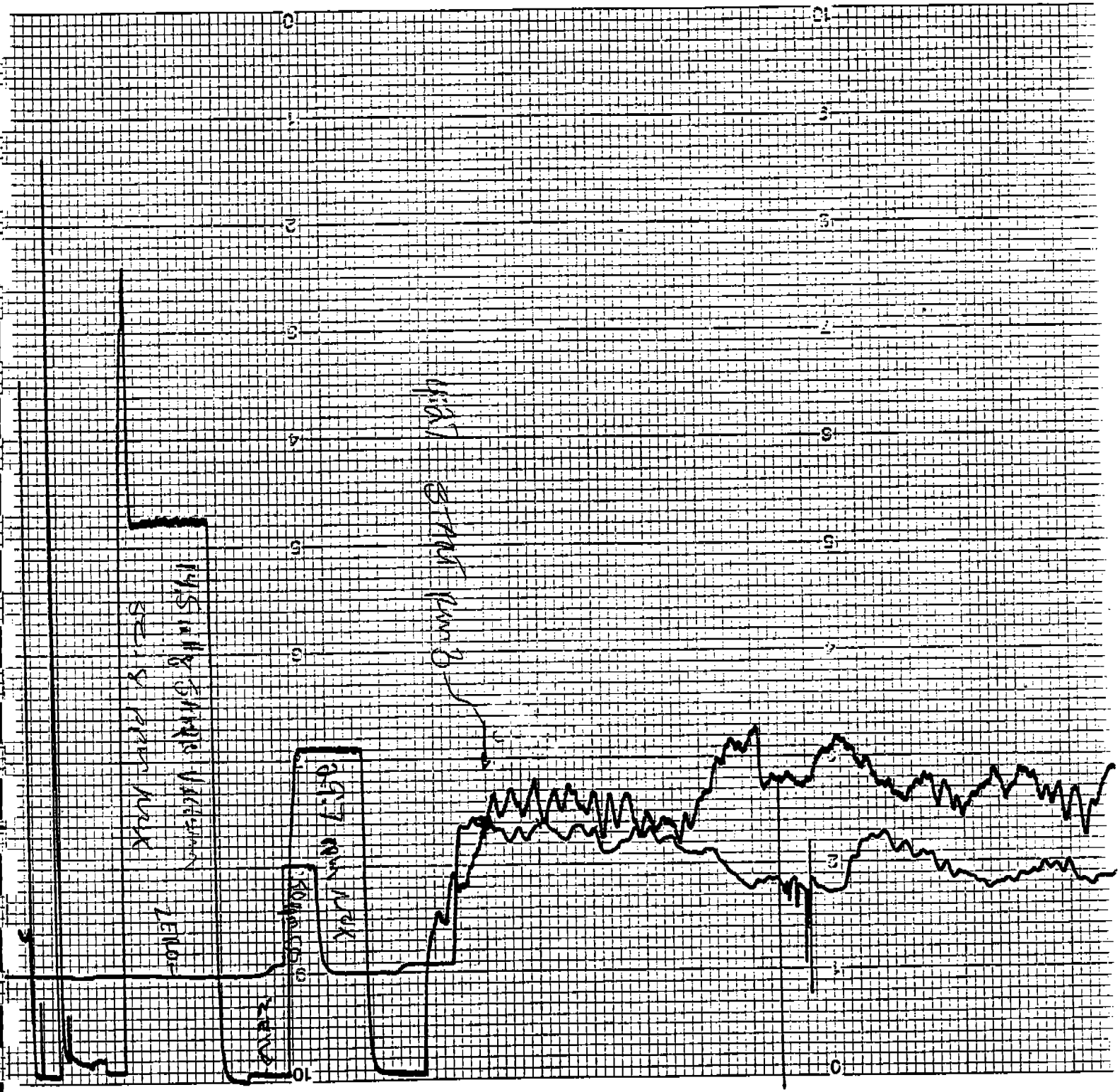
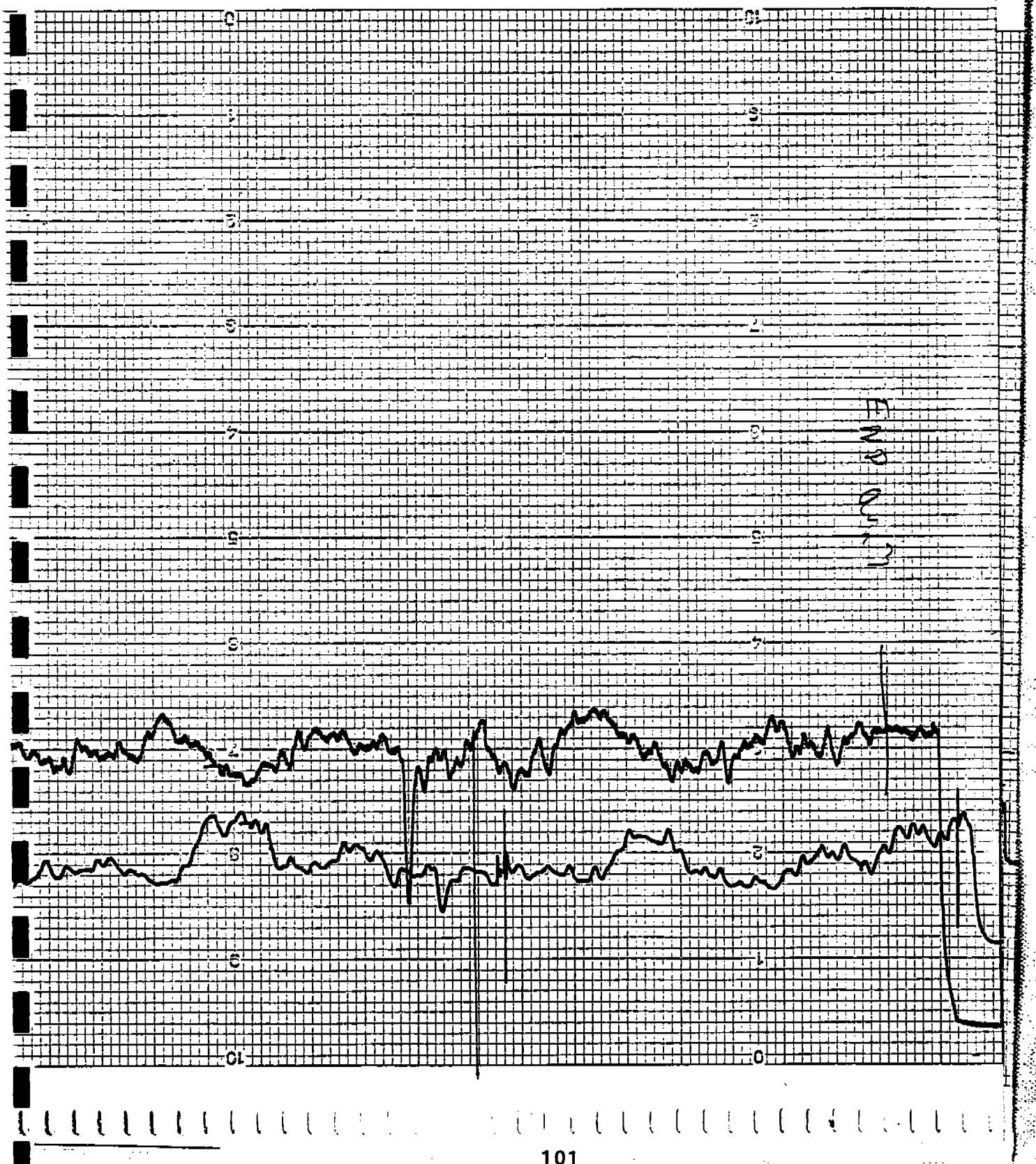
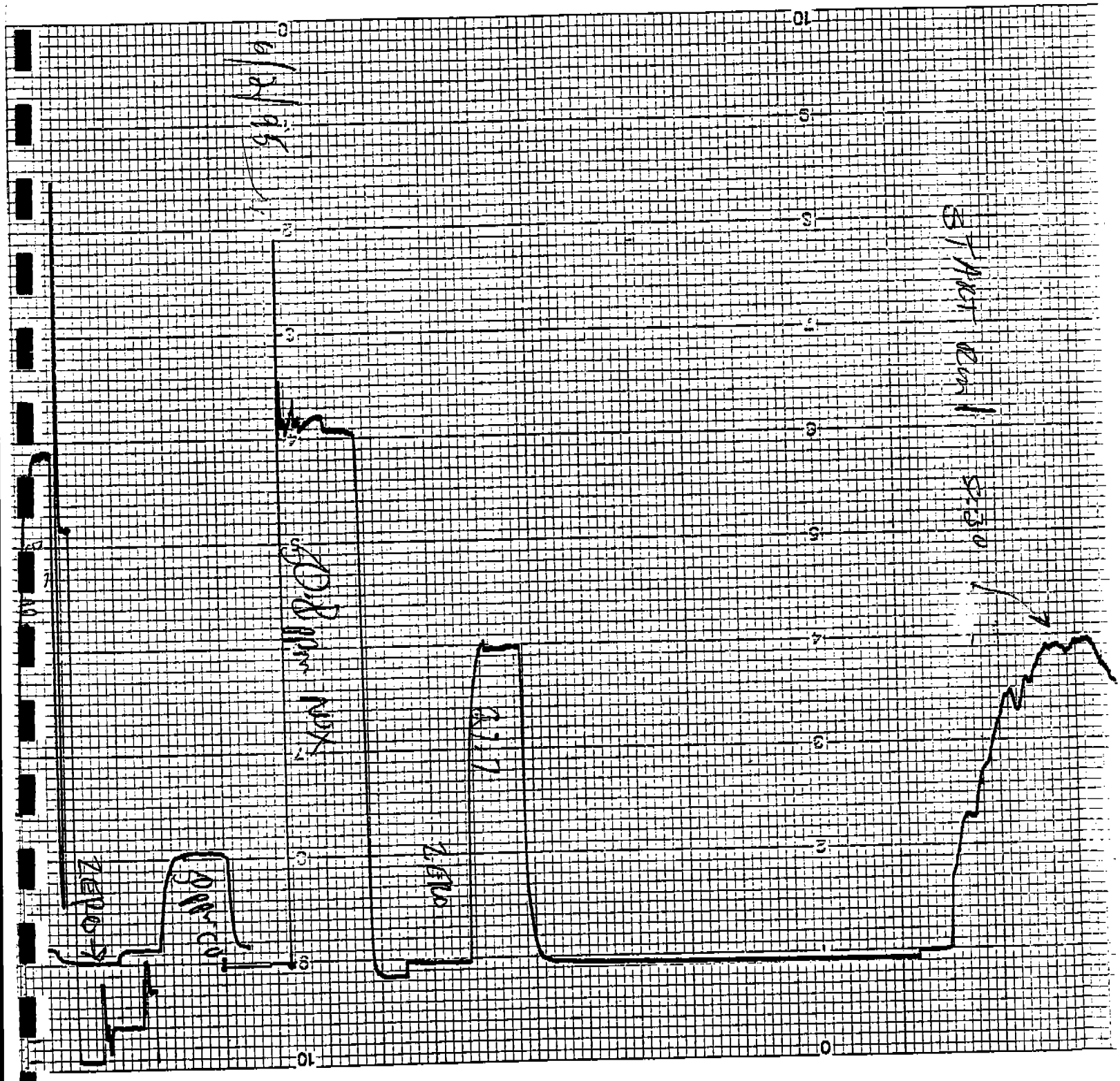
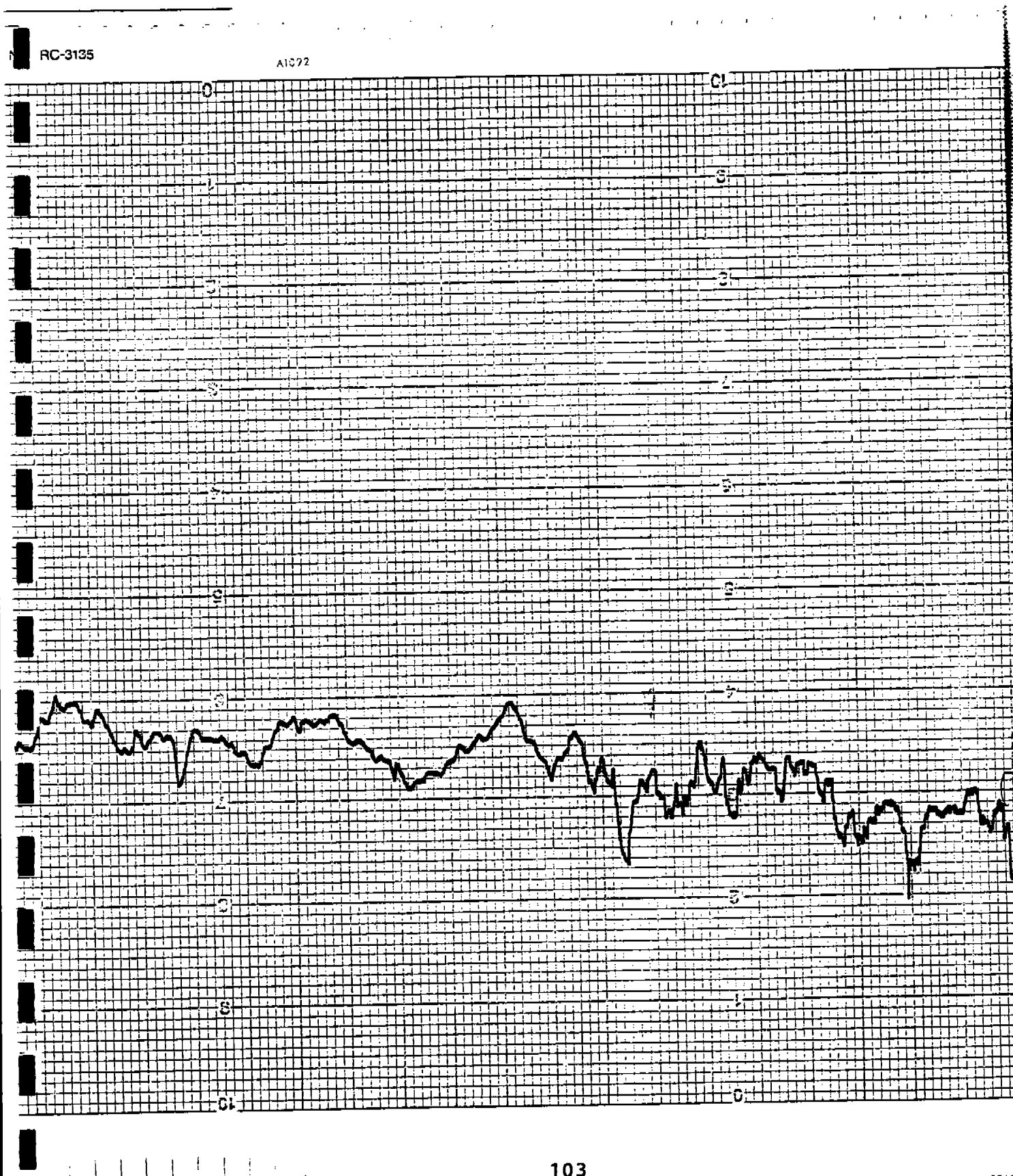

END Run 2
BLEW OUT CAPP TUBES
20 ppm
27 ppm

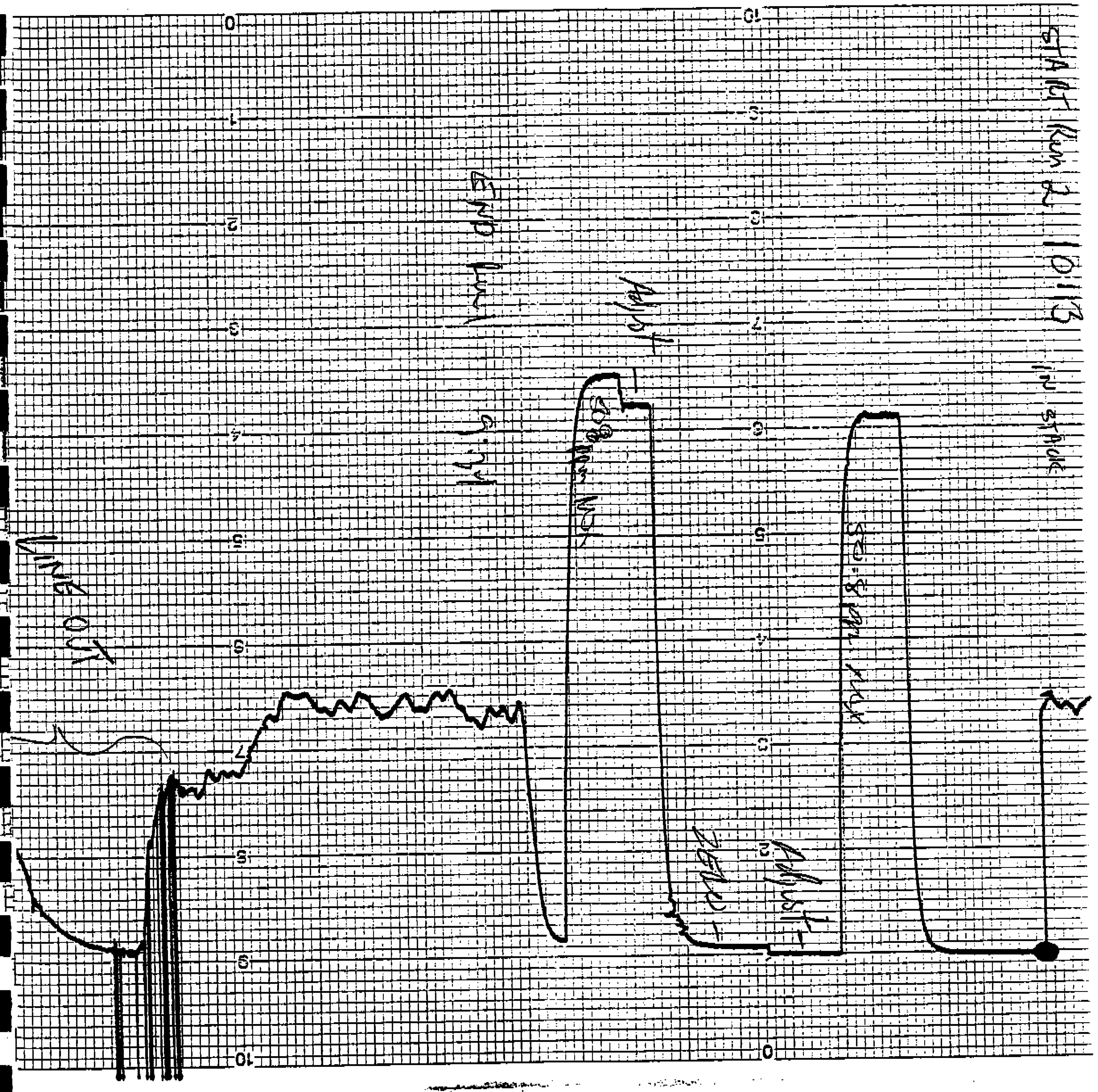
CHART NO. RC-3135








RC-3135


START Run 2 10:13
IN STACK
END Run 1 9:41
Adjust
Adjust
ZERO
LINE OUT

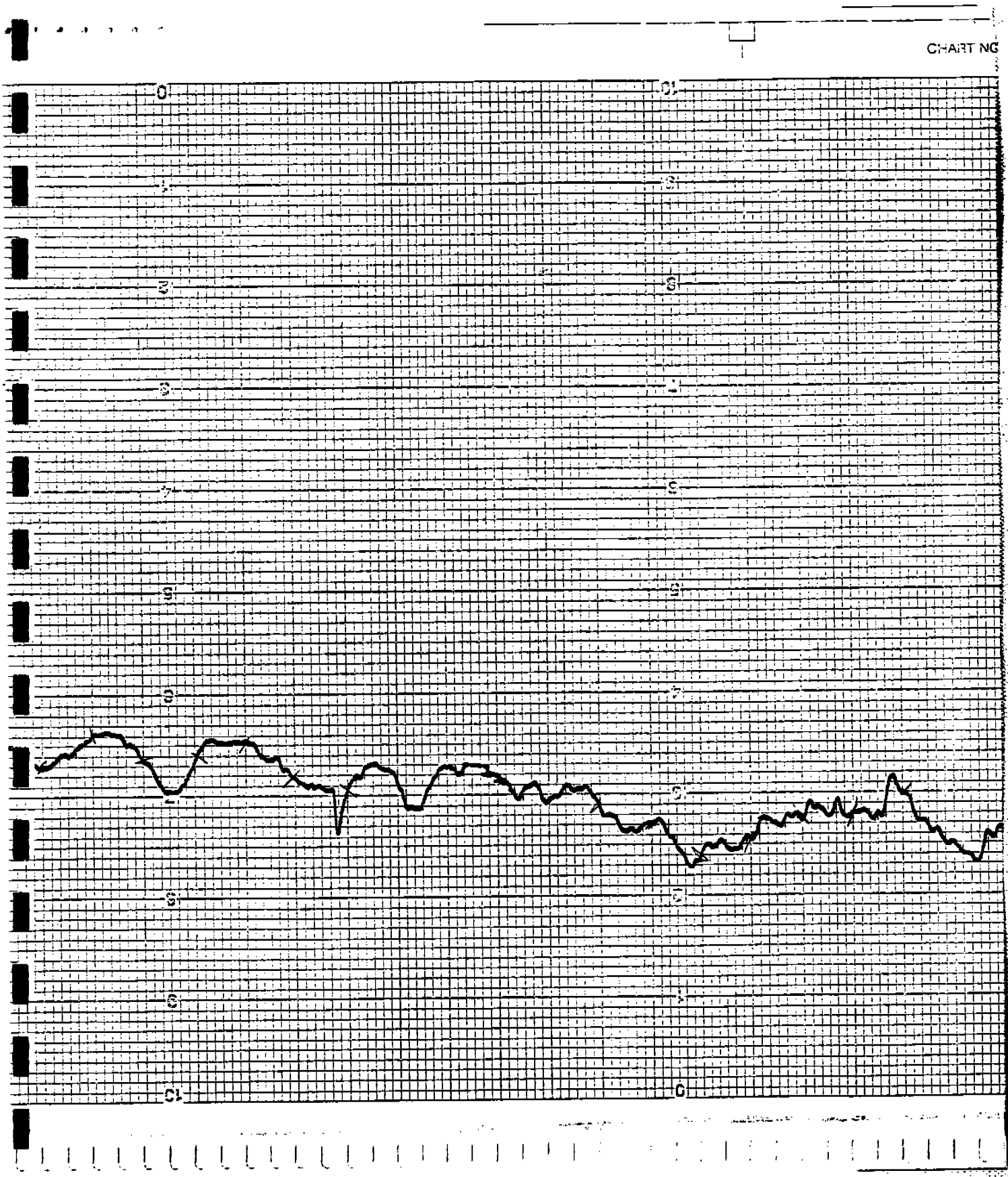
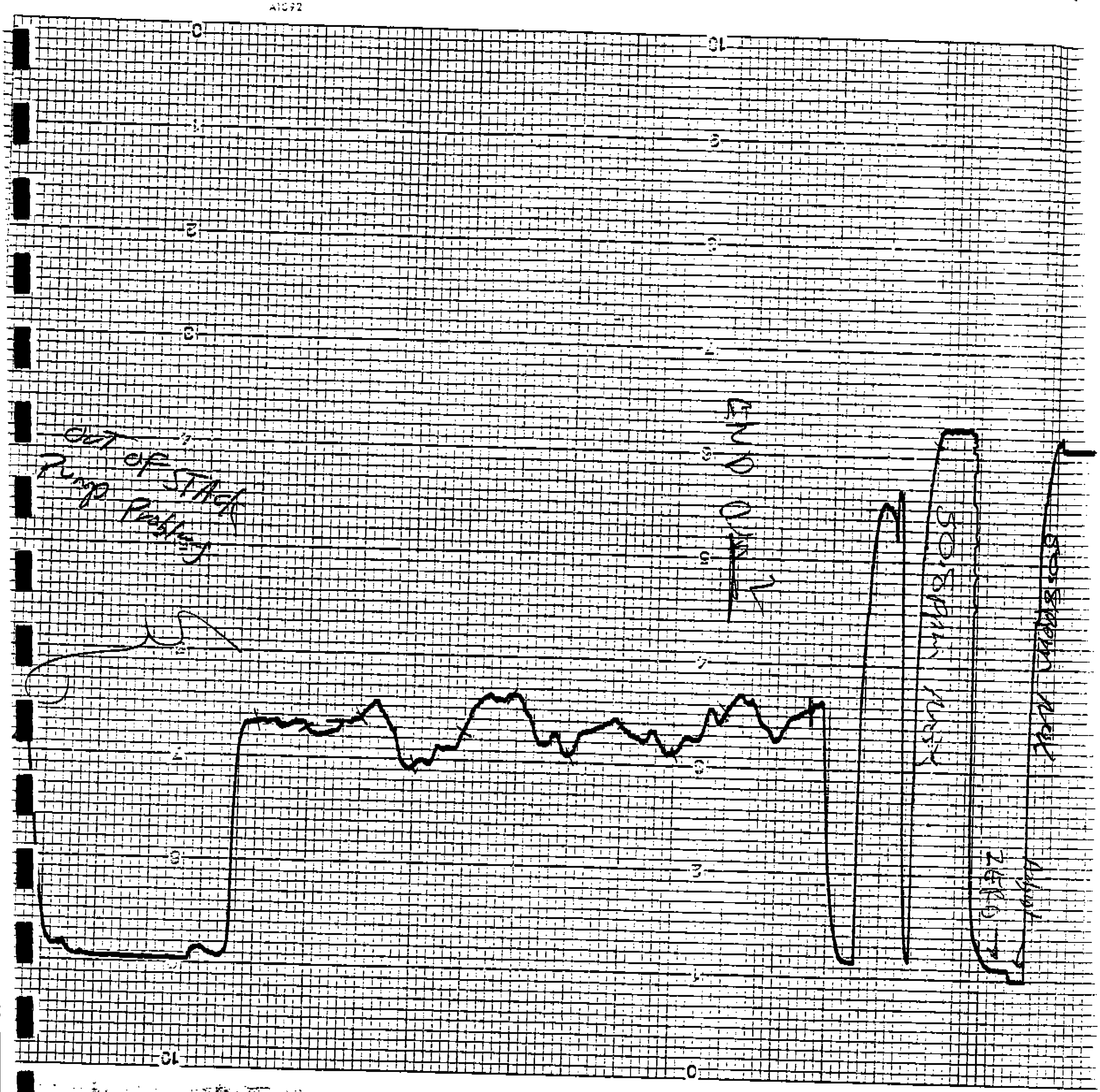


CHART NO

C-3135


Out of Stack
Pump Problems
End Run 12
3050 ppm Hexane
2650
8000 ppm Hexane
Adjust

THE RECORDER Co. P.O.BOX 8, San Marcos, Tx 78667 Tel. 512-6291400

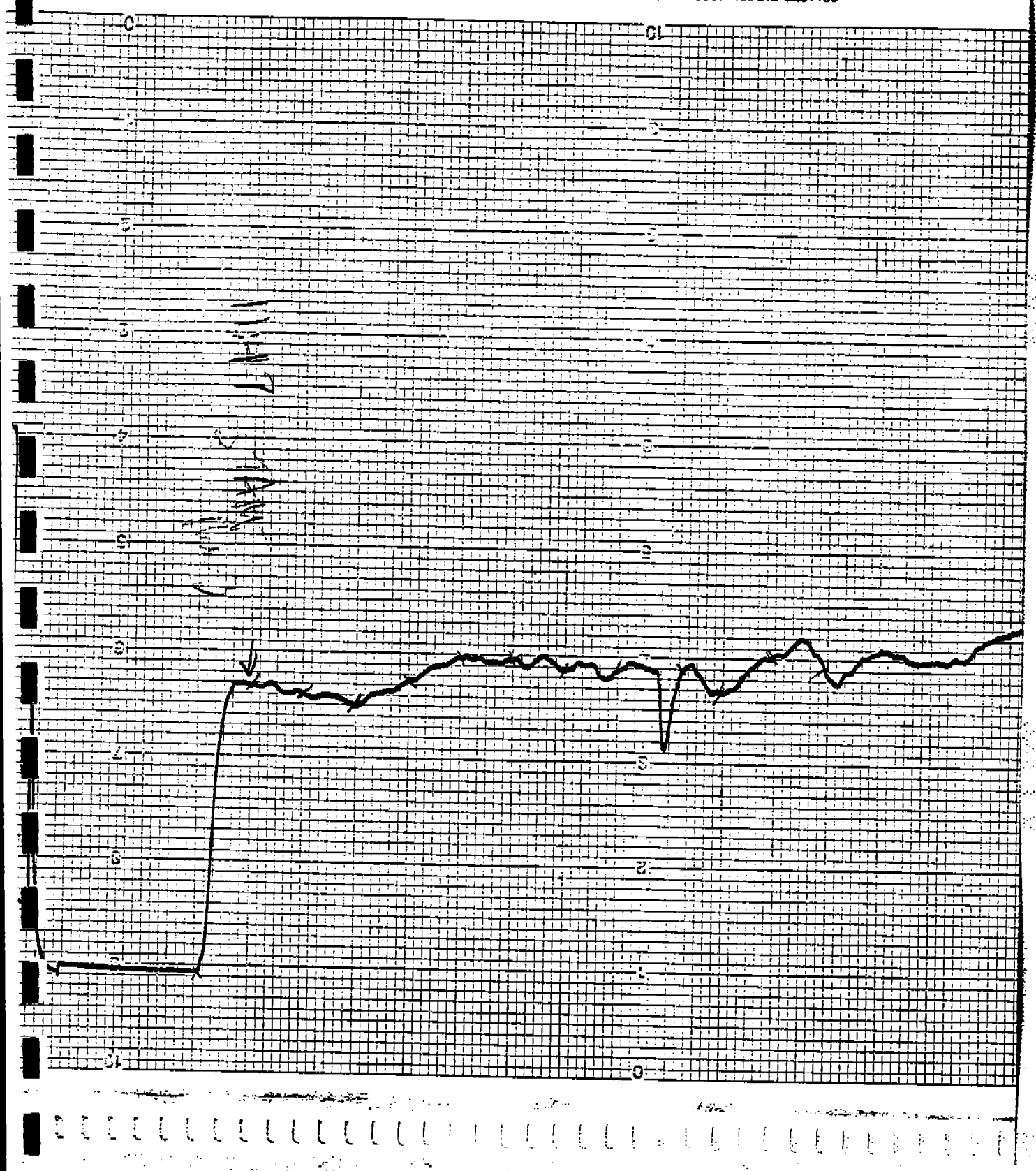
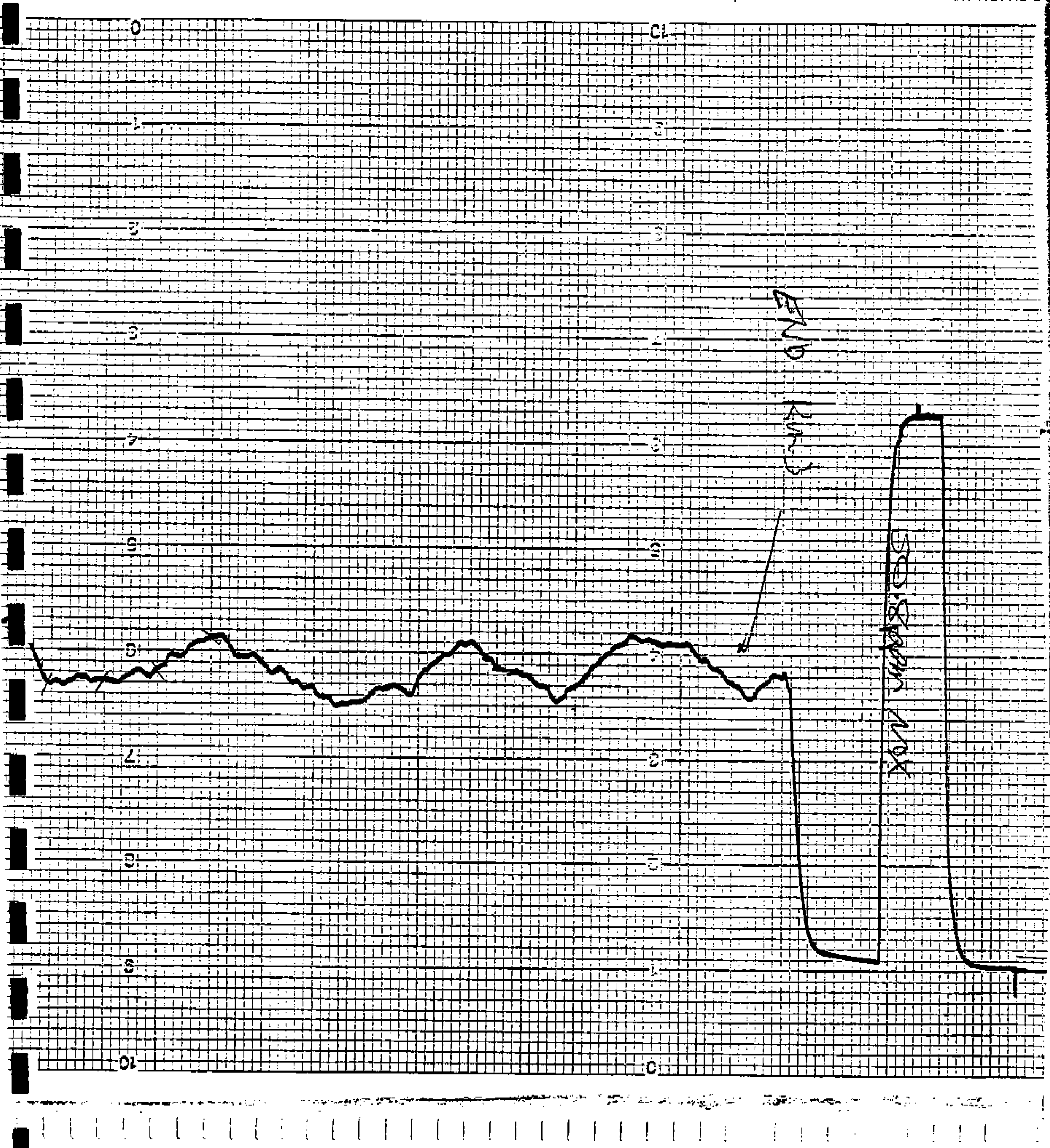
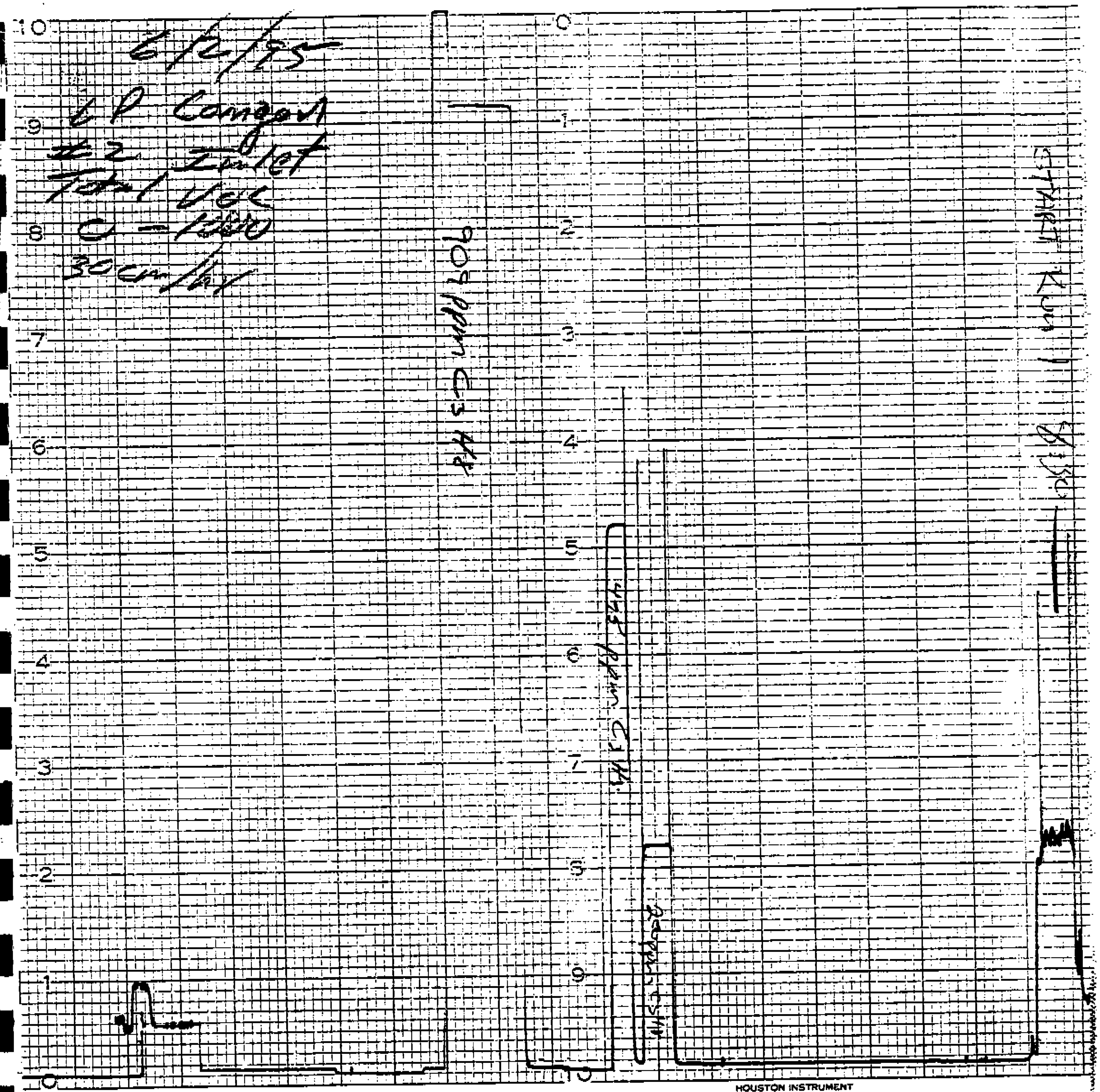
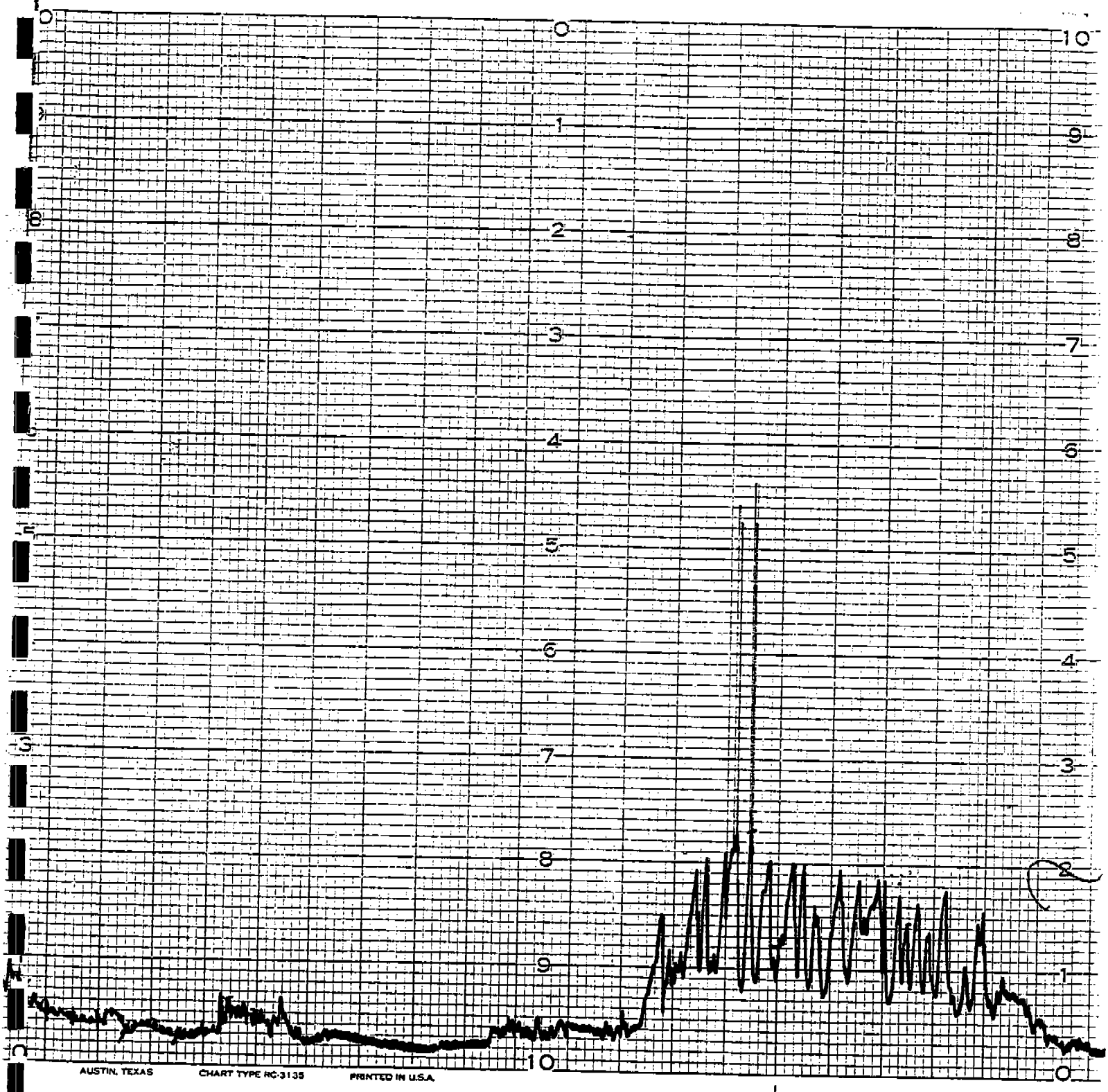
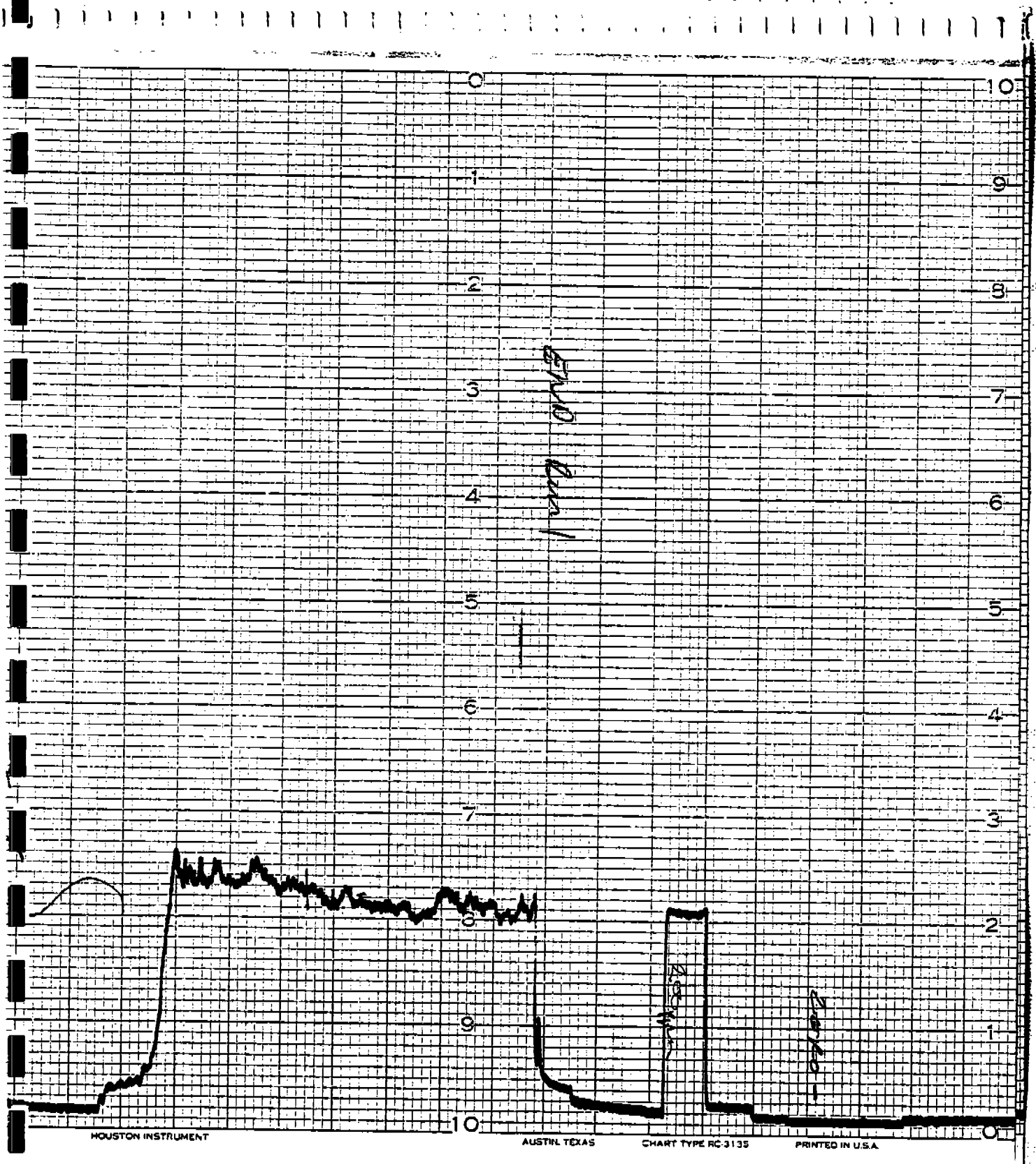


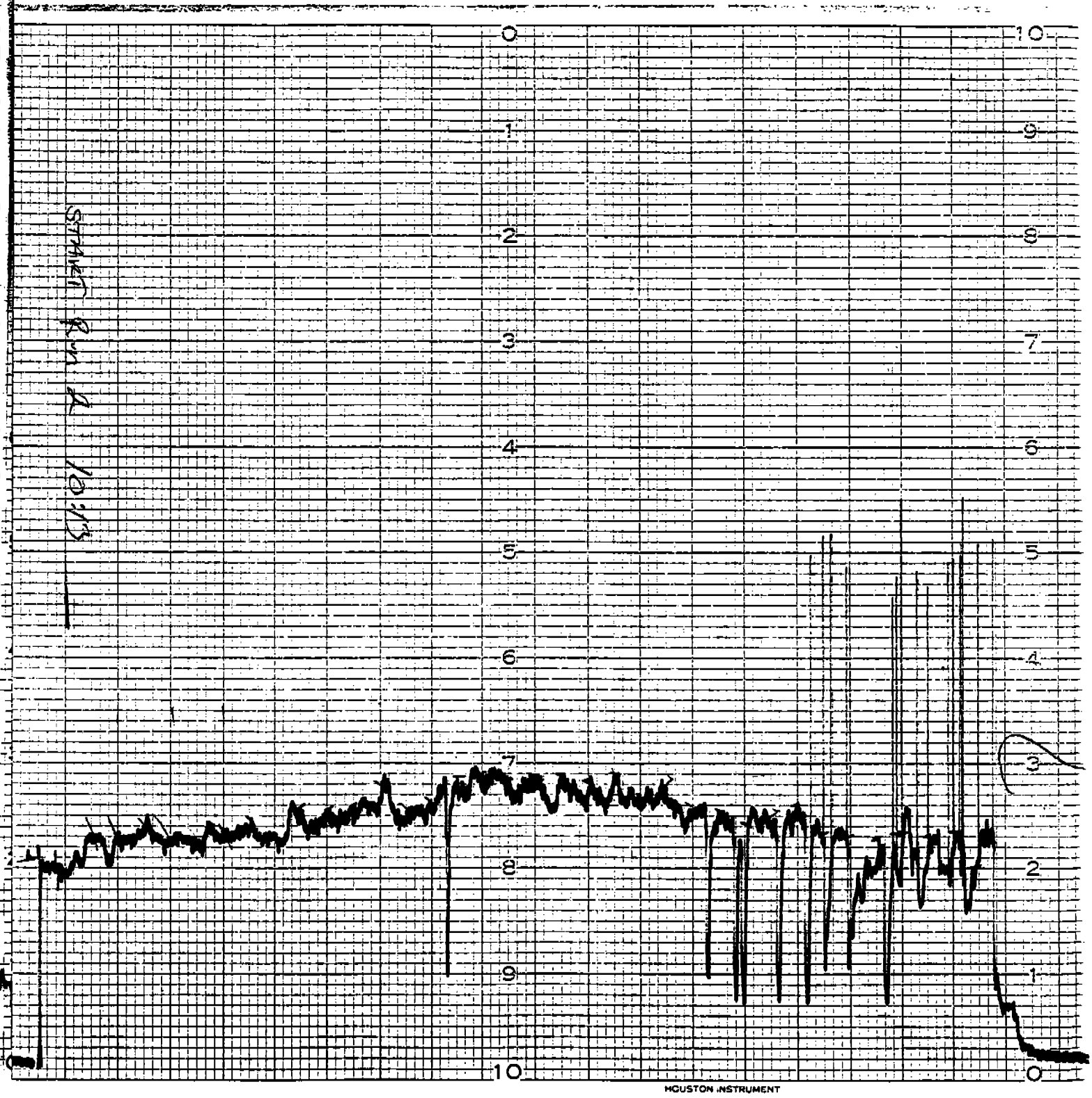
CHART NO. RC-3…




6/12/95
30cm/hr
START RUN 1
HOUSTON INSTRUMENT


AUSTIN, TEXAS
CHART TYPE RC-3135
PRINTED IN U.S.A.


HOUSTON INSTRUMENT
AUSTIN TEXAS
CHART TYPE RC-3135
PRINTED IN U.S.A.


Start Run A 10:15
HOUSTON INSTRUMENT

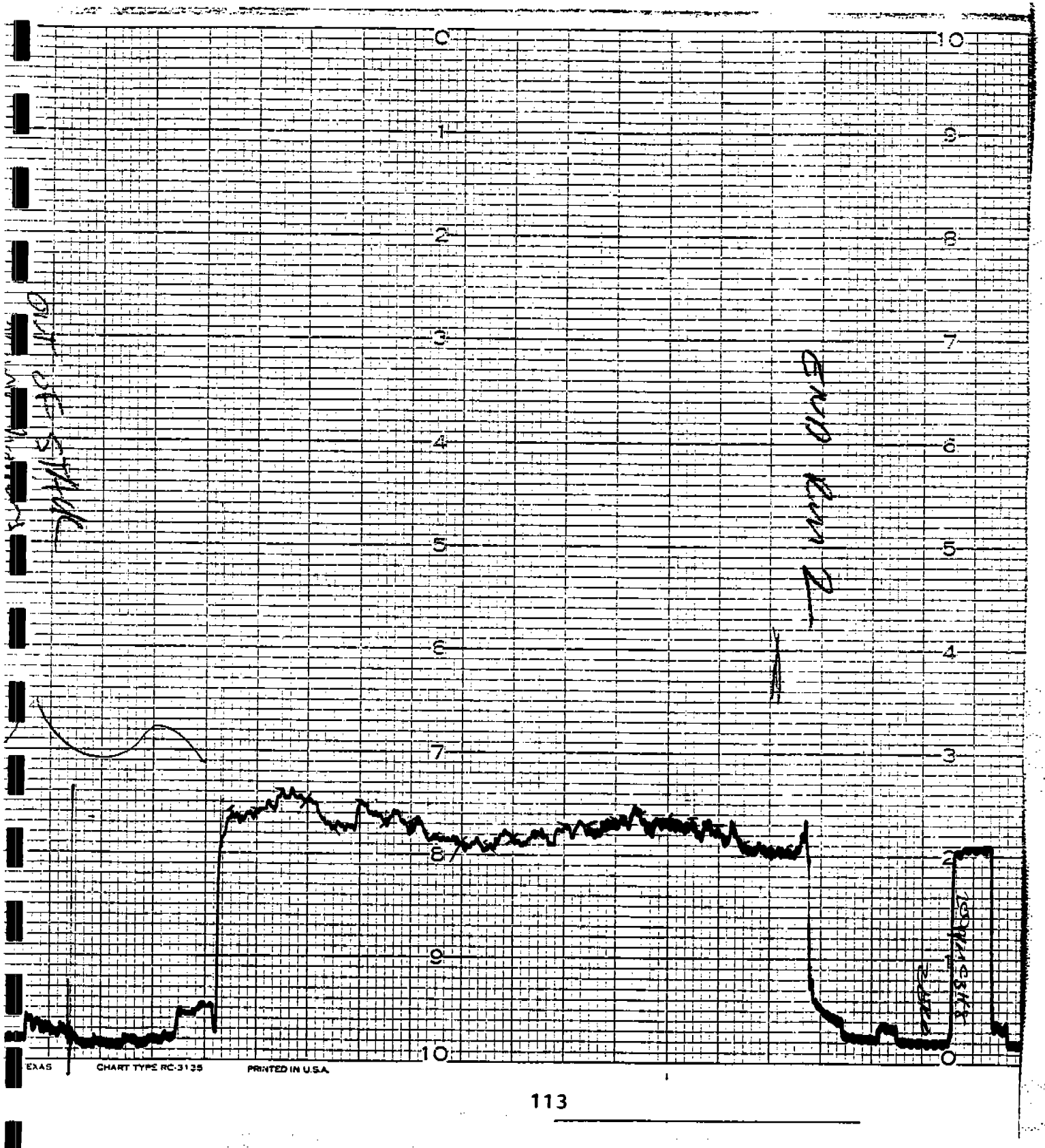
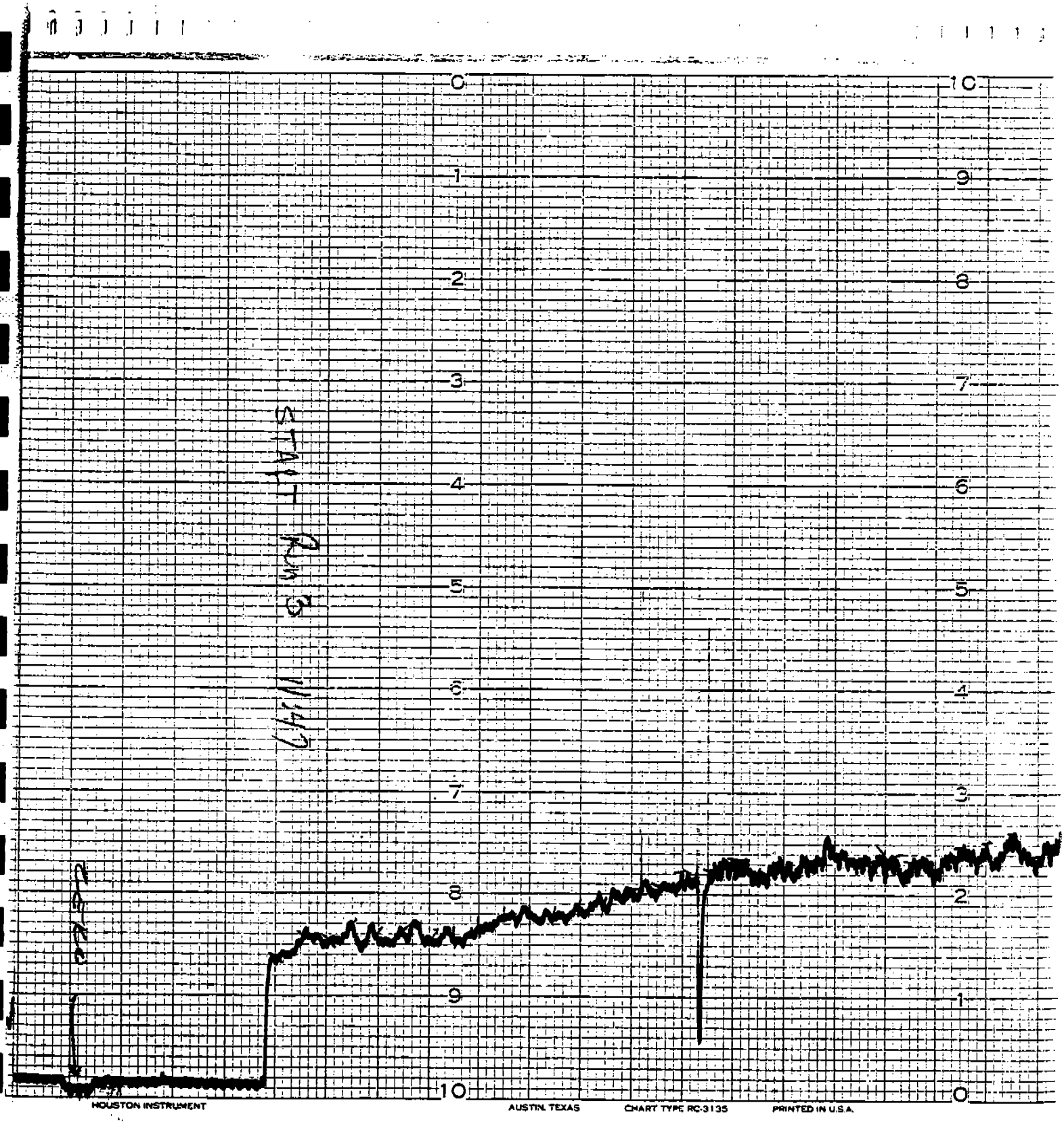
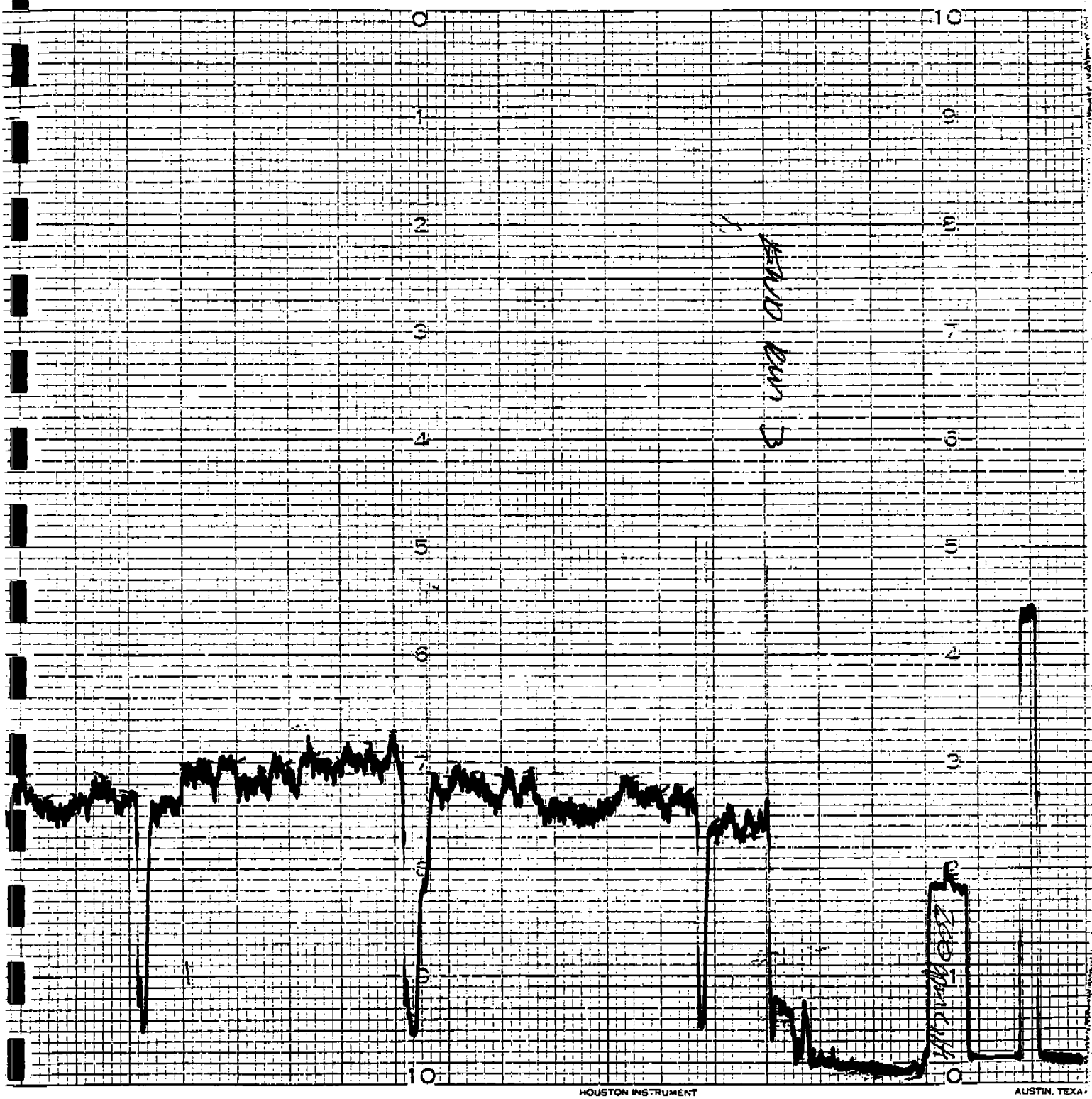


CHART TYPE RC-3135
PRINTED IN U.S.A.


HOUSTON INSTRUMENT
AUSTIN, TEXAS
CHART TYPE RC-3135
PRINTED IN U.S.A.


HOUSTON INSTRUMENT
AUSTIN, TEXAS

LP Comgen
#3 Inlet (Orig #3) 5/15/95
CO

Run 1	Run 2	Run 3
21	17	10
23	17	10
25	17	9.5
26	19	10
25	15	9.5
26.5	14.5	9.5
25	12	9.5
23	11.5	10
23	13	11.5
22	13	12
23.5	12.5	11.5
23	11.5	10
23	12	13
21	14	13
22	14.5	13
21	16	13
18	16	11
19.5	14	11.5
19	13	11
20.5	13	12
21	13	14
20	13	13
22	12.5	13
19	12.5	13
19	13	13
19	12	13.5
18.5	12.5	12.5
20	14	12
22	15	9
20	15.5	9.5
633.5 ÷ 30	16.5	8
→ 21.12 × 10	17	9
→ 211.17 ppm	17	10
	12.5	9.5
	(486.5 ÷ 34) − 1	(391.5 ÷ 34) − .75
	13.31 × 9.75	10.76 × 10
	→ 95.12 ppm	

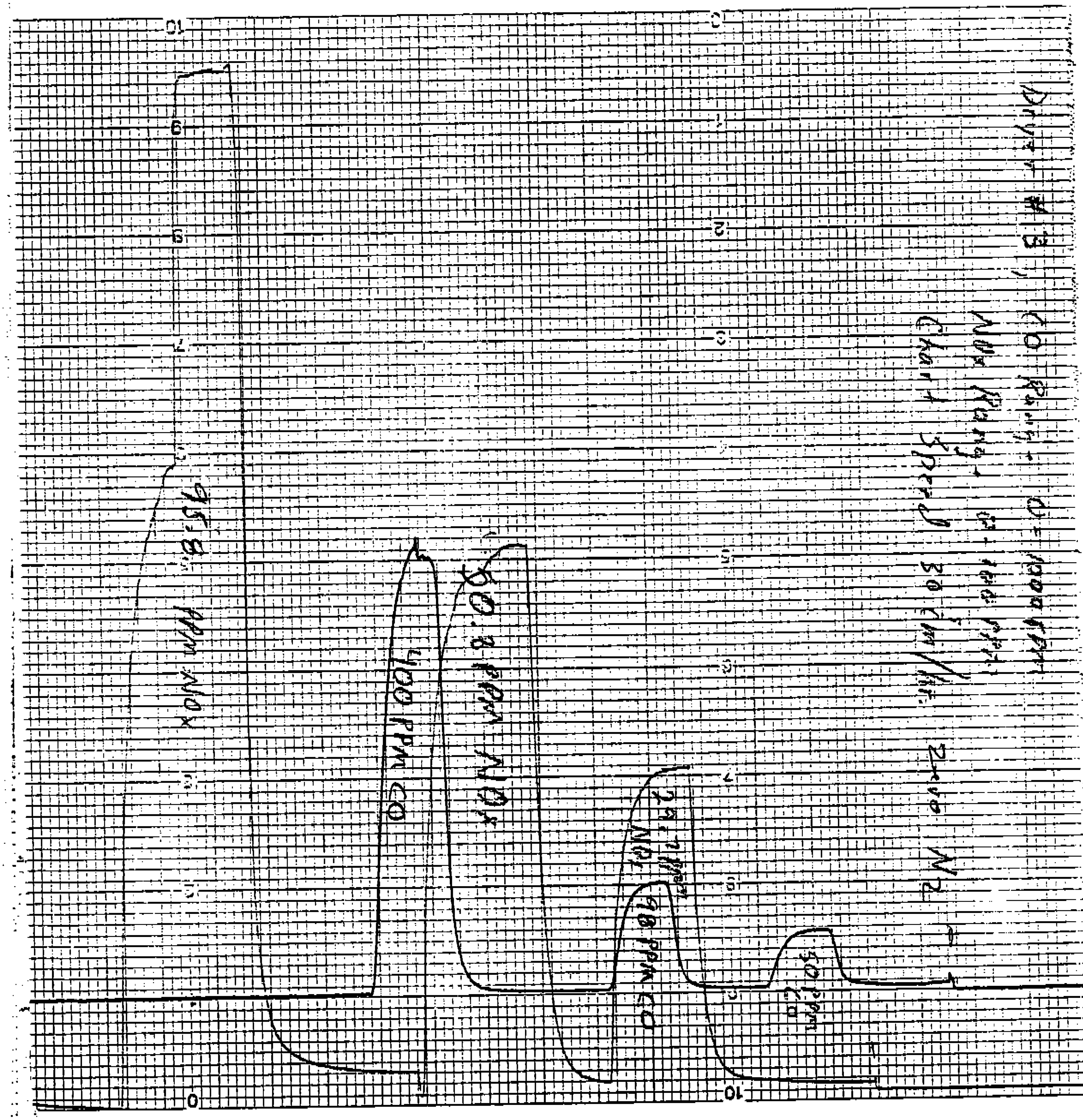
LP Comfort
#3 Inlet (Duct #3) 6/1/95
NOX

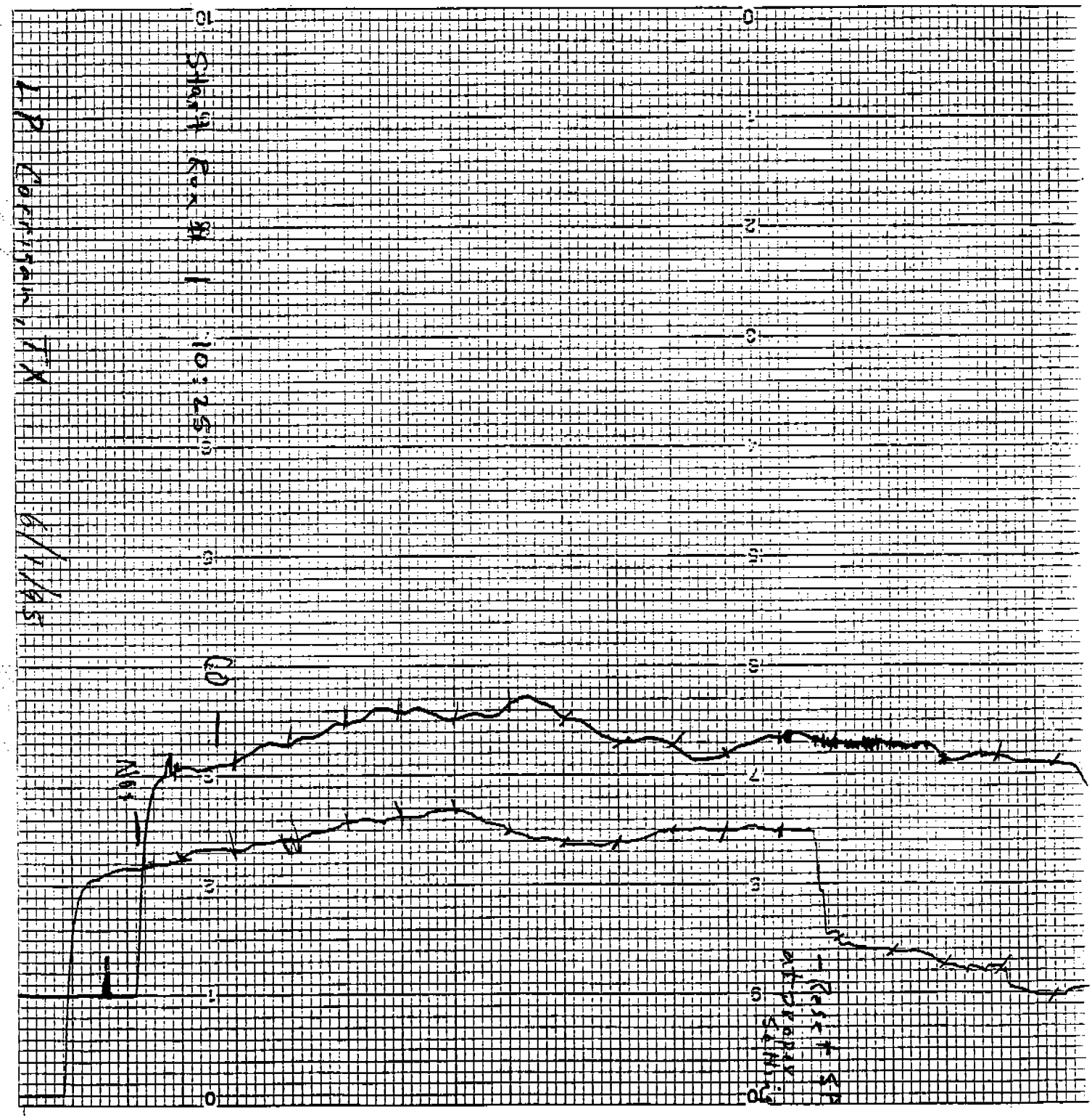
Run 1	Run 2	Run 3
22	22	17
23	18	17.5
24	19	17
26	20	16.5
26	19	18
27	18	20
25	16	22
24	16	22.5
24	15	22
25	17	22
25	16	23
25	15	23
15	17	21.5
14	14	21
12.5	17	21
12	14.5	22
10	17	21
9	13.5	19.5
9	12	19
9	12.5	19
8	11.5	18.5
8	9	17
8	9	20
8	9.5	17.5
8	5.5	19
6.5	9	17
6.5	12	24
7	10.5	20
6.5	9	19
6	10	19
(451 ÷30)+1	10.5	20
14.03 x 1.165	11.5	16
17.51 ppm	11	22
	(454.5÷37)+6.25	678.5÷33
	20.02 X 1	20.56 ppm
	20.02 ppm	

LP Compan
#3 Inlet Pmp #3 6295
VOC

Run 1		Run 2		Run 3	
26	27	28	38	45	33
23	25	26	37	44	39
24	25	25.5	37	43	47
24	22	25	36	43	45
25	26	26	35	41	40
25	27	30	37	39	36
24	28	32	39	38	38
24	29	33	39	34	47
25	29	35	40	31	49
24	31	35	41	30	47
24	31	37	42	30	44
25	30	36	43	33	45
27	29	36	38	36	45
26	30	36	40	40	45
27	29	38	38	41	44
30	30	36	38	41	42
30	30	39	37	42	41
29	29	40	36	42	40
30	27	39	35	42	41
29	26	33	34	42	36
29	24	37	34	42	34
29	22	36	34	42	33
27	21	35	34	44	32
25	20	36	34	46	34
25	27	30	37	50	36
24	26	31	31	52	35
26	24	30	38	47	33
27	23	30	40	42	33
29	23	32	42	34	32
28	24	36	46	1130 34	32
26	27	38	48	2310	÷60
28	29	38	58		
1173 29	27	228.5	÷64	38.5	x 5
2050	÷ 66				
		35.75	x 5.13		
31	x 5.26				
163.38 ppm		183.44 ppm		192.5 ppm	

CHART NO. RC-3125





P.O.BOX 3, San Marcos, Tx 78667 Tel 512-6291400

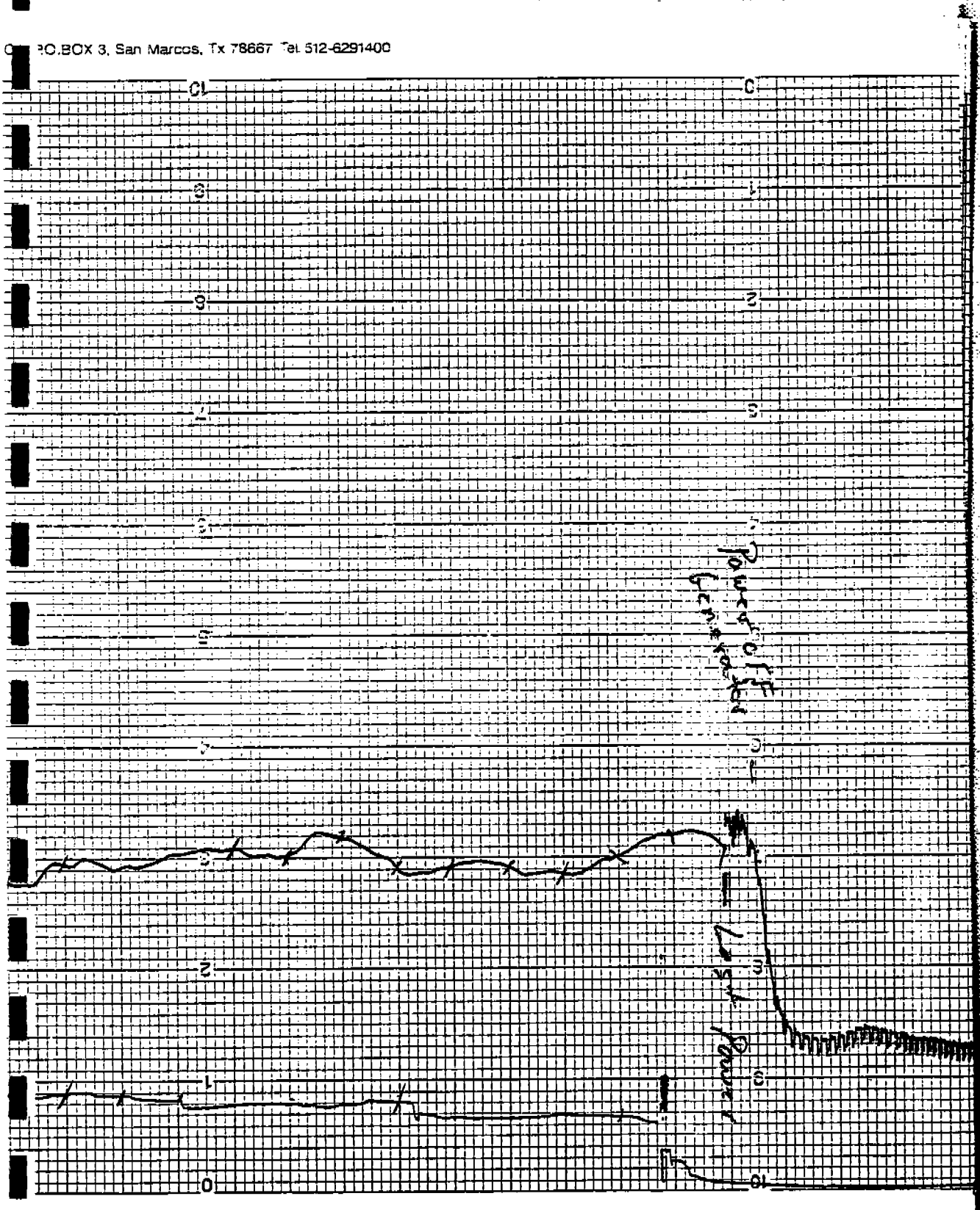
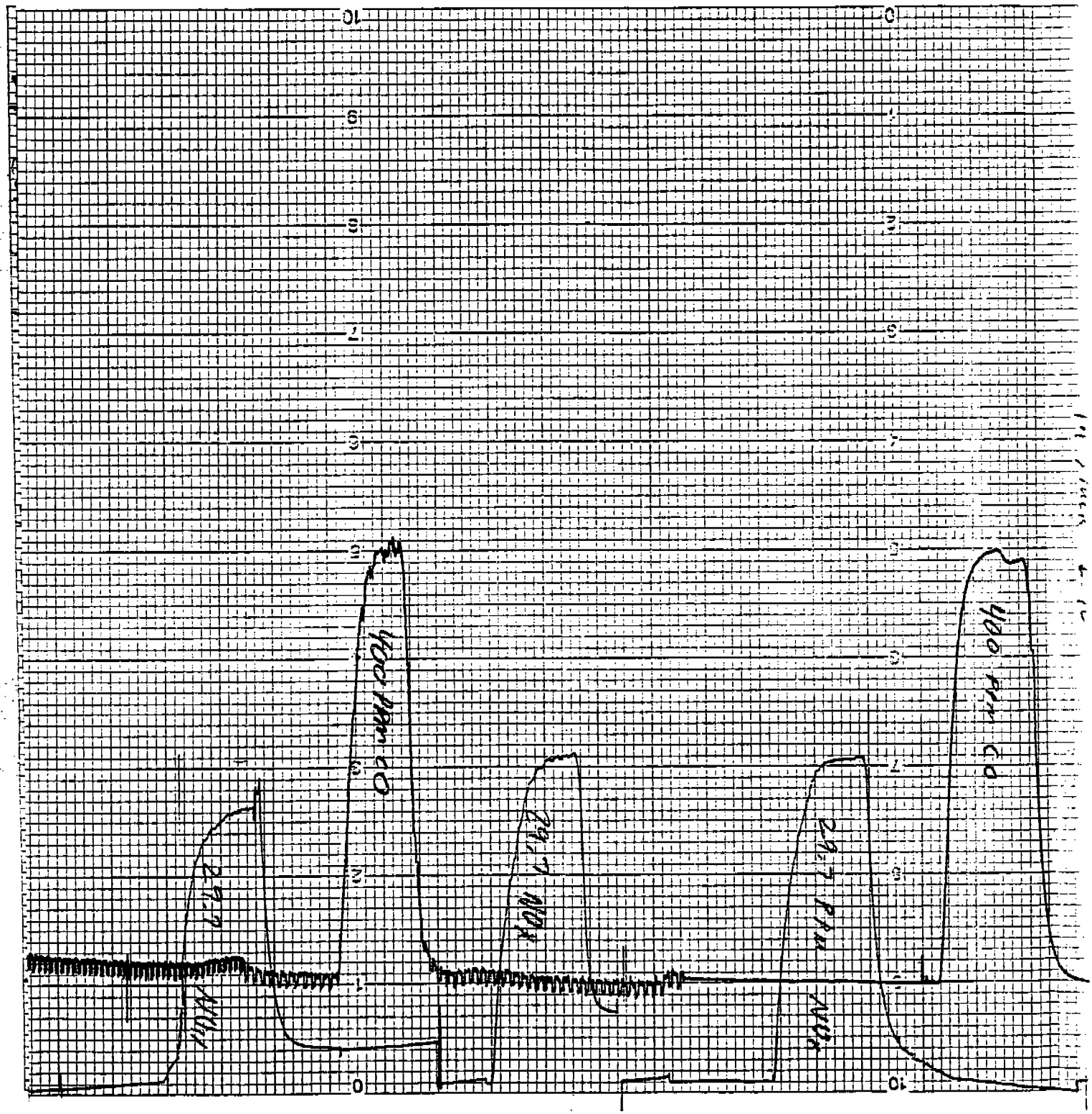
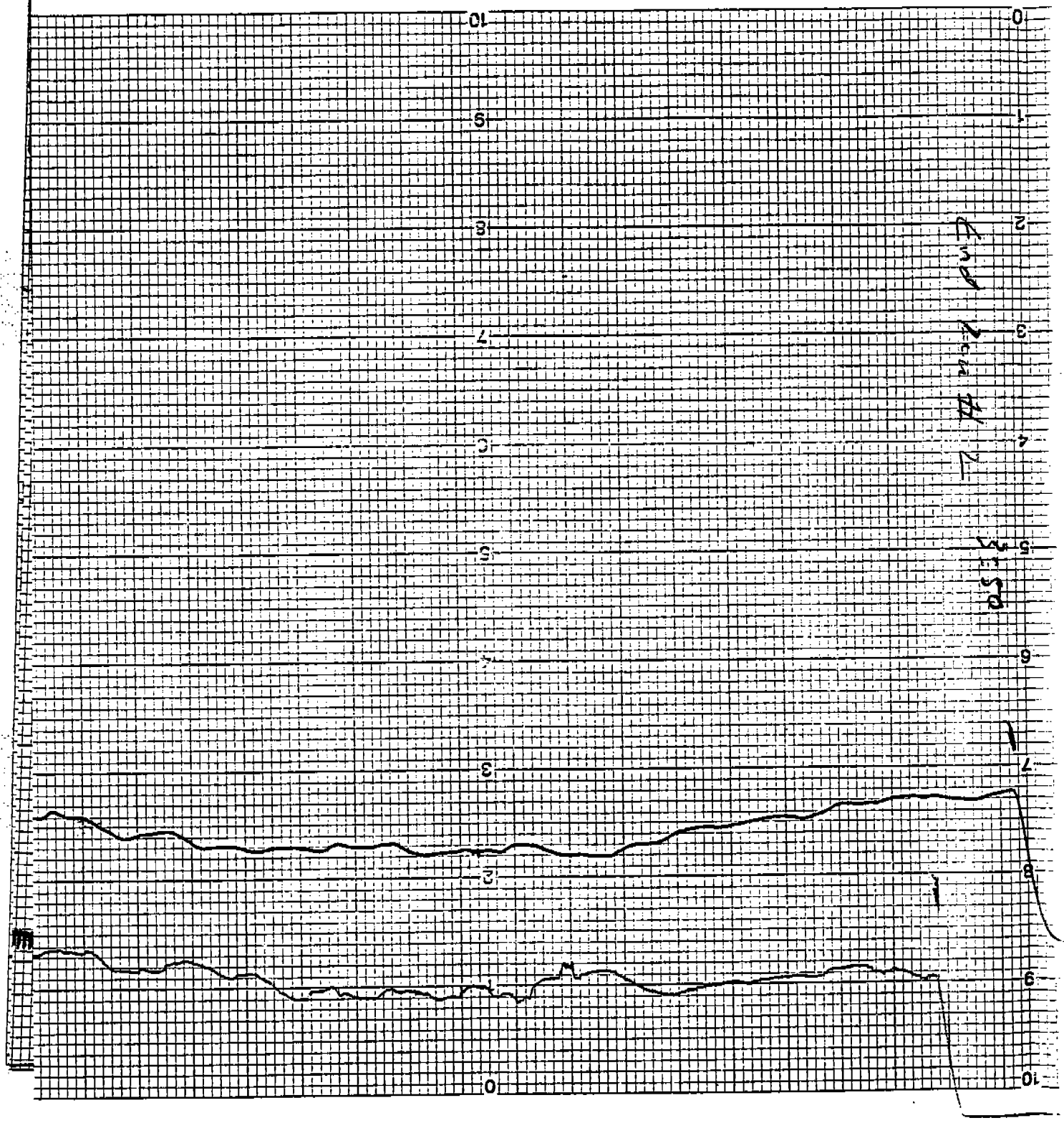


CHART NO. RC-3135



Max

THE RECORDER Co. P.O.BOX 8, San Marcos, Tx 78667 Tel 512-6291400



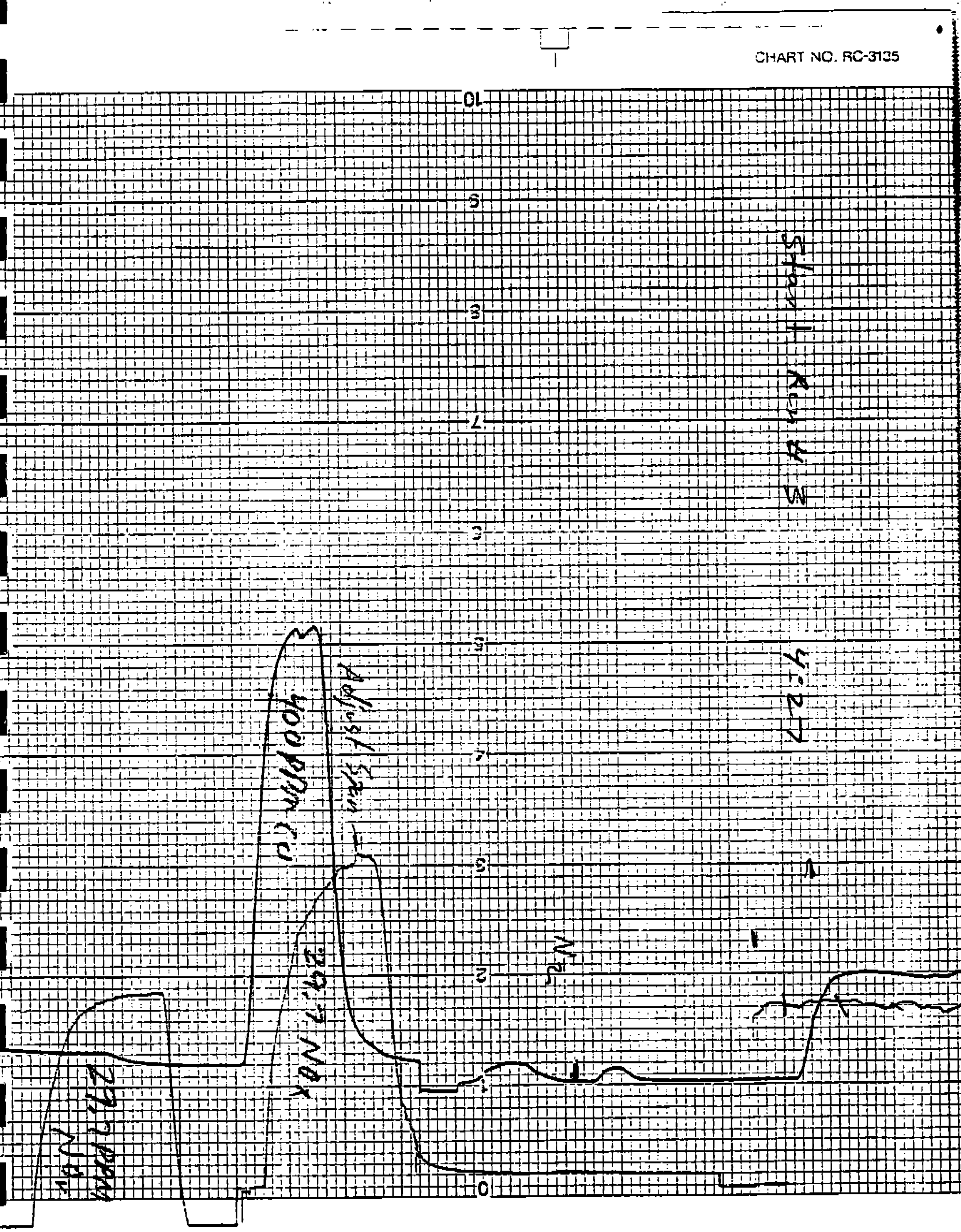
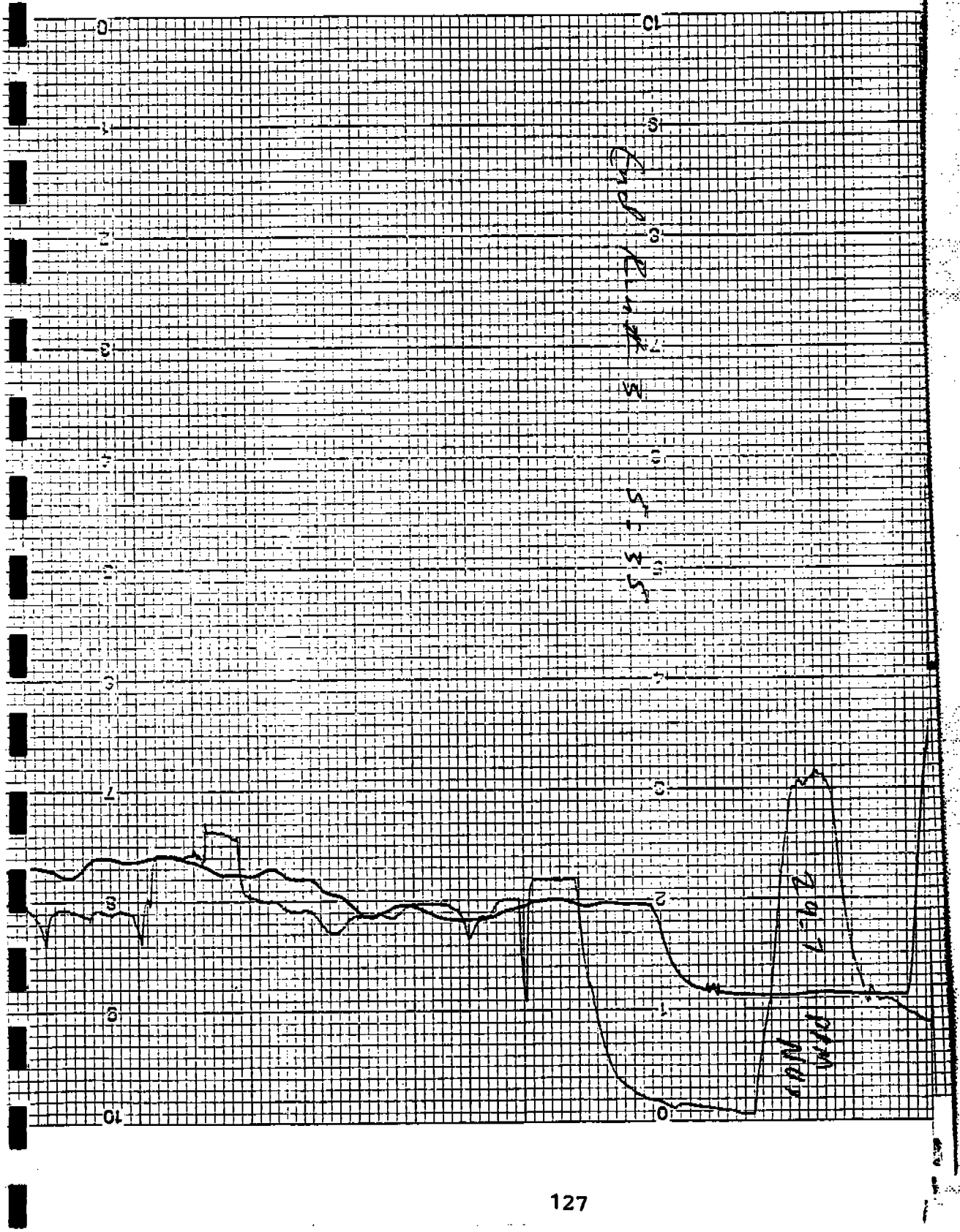
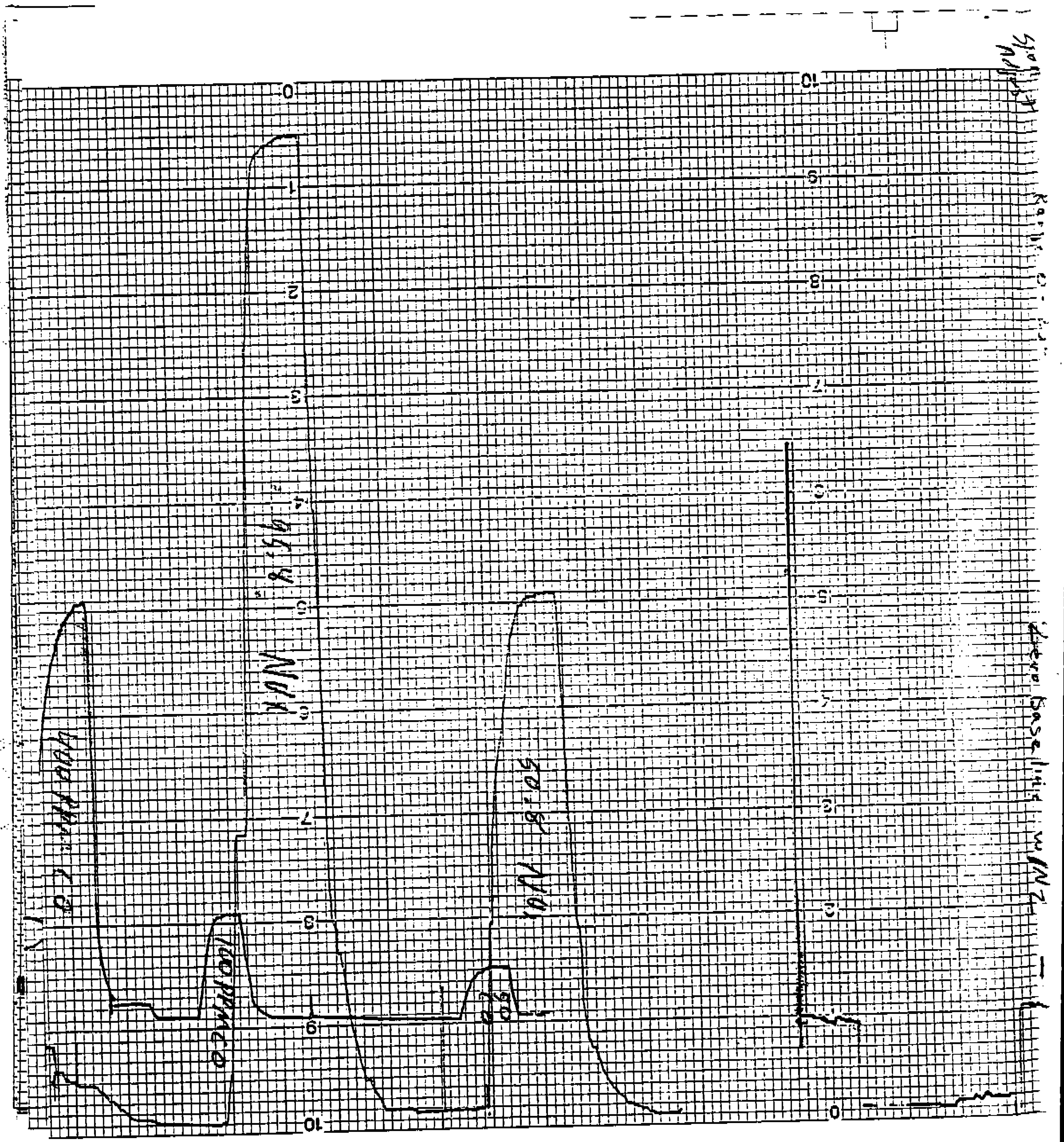
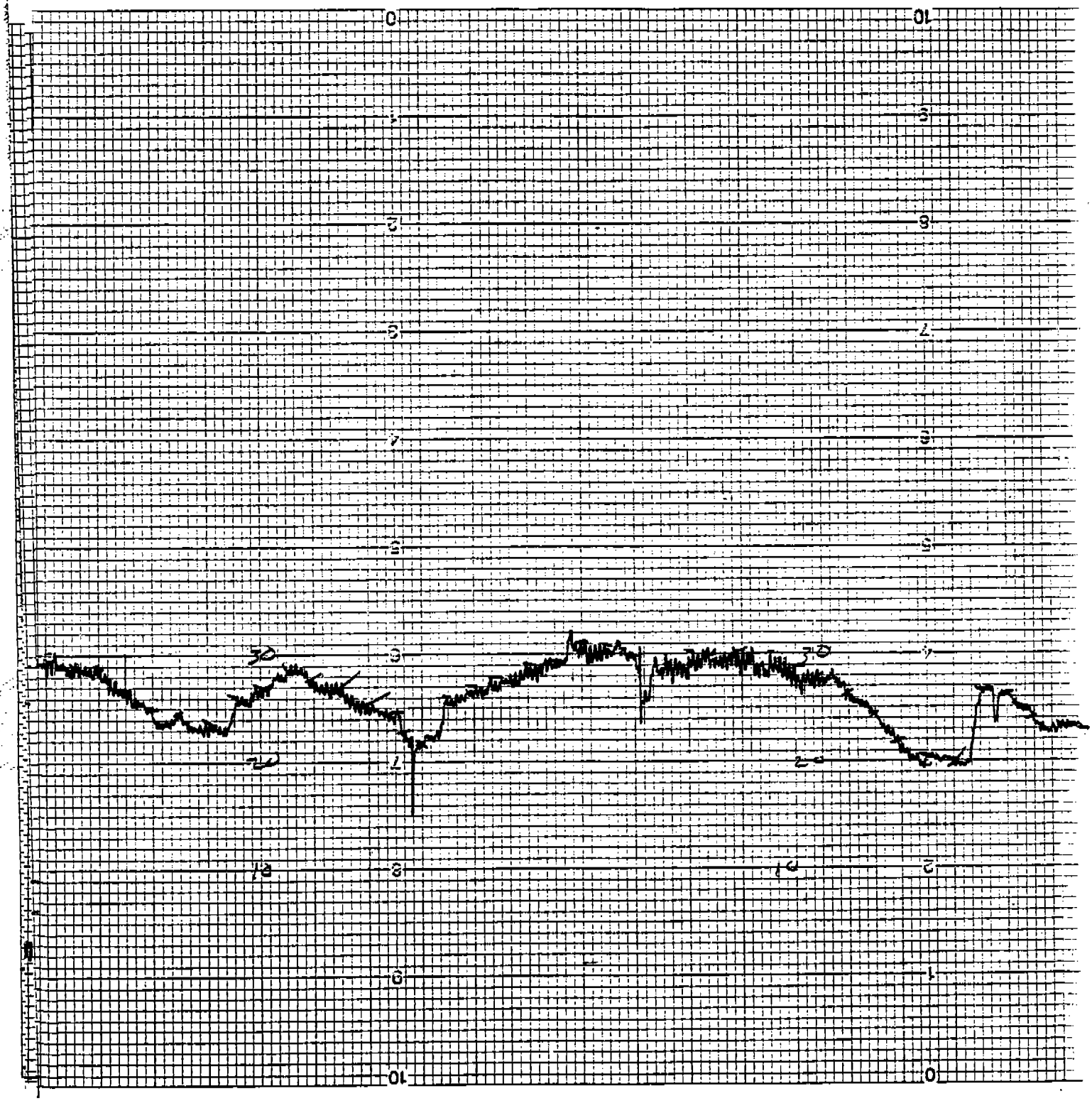


CHART NO. RC-3135
Start Run # 3
4-27
400ppm Co
Adjust Span





ART NO. RC-3135



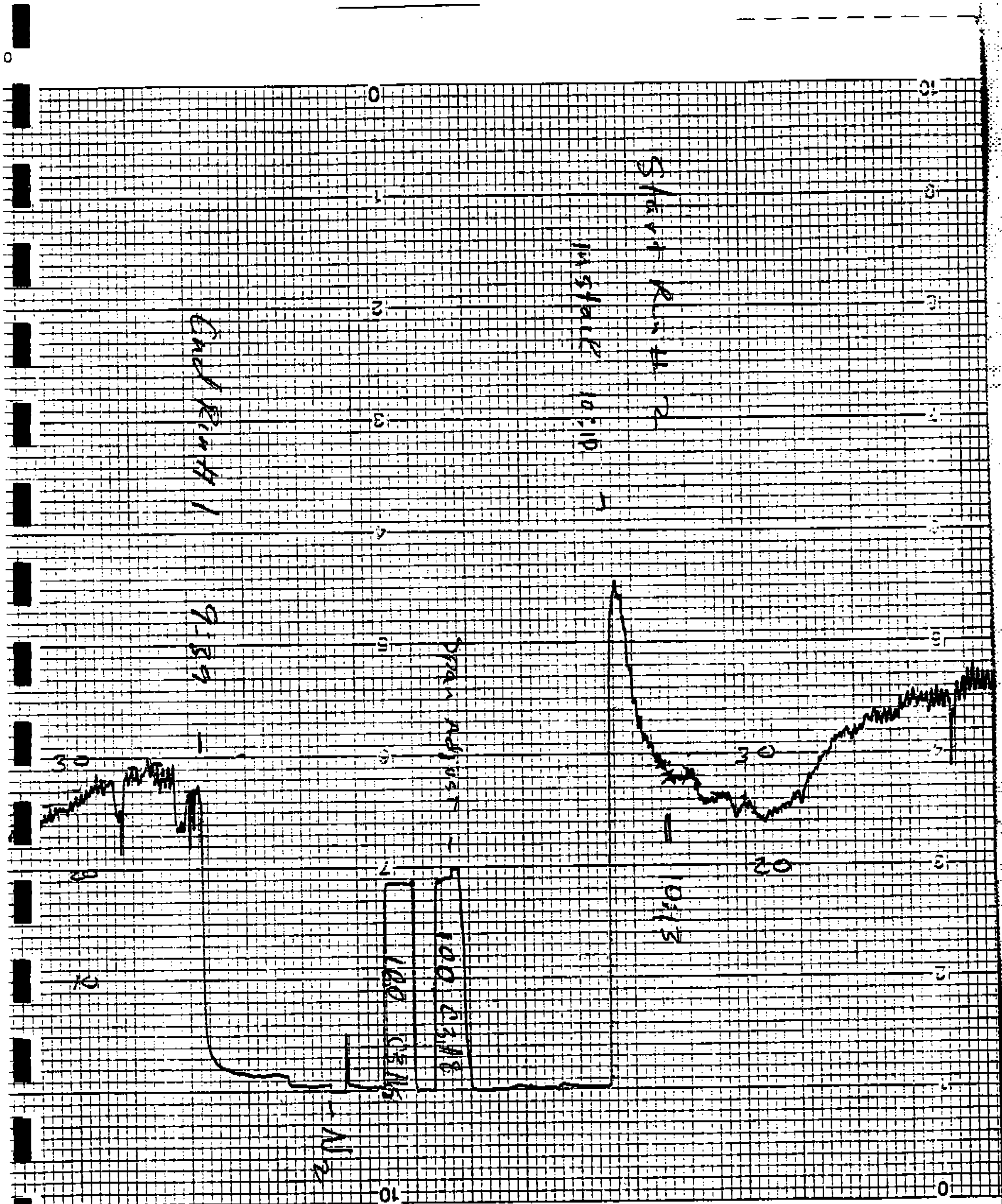
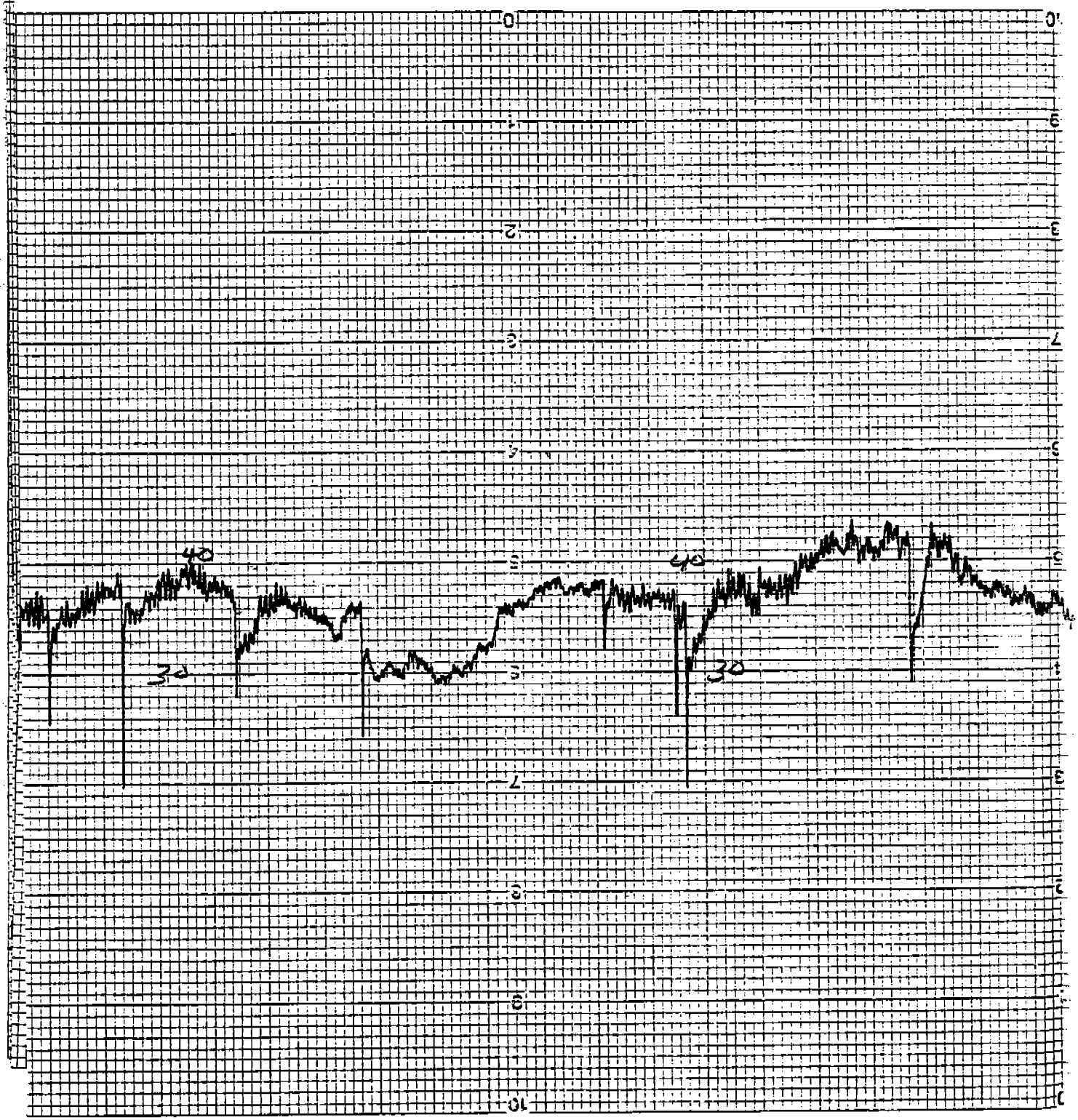
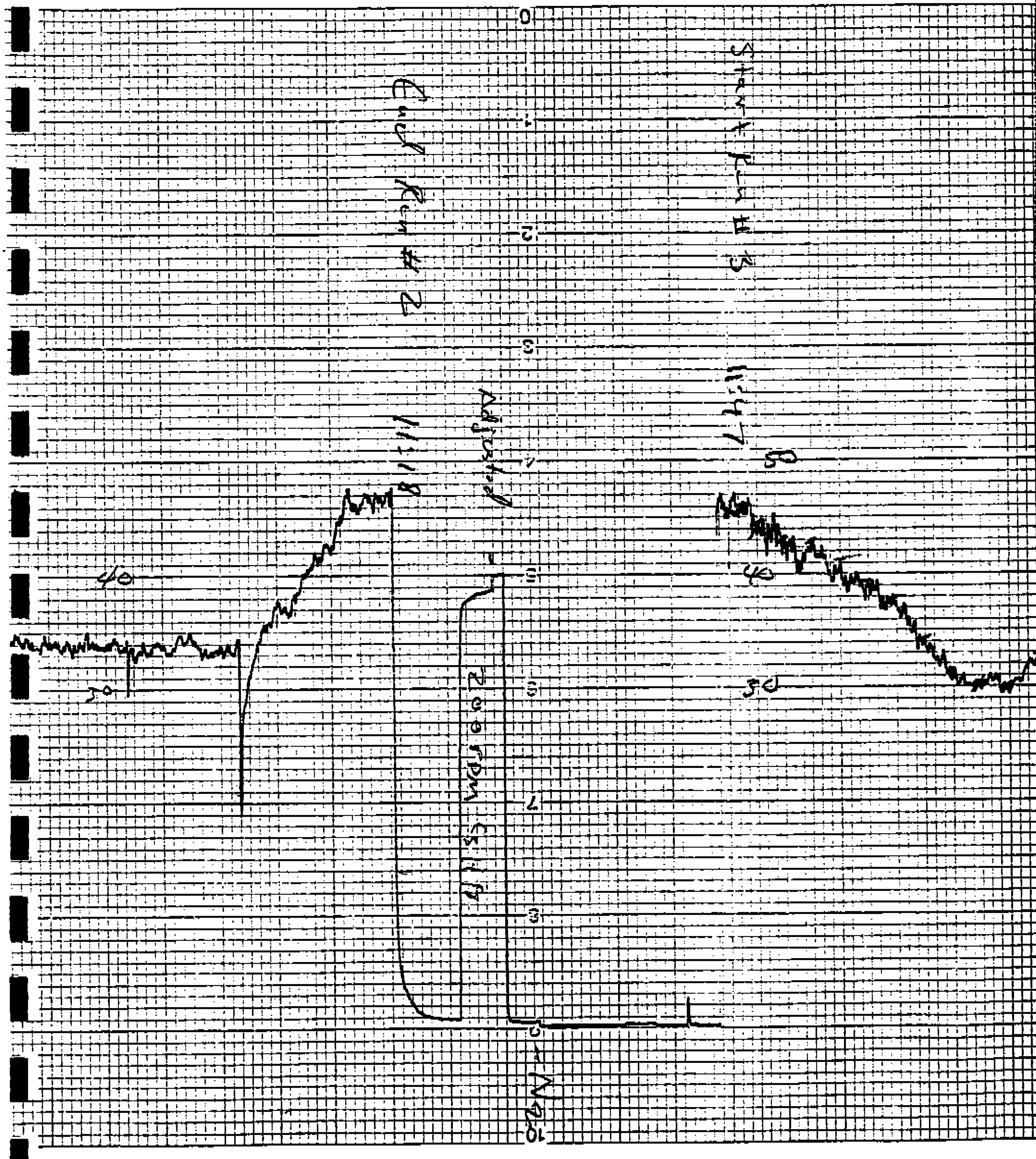

Start Run # 2
Install 10:10
End Run # 1 9:59
Span Adjust
100 C3H8
100 C3H8
10:13
N2

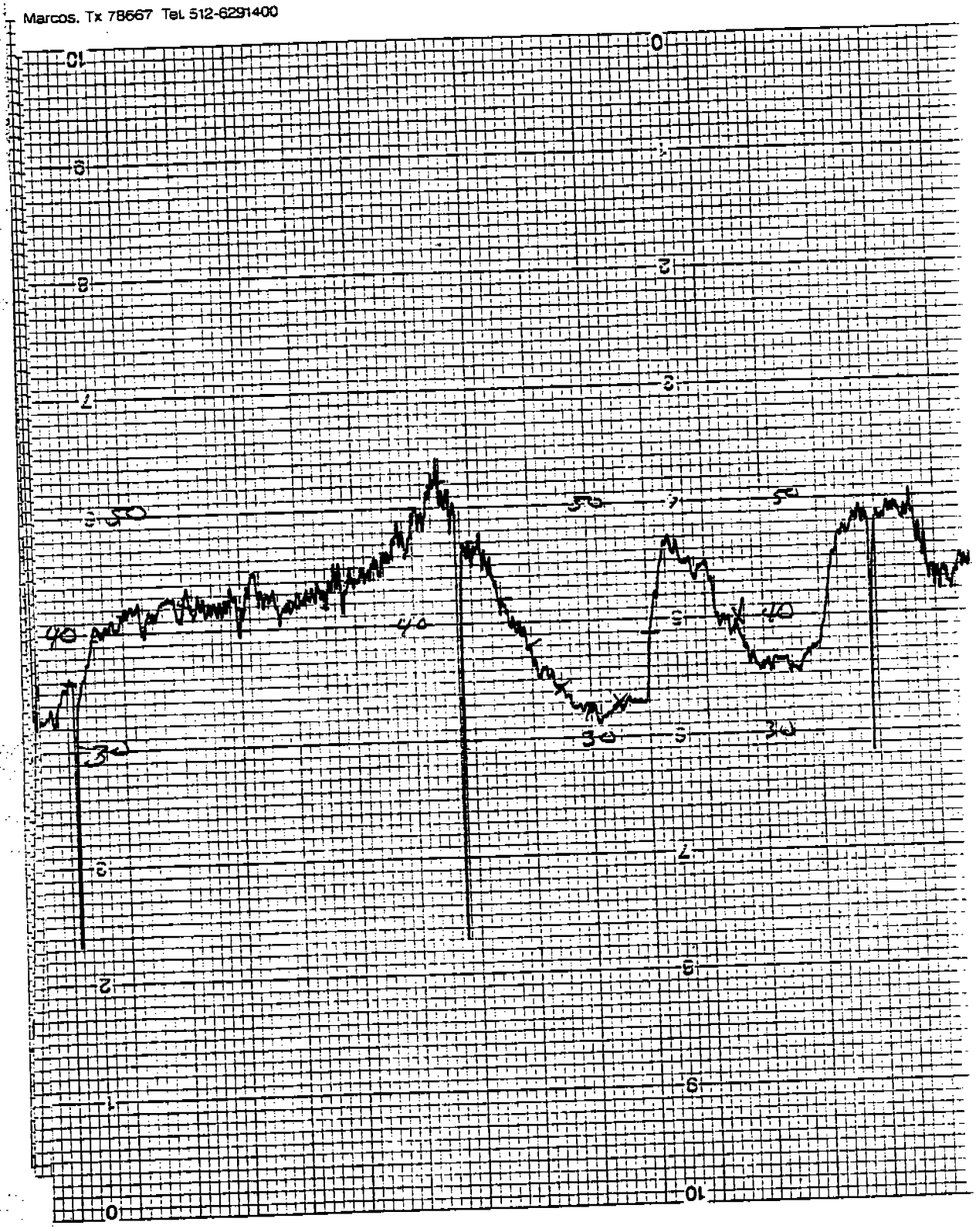
CHART NO. RC-3135



THE RECORDER Co. P.O.BOX 8, San



Marcos. Tx 78667 Tel 512-6291400



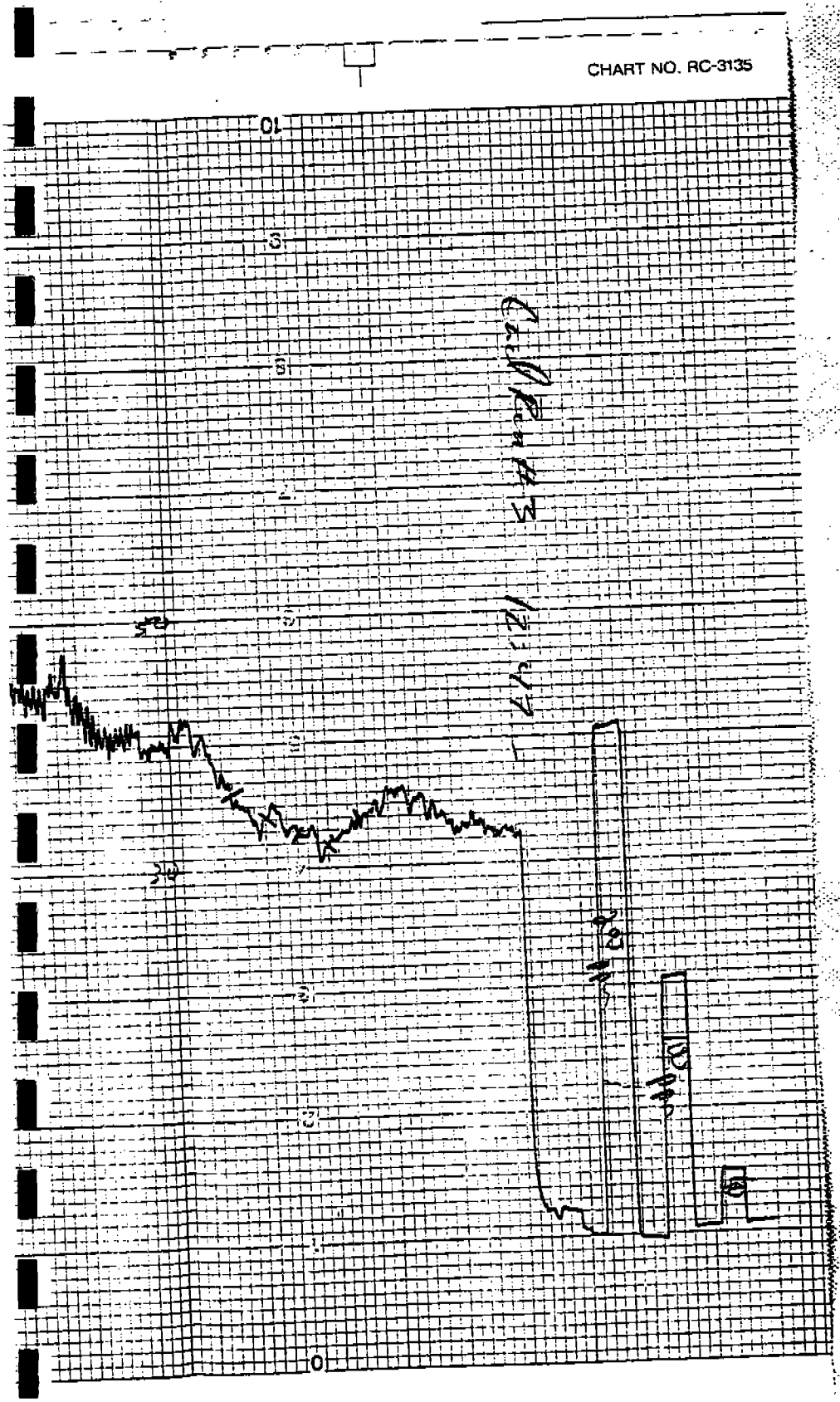


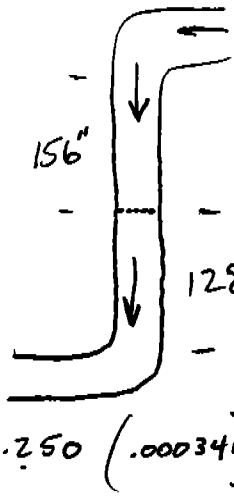
CHART NO. RC-3135
10
9
8
7
6
5
4
3
2
1
0

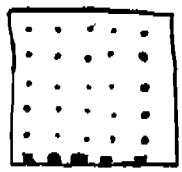
APPENDIX D

PARTICULATE FIELD DATA

Vmstd = 34.856
Vwstd = 7.192
Bws = 17.10
Vel = 37.43
I = 109.49

PLANT: LP-Corrigan
DATE: 6-1-95
REPETITION: 1
LOCATION: Corrigan, TX
OPERATOR: TA JDC
STACK #: #1 cyclone inlet
SAMPLE BOX #: 10
METER BOX #: 11
AMBIENT TEMPERATURE: 80
BAROMETRIC PRESSURE: 29.85
ASSUMED MOISTURE: 12
PROBE LENGTH: 6'
NOZZLE IDAMETER: 1/4" .251, .249, .250 (.000341)
STACK DIAMETER: 54" x 54"
METER H : 1.559635
C FACTOR: .84
METER CO-EFFICIENT: 1.012793





IMPINGERS

	Initial	Final
#1:		210
#2:		105
#3:		
#4:		212.8
#5:		127.8

COMMENTS

CO2	O2
2.5%	16.5%

FILTER TARE:

PRE-TEST LEAK CHECK
Meter: .005 cu. ft. 15 in. HG
Pitots: ✓✓ in. H2O

POST-TEST LEAK CHECK
Meter: .006 cu.ft. 10 in. HG
Pitots: ✓✓ in. H2O

656

P	θ	STATIC PRES.	Ts °F	ΔP	√ΔP	ΔH	Vm FT.3	Tm INLET	Tm OUTLET	OVEN TEMP.	IMP OUTLET TEMP.	VAC CIN
A1	10:25	-9.7	196	.18		.45	533.621	75	74	260	59	1
2			197	.18		.45	534.6	75	74	261	59	1
3	30		197	.19		.46	535.6	76	74	260	59	1
4			198	.23		.55	536.6	76	74	262	59	1
5	35		198	.25		.60	537.71	77	75	261	60	1
B1	37/38		196	.22		.53	539.9	78	75	260	60	1
2			197	.24		.57	539.9	78	75	261	60	1
3	43		197	.26		.62	541.1	79	76	260	60	1
4			198	.33		.79	542.3	80	76	261	60	1
5	48		197	.39		.94	543.6	81	76	260	60	1
C1	51/52		196	.23		.55	545.1	80	76	261	61	1
2			197	.24		.57	546.2	81	77	259	61	1
3	57		198	.31		.74	547.4	82	78	258	61	1
4			197	.43		1.0	548.6	82	78	260	61	1
5	1102		197	.54		1.3	550.2	82	79	261	61	1
D1	04/05		196	.35		.84	551.8	83	79	260	61	1
2			197	.49		1.2	553.2	82	80	261	62	1
3	10		198	.54		1.3	554.9	83	80	260	62	1
4			197	.65		1.6	556.5	84	80	259	62	1
5	15		196	.68		1.6	558.4	84	80	259	62	1
E1	17/18		196	.41		.98	560.4	85	81	256	62	1
2			197	.46		1.1	561.8	85	81	256	62	1
3	23		196	.57		1.4	563.4	85	81	256	62	1
4			196	.65		1.6	565.2	85	82	256	62	1
5	1128		196	.70		1.7	567.01	85	82	257	62	1
AV	11:31		196.9		.6089	.938	568.947		79.32			

35,326

PARTICULATE FIELD DATA

V_{mstd} = 31.198
V_{wstd} = 1.686
B_{ws} = .2359
V_{el} = 35.267
I =

PLANT: LP Corrigan
DATE: 6-1-95
REPETITION: 2

LOCATION: Inlet
OPERATOR: GJS TN
STACK #: Dryer #1
SAMPLE BOX #: 9
METER BOX #: 11
AMBIENT TEMPERATURE: 87°
BAROMETRIC PRESSURE: 29.85
ASSUMED MOISTURE: 20%
PROBE LENGTH: 6'
NOZZLE IDAMETER: 1/4, .254"
STACK DIAMETER: 54"
METER H : 1-559635
C FACTOR: .84
METER CO-EFFICIENT: 1.012793

FILTER TARE: .4985

PRE-TEST LEAK CHECK
Meter: .009 cu. ft. 14 in. HG
Pitots: LL in. H2O

IMPINGERS

	Initial	Final
#1:	100 mL > H_2O	268
#2:	100 mL > H_2O	108
#3:	—	
#4:	200 g S G	208.9
#5:		184.9

COMMENTS

O_2 16.0% CO_2 4.0%

POST-TEST LEAK CHECK
Meter: .010 cu.ft. 10 in. HG
Pitots: in. H2O

P	θ	STATIC PRES.	Ts °F	ΔP	√ΔP	ΔH	Vm FT.3	Tm INLET	Tm OUTLET	OVEN TEMP.	IMP OUTLET TEMP.	VAC CIN
A1	2:45		196	.12		.26	569.387	82	82	250	60	1.0
2			197	.13		.29	70.157	84	84	255	60	1.0
3			194	.16		.35	70.9	85	84	251	60	1.0
4			195	.19		.42	71.84	86	84	253	60	1.0
5			197	.23		.50	72.8	87	84	251	60	1.0
B1			195	.16		.35	73.881	87	85	255	60	1.0
2			194	.18		.40	74.7	87	85	255	60	1.0
3			196	.25		.55	75.71	88	85	254	60	1.0
4			197	.35		.77	76.82	88	85	256	60	1.0
5			195	.35		.77	78.145	89	85	255	60	1.0
C1			195	.29		.48	79.460	88	85	256	60	1.0
2			196	.23		.50	80.503	88	85	257	60	1.0
3			197	.32		.70	81.569	88	86	257	60	1.0
4			197	.40		.88	82.8	89	86	251	60	1.0
5			196	.49		1.1	84.234	90	87	256	60	1.0
D1			195	.30		.66	85.790	90	87	251	60	1.0
2			194	.33		.72	87.000	90	87	253	60	1.0
3			194	.42		.92	88.2	91	88	256	60	1.0
4		9.6-	195	.53		1.2	89.7	91	88	251	60	1.0
5			196	.65		1.4	91.34	91	88	256	60	1.0
E1			195	.38		.83	93.14	92	89	256	60	1.0
2			196	.44		.96	94.51	92	89	253	60	1.0
3			195	.56		1.2	95.945	92	89	255	60	1.0
4			195	.63		1.4	97.6	92	89	254	61	1.0
5			196	.69		1.5	599.41	92	89	256	61	1.0
AV	3:54				.5733		601.261					

31.874

PARTICULATE FIELD DATA

PLANT: LP-Corrigan
DATE: 6-1-95
REPETITION: 3

LOCATION: Inlet
OPERATOR: GRJD, TA
STACK #: dryer #2
SAMPLE BOX #: 10
METER BOX #: 11
AMBIENT TEMPERATURE: 93°
BAROMETRIC PRESSURE: 29.85
ASSUMED MOISTURE: 20%
PROBE LENGTH: 6'
NOZZLE IDAMETER: 1/4
STACK DIAMETER: 54x54
METER H : 1.559635
C FACTOR: .84
METER CO-EFFICIENT: 1.012793

FILTER TARE: .4802

PRE-TEST LEAK CHECK
Meter: .005 cu. ft. 15 in. HG
Pitots: ✓✓ in. H2O

IMPINGERS

	Initial	Final
#1:	100 mL > H_2O	218
#2:	100 mL > H_2O	130
#3:	—	
#4:	200 g SG	214.2
#5:		
		162.2

COMMENTS

O_2 14% CO_2 3.5%

POST-TEST LEAK CHECK
Meter: .005 cu.ft. 10 in. HG
Pitots: ✓✓ in. H2O

P	θ	STATIC PRES.	Ts °F	ΔP	√ΔP	ΔH	Vm FT.3	Tm INLET	Tm OUTLET	OVEN TEMP.	IMP OUTLET TEMP.	VAC CIN
A1	4:25	-9.6	196	.18		.41	601.551	88	88	250	59	160
2			197	.15		.35	602.5	89	88	251	59	1
3	30		197	.16		.37	603.4	89	88	250	59	1
4			197	.18		.41	604.3	89	88	249	59	1
5	35		196	.26		.59	605.3	90	88	255	59	1
B1	37.5/39		197	.19		.44	606.4	91	88	254	60	1
2			196	.20		.46	608.4	91	88	250	60	1
3	44		196	.26		.46	610.5	91	88	251	60	1
4			195	.32		.60	611.6	92	88	251	60	1
5	49		195	.40		.92	612.9	92	89	250	60	1
C1	51.5/53		195	.20		.46	614.4	93	89	260	61	1
2	/		196	.22		.51	615.4	93	89	256	61	1
3	58		195	.26		.59	616.5	92	89	250	61	1
4			195	.36		.83	617.6	92	89	251	61	1
5	503/		194	.47		1.1	619.0	92	89	250	61	1
D1	05.5/06		194	.32		.73	620.6	92	90	251	62	1
2			194	.30		.69	621.8	92	90	252	62	1
3	11		195	.37		.85	623.1	92	90	251	62	1
4			194	.52		1.2	624.5	92	90	253	62	1
5	16		193	.65		1.5	626.1	92	90	251	62	1
E1	18.5/19		194	.41		.94	627.9	92	90	255	62	1
2	/		193	.44		1.0	629.4	92	90	260	63	1
3	24		193	.56		1.3	630.9	92	90	261	63	1
4			193	.66		1.6	632.6	92	90	265	63	1
5	29		192	.67		1.6	634.5	91	89	261	63	1
AV	5:32.30						636.358					

30.807

PARTICULATE FIELD DATA

PLANT: LP Corrigan
DATE: 6-2-95
REPETITION: 1

LOCATION: Corrigan, TX
OPERATOR: JD cal T41
STACK #: #1 inlet
SAMPLE BOX #: 10
METER BOX #: 11
AMBIENT TEMPERATURE: 80
BAROMETRIC PRESSURE: 29.9
ASSUMED MOISTURE: 20%
PROBE LENGTH: 6'
NOZZLE IDAMETER: 5/16 .322, .323, .321 (.322
STACK DIAMETER: 54 x 54 (20.25 sq ft)
METER H : 1.559605
C FACTOR: .84
METER CO-EFFICIENT: 1.012793

10

0 - 1.3291
1 - 2.7714
2 - 2.5

IMPINGERS

	Initial	Final
#1:	200 ml > DNPH	318
#2:	200 ml	300
#3:	—	48
#4:	200g SG	213.1
#5:		479.1

COMMENTS

$\frac{CO_2}{4.5}$ $\frac{O_2}{16}$

FILTER TARE: —

PRE-TEST LEAK CHECK
Meter: .005 cu. ft. 15 in. HG
Pitots: ✓ in. H2O

POST-TEST LEAK CHECK
Meter: .015 cu.ft. 15 in. HG
Pitots: ✓ in. H2O

P #	θ	STATIC PRES.	Ts °F	ΔP	√ΔP	ΔH	Vm FT.3	Tm INLET	Tm OUTLET	OVEN TEMP.	IMP OUTLET TEMP.	VAC CIN
A1	8:31	-9.8	195	.18		.89	638.303	75	74	261	59	1
2			195	.15		.75	639.2	76	74	260	59	1
3	36		196	.23		1.1	640.5	76	74	261	59	1
4			196	.25		1.2	642.1	78	75	260	59	1
5	41,		195	.26		1.3	643.8	79	75	263	59	1
B1	43.5/44		194	.21		1.0	645.5	79	76	262	59	1
2			195	.18		.89	647.0	80	76	260	60	2
3	49		195	.20		.99	648.5	81	77	259	60	3
4			196	.28		1.4	649.9	81	77	265	60	3
5	54		195	.36		1.8	651.7	81	77	261	60	4
C1	56.5/57		196	.22		1.1	653.7	81	78	260	60	5
2	"		196	.23		1.1	655.3	81	78	263	60	5
3	902		196	.25		1.2	656.9	81	78	260	61	5
4			195	.37		1.8	658.6	81	78	261	61	5
5	07		195	.44		2.2	660.6	81	78	260	61	5
D1	09.5/10		194	.23		1.1	662.8	82	79	261	61	6
2	"		195	.25		1.2	664.4	82	79	263	62	6
3	15		196	.31		1.5	666.1	82	79	261	62	7
4			195	.40		1.9	667.9	82	79	260	62	7
5	20,		194	.60		2.9	670.1	82	79	262	62	8
E1	22.5/23		195	.35		1.7	672.7	82	80	260	62	10
2	"		195	.33		1.6	674.7	82	80	260	62	13
3	28		196	.43		2.1	676.6	83	80	262	62	15
4			195	.61		3.0	678.8	83	80	261	62	15
5	33		196	.65		3.2	681.4	83	80	263	63	15
Av	933.5		195.2		.5533	1.5568	684.116		79.08			

45.813

PARTICULATE FIELD DATA

PLANT: LP Corrigan
DATE: 6-2-95
REPETITION:

LOCATION: Inlet
OPERATOR: CJ DJ TA
STACK #: Dryer #1
SAMPLE BOX #: 9
METER BOX #: 11
AMBIENT TEMPERATURE: 85°
BAROMETRIC PRESSURE: 29.9
ASSUMED MOISTURE: 20%
PROBE LENGTH: 6'
NOZZLE IDAMETER: 5/16 (.312)
STACK DIAMETER: 54"x54"
METER H : 1.559635
C FACTOR: .84
METER CO-EFFICIENT: 1.012793

FILTER TARE: N/A

PRE-TEST LEAK CHECK
Meter: 012 cu. ft. 12 in. HG
Pitots: in. H2O

IMPINGERS

	Initial	Final
#1:	200 mL > DNPH	324
#2:	200 mL	289
#3:	—	35
#4:	200 SG	222.3
#5:		470.3

COMMENTS

O_2 16.0% CO_2 4.0%

POST-TEST LEAK CHECK
Meter: 011 cu.ft. 15 in. HG
Pitots: // in. H2O

	P	θ	STATIC PRES.	Ts °F	ΔP	√ΔP	ΔH	Vm FT.³	Tm INLET	Tm OUTLET	OVEN TEMP.	IMP OUTLET TEMP.	VAC CIN
	#1	10:13		197	.12		.60	684.575	82	82	250	57	1.0
	2			196	.13		.65	85.734	85	83	256	57	1.0
	3			197	.15		.75	86.941	85	83	257	58	1.0
	4			198	.18		.90	88.238	86	83	256	58	1.0
	5			197	.29		1.4	89.658	87	84	266	58	1.0
	B 1			198	.16		.8	91.961	88	84	259	58	1.0
	2			197	.17		.84	92.80	88	84	256	59	1.0
	3			197	.24		1.2	94.18	87	84	251	59	1.0
	4			196	.32		1.6	95.8	87	85	256	60	1.0
	5			197	.37		1.8	97.714	88	85	257	60	1.0
	C 1		-9.3	196	.22		1.1	699.75	86	85	249	60	1.0
	2			195	.20		1.0	701.32	88	85	251	60	1.0
30	3			197	.26		1.3	702.819	88	85	256	60	1.0
	4			198	.40		2.0	704.52	89	85	251	60	1.0
35	5			195	.44		2.2	6.164	90	86	251	61	1.0
	D 1			196	.32		1.6	8.462	90	86	256	61	1.0
40	2			196	.29		1.4	10.756	89	86	265	61	2.0
	3			195	.36		1.8	12.55	89	86	256	61	2.0
45	4			196	.54		2.7	14.567	89	86	256	61	2.0
	5			196	.50		2.5	17.027	89	87	251	61	2.0
50	E 1			197	.34		1.7	19.395	89	87	256	61	2.0
	2			198	.33		1.6	21.347	89	87	253	62	2.0
55	3			198	.43		2.1	23.270	90	87	254	62	2.0
	4			196	.59		3.0	25.465	90	87	253	62	2.0
60	5			195	.66		3.3	28.036	91	89	254	62	2.0
62.5	Av	11:20						730.756					

46.1/81

PARTICULATE FIELD DATA

PLANT: LP - Corrigan
DATE: 6-2-95
REPETITION: 3

LOCATION: Corrigan, TX
OPERATOR: JD CJ TA
STACK #: #1 Dryer inlet
SAMPLE BOX #: 10
METER BOX #: 11
AMBIENT TEMPERATURE: 88
BAROMETRIC PRESSURE: 29.9
ASSUMED MOISTURE: 20%
PROBE LENGTH: 6'
NOZZLE IDAMETER: 5/16 .325, .322, .321
STACK DIAMETER: 54 x 54
METER H : 1.559635
C FACTOR: .84
METER CO-EFFICIENT: 1.012793

IMPINGERS

	Initial	Final
#1:	200 ml > DWPH	286
#2:	200 ml	272
#3:	—	13
#4:	200 g	211.7
#5:		382.7

COMMENTS

$\frac{CO_2}{16}$ $\frac{O_2}{4}$

FILTER TARE:

PRE-TEST LEAK CHECK
Meter: .010 cu. ft. 15 in. HG
Pitots: ✓✓ in. H2O

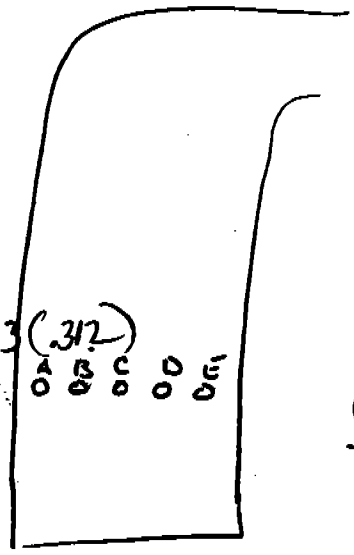
POST-TEST LEAK CHECK
Meter: .005 cu.ft. 10 in. HG
Pitots: ✓✓ in. H2O

P	θ	STATIC PRES.	Ts °F	ΔP	√ΔP	ΔH	Vm FT.3	Tm INLET	Tm OUTLET	OVEN TEMP.	IMP OUTLET TEMP.	VAC CIN
A1	1150	-9.6	197	.19		.94	731.094	88	88	260	60	1
2			196	.17		.84	732.5	88	88	255	60	1
3	55		196	.18		.89	733.9	88	88	261	60	1
4			196	.23		1.1	735.3	89	88	260	60	1
5	1200		195	.25		1.2	736.9	89	88	256	60	1
B1	2.5/03		195	.16		.79	738.6	89	88	253	61	1
2	/		196	.17		.85	739.9	89	88	251	61	1
3	08		197	.25		1.2	741.3	89	88	261	61	1
4			196	.31		1.5	743.0	90	88	260	61	1
5	13		195	.35		1.7	744.9	90	88	255	61	1
C1	15.5/16		194	.24		1.2	746.8	91	88	260	61	1
2	/		195	.30		1.5	748.5	91	89	259	62	2
3	21		196	.40		1.9	750.3	91	89	260	62	2
4			194	.35		1.7	752.5	91	89	260	62	3
5	26		195	.34		1.7	754.4	91	89	255	62	3
D1	28.5/29		194	.30		1.5	756.4	91	89	254	62	3
2	/		195	.35		1.7	758.2	91	89	251	62	3
3	34		196	.40		1.9	760.2	91	89	250	62	3
4			197	.40		1.9	762.3	91	89	251	62	3
5	39		195	.45		2.2	764.4	90	89	250	63	3
E1	41.5/42		194	.32		1.6	766.7	90	89	251	63	3
2	/		196	.33		1.6	768.6	90	89	251	63	3
3	47		196	.51		8.5	770.5	90	89	250	63	3
4			196	.60		2.9	772.9	90	89	250	63	3
5	52		194	.60		2.9	775.5	90	89	251	63	3
AV	1254.5						778.083					

BWS 18.39%
ISO 102.55

PLANT: LR Corrigan
DATE: 6-2-95
REPETITION: 1

LOCATION: Inlet #2
OPERATOR: MT & DB
STACK #: Inlet #2
SAMPLE BOX #: HCHO
METER BOX #: 12
AMBIENT TEMPERATURE: 85°
BAROMETRIC PRESSURE: 27.25
ASSUMED MOISTURE: 20?
PROBE LENGTH: 6'
NOZZLE IDAMETER: .311 .312 .313 (.312)
STACK DIAMETER: 53.5" 53.5"
METER H : 1.590721
C FACTOR: .84
METER CO-EFFICIENT: 1.004179



IMPINGERS

	Initial	Final
#1:	100 mls DI PH	234
#2:	100	176
#3:	Knock out	31
#4:	200g. Silica Gel	213.1
#5:		254.1

COMMENTS

CO_2	O_2
4%	17.5%

FILTER TARE: —

PRE-TEST LEAK CHECK
Meter: 0.000 cu. ft. 15" in. HG
Pitots: ✓ in. H20

POST-TEST LEAK CHECK
Meter: 0.000 cu.ft. 7 in. HG
Pitots: in. H20

P	θ	STATIC PRES.	Ts °F	ΔP	√ΔP	ΔH	Vm FT.³	Tm INLET	Tm OUTLET	OVEN TEMP	IMP OUTLET TEMP	VAC CIN
A 1	8:30		230	.54		3.1	457.116	69	69	250	55	5
2	8:33		235	.61		3.6	60.2	75	70	250	55	5
3	8:36		226	.60		3.5	63.3	78	70	253	55	5
4	8:39		150	.62		3.6	66.4	81	72	250	55	5
B 1	42/44		230	.32		1.9	69.6	78	73	255	55	5
2	8:47		236	.42		2.4	71.9	82	73	251	55	5
3	8:50		230	.44		2.6	74.5	84	74	256	56	5
4	853	-13.5	127	.83		4.8	77.2	85	74	260	56	5
C 1	56/58		232	.23		1.3	80.9	80	76	257	56	5
2	9:01		235	.29		1.7	82.8	83	76	258	56	3
3	9:04		229	.45		2.6	85.0	83	76	260	56	3
4	9:07		144	.60		3.5	87.7	86	76	258	56	5
D 1	9:10/12		215	.23		1.3	90.9	80	77	250	56	3
2	9:15		232	.28		1.6	92.8	84	77	253	56	3
3	9:18		222	.40		2.3	94.9	86	77	250	56	3
4	9:21		220	.60		3.5	97.6	86	77	250	56	3
E 1	9:24/25		196	.23		1.3	500.7	83	77	257	56	3
2	9:28		228	.26		1.5	02.6	87	78	257	56	3
3	9:31		222	.38		2.2	04.7	87	78	257	56	3
4	9:34		137	.88		5.1	07.2	89	78	260	56	3
	9:37						511.033					
AV			208.8		.6644	2.67	53.917 ~~877~~					

75.24

PARTICULATE FIELD DATA

BWS 17.16 %
ISO 99.125 %

PLANT: LP Corrugated
DATE: 6-2-95
REPETITION: 2

LOCATION: Inside
OPERATOR: MT & DB
STACK #: Inlet #2
SAMPLE BOX #: Hello
METER BOX #: 12
AMBIENT TEMPERATURE: 75
BAROMETRIC PRESSURE: 29.75
ASSUMED MOISTURE:
PROBE LENGTH: 6'
NOZZLE IDAMETER: 5/16
STACK DIAMETER: 53.5 x 53.5
METER H : 1.590121
C FACTOR: .84
METER CO-EFFICIENT: 1.004179

IMPINGERS

	Initial	Final
#1:	100mls > DNPH	247
#2:	100mls > DNPH	145
#3:	Knockout	16
#4:	200 g. Silica Gel	212.1
#5:		221.1

COMMENTS

CO_2 4.5% O_2 16%

FILTER TARE: —

PRE-TEST LEAK CHECK
Meter: 0.000 cu. ft. 15 in. HG
Pitots: ✓ in. H2O

POST-TEST LEAK CHECK
Meter: 0.000 cu.ft. 4 in. HG
Pitots: ✓ in. H2O

P ≒	Θ	STATIC PRES.	Ts °F	ΔP	√ΔP	ΔH	Vm FT.3	Tm INLET	Tm OUTLET	OVEN TEMP.	IMP OUTLET TEMP.	VAC CIN
A 1	10:13		225	.64		3.7	515.814	82	79	250	60	2.5
2	16		230	.66		3.8	19.0	87	80	260	60	2.5
3	19		219	.61		3.5	22.3	85	80	255	60	2.5
4	22		160	.55		3.2	25.5	90	80	260	60	2.5
B 1	10:25/10:27		214	.34		1.9	28.5	85	90	250	60	2.5
2	30		228	.45		2.6	30.9	89	80	250	60	3
3	33		230	.49		2.8	33.6	89	80	249	60	3
4	36		165	.60		3.5	36.4	89	81	250	60	3
C 1	10:37/10:39		215	.22		1.2	539.614	89	81	250	60	3
2	42		210	.26		1.5	41.5	89	81	256	61	2.5
3	45	-11.5	189	.35		2.0	43.6	89	91	257	61	2.5
4	48		167	.52		3.0	45.9	90	81	254	61	2.5
D 1	10:51/10:53		224	.22		1.2	48.9	90	82	250	61	2.5
2	56		240	.27		1.6	50.8	90	82	250	61	2.5
3	59		233	.40		2.3	52.9	91	81	250	61	3.0
4	11:02		169	.52		3.0	55.5	91	82	255	61	3.0
E 1	11:05/11:07		220	.24		1.4	58.4	93	92	250	61	2.5
2	11:10		224	.30		1.7	60.4	94	83	250	61	2.5
3	11:13		230	.42		2.4	62.6	94	83	250	61	2.5
4	11:16		170	.50		2.9	65.2	96	84	250	61	3.0
	11:19						568.135					
AV			208.1		.6445	2.46	52.32		85.37			

PARTICULATE FIELD DATA

PLANT: LD
DATE: 6-2-95
REPETITION: 3

LOCATION: Coal Gas
OPERATOR: MT DB RT
STACK #: Inlet # 2
SAMPLE BOX #: HeHo
METER BOX #: 12
AMBIENT TEMPERATURE: 82°
BAROMETRIC PRESSURE: 29.75
ASSUMED MOISTURE:
PROBE LENGTH: 6'
NOZZLE IDAMETER: 5/16
STACK DIAMETER: 53.5 x 33.5"
METER H : 1.590721
C FACTOR: .84
METER CO-EFFICIENT: 1.004179

IMPINGERS

	Initial	Final
#1: 100 mls	> DNPH	246
#2: 100 mls		134
#3: Knock out		8
#4: 200g Si G		215.5
#5:		203.5

COMMENTS

O_2 17% CO_2 4.5%

FILTER TARE: —

PRE-TEST LEAK CHECK
Meter: 0.000 cu. ft. 15 in. HG
Pitots: ✓ in. H2O

POST-TEST LEAK CHECK
Meter: 0.000 cu. ft. 8 in. HG
Pitots: ✓ in. H2O

P #	Θ	STATIC PRES.	Ts °F	ΔP	√ΔP	ΔH	Vm FT.3	Tm INLET	Tm OUTLET	OVEN TEMP	IMP OUTLET TEMP	VAC (IN
A 1	11:47		212	.64		3.7	568.911	82	82	250	60	6
2	11:50		230	.66		3.8	72.1	85	82	250	60	6
3	53		227	.60		3.5	75.4	87	82	256	60	6
4	56		132	.80		4.6	78.6	87	82	250	60	6
B 1	11:59/12:00		232	.30		1.7	82.2	87	83	250	60	6
2	03		240	.45		2.6	84.4	88	83	250	60	6
3	06		226	.48		2.8	87.1	90	83	250	60	6
4	09		145	.81		4.7	89.9	92	83	250	60	6
C 1	12:12/12:13		209	.27		1.5	93.5	94	84	250	60	6
2	16		224	.32		1.8	95.6	89	84	260	60	6
3	19		222	.39		2.2	96.6	91	84	261	60	6
4	22		136	.60		3.5	99.1	92	84	260	60	6
D 1	12:25/27		226	.21		1.2	602.290	89	85	250	60	6
2	12:30		235	.27		1.6	04.1	90	85	251	60	6
3	33	-11.0	280	.42		2.4	06.2	90	86	250	60	6
4	36		162	.58		3.4	08.9	89	86	250	60	6
E 1	12:39/12:40		237	.25		1.4	11.9	89	86	250	60	6
2	43		240	.28		1.6	14.0	89	85	249	60	6
3	46		235	.32		1.8	16.1	90	85	250	60	6
4	49		171	.68		3.9	18.4	90	85	251	60	
	12:52						619.447					
AV							50.536					

PARTICULATE FIELD DATA

As 19.87

4 — 13.4 — 3 — 13.4 — 2 — 13.4 — 1 — 6.7 — 14"

PLANT: Conagra LP
DATE: 6/1/85
REPETITION: 1

53½
54" OD

LOCATION: #2 Inlet Dryer
OPERATOR: MT DB
STACK #: 2
SAMPLE BOX #: PM
METER BOX #: 12
AMBIENT TEMPERATURE: 70
BAROMETRIC PRESSURE: 29.75
ASSUMED MOISTURE: 2%
PROBE LENGTH: 5'
NOZZLE IDAMETER: 1/4" .256 (.2563) .255 .258
STACK DIAMETER: 53.5 x 53.5
METER H : 1.5907
C FACTOR: .84
METER CO-EFFICIENT: 1.0042

4" port   15½"   A B C D E

.0003537

IMPINGERS

	Initial	Final
#1:	100 ml H_2O	247
#2:	100	178
#3:	—	
#4:	200 g SG	213.1
#5:		184.1

COMMENTS

CO_2 4% O_2 16%

STO 0 = .9265
STO 1 = 3.2
STO 2 = 3.0

FILTER TAPE: 4747

PRE-TEST LEAK CHECK
Meter: 0.008 cu. ft. 15 in. HG
Pitots: ✓ in. H20

POST-TEST LEAK CHECK
Meter: 0.010 cu. ft. 7 in. HG
Pitots: ✓ in. H20

-10.0   200—250

	P	Θ	STATIC PRES.	Ts °F	ΔP	√ΔP	ΔH	Vm FT.³	Tm INLET	Tm OUTLET	OVEN TEMP.	IMP OUTLET TEMP.	VAC (IN
20 pts 180	A1	10:25		230	.47		2.0	346.724	70	70	251	67	2
3 min/pt 199	2	10:28		229	.64		1.9	349.107	74	70	253	67	2
208	3	10:31		224	.61		1.8	351.393	78	71	252	67	2
219	4	10:34		202	.60		1.7	353.659	80	71	254	68	2
185	B1	10:37 / 10:38	-9.1	210	.31		1.0	355.801	78	72	254	68	2
208	2	10:41		230	.41		1.3	357.514	80	73	253	68	2
226	3	10:44		226	.49		1.5	359.428	82	73	253	68	2
210	4	10:47		173	.59		2.0	361.504	84	74	250	68	2
180	C1	10:50 / 10:51		226	.22		.7	363.888	80	75	251	68	2
200	2	10:54		232	.32		.8	365.275	83	75	257	68	2
219	3	10:57		228	.43		1.3	366.789	85	76	253	68	2
202	4	11:00		158	.58		1.7	368.728	87	76	255	69	2
189	D1	11:03 / 11:04		219	.21		.7	370.911	81	77	255	69	2
224	2	11:07		232	.27		.9	372.265	84	77	253	69	2
220	3	11:10		228	.41		1.4	373.838	87	78	254	69	2
226	4	11:13		183	.55		1.5	375.801	88	78	253	69	2
181	E1	11:16 / 11:17		218	.18		.8	377.832	85	79	251	69	2
213	2	11:20		222	.35		.8	379.284	87	79	252	69	2
227	*3	11:40		226	.46		1.3	380.797	79	78	255	68	2
205	4	11:43		173	.61		1.7	382.712	83	78	254	69	2
		11:46						384.896					
	AV			213.45	.4221	.6497	1.34	38.172		77.62			

*Lost Power

TS 675   Tm 560   .00034   MS PS 920

PARTICULATE FIELD DATA

19.88

PLANT: Corrigan LP
DATE: 6-1-95
REPETITION: 2

LOCATION: Dryer inlet
OPERATOR: DB, MT
STACK #: #2
SAMPLE BOX #: 8
METER BOX #: 12
AMBIENT TEMPERATURE: 80
BAROMETRIC PRESSURE: 29.75
ASSUMED MOISTURE: 10%
PROBE LENGTH: 5'
NOZZLE DIAMETER: 1/4" .2583
STACK DIAMETER: 53.5" X 53.5
METER H : 1.59072
C FACTOR: .184
METER CO-EFFICIENT: 1.0042

FILTER TARE: .4999

PRE-TEST LEAK CHECK
Meter: 0.012 cu. ft. 15 in. HG
Pitots: in. H2O

IMPINGERS

	Initial	Final
#1:	100ml S > H_2O	242
#2:	100ml S > H_2O	1 MS
#3:	—	1.0
#4:	200 gr. S.G.	212.1
#5:		213.1

COMMENTS
∠O2 3.5% O2 17%

POST-TEST LEAK CHECK
Meter: cu.ft. in. HG
Pitots: in. H2O

	P #	θ	STATIC PRES.	Ts °F	ΔP	√ΔP	ΔH	Vm FT.3	Tm INLET	Tm OUTLET	OVEN TEMP.	IMP OUTLET TEMP.	VAC CIN
	A 1	2:45		225	.10		1.6	385.144	81	81	252	67	2
3	2	2:48		223	.61		1.6	387.282	83	81	251	67	3
6	3	2:51		225	.56		1.5	389.439	87	82	251	67	3
9	4	2:54	-13P	193	.59		1.6	391.506	89	82	252	67	3
12	B 1	2:57 3:58		210	.31		.8	393.627	87	83	254	68	2
15	2	3:01		230	.41		1.1	395.164	90	83	251	68	2
18	3	3:04		228	.46		1.2	396.932	92	84	252	68	2
21	4	3:07		144	.64		1.7	398.805	93	84	252	68	2
24	C 1	3:10 3:11		211	.21		.6	401.014	88	85	255	68	2
27	2	3:14		229	.29		.8	402.279	91	85	253	68	2
30	3	3:17		225	.42		1.1	403.766	94	86	252	68	2
33	4	3:20		198	.54		1.5	405.556	95	86	254	68	2
36	D 1	3:23 3:24		217	.20		.5	407.585	89	87	253	69	2
39	2	3:27		231	.27		.7	408.820	93	87	252	69	2
42	3	3:30		228	.42		1.1	410.255	94	87	253	69	2
45	4	3:33		161	.52		1.4	412.044	95	87	252	69	2
48	E 1	3:36 3:37		200	.22		.6	414.036	90	87	254	69	2
51	2	3:40		231	.27		.7	415.331	93	87	252	69	2
54	3	3:43		228	.41		1.1	416.766	96	88	252	69	2
57	4	3:46		227	.46		1.2	418.534	97	88	253	69	2
60		3:49						420.407					
	AV			213.2		.6385	1.12	35263		87.725			

PARTICULATE FIELD DATA

PLANT: Corrigan LP
DATE: 6-1-95
REPETITION: 3

LOCATION: Dryer inlet
OPERATOR: DB, MT
STACK #: #2
SAMPLE BOX #:
METER BOX #: 12
AMBIENT TEMPERATURE: 82°
BAROMETRIC PRESSURE: 29.75
ASSUMED MOISTURE: 20%
PROBE LENGTH: 5'
NOZZLE IDAMETER: ¼"
STACK DIAMETER: 52.5 x 53.5
METER H : 1.5907
C FACTOR: .84
METER CO-EFFICIENT: 1.0042

IMPINGERS

	Initial	Final
229	#1: 100 ml > H_2O	229
124	#2: 100 ml > H_2O	124
8	#3:	8
	#4: 200 gl. S.G	215.5
	#5:	176.5

COMMENTS

CO2 4% O2 16.5%

FILTER TARE: .4499

PRE-TEST LEAK CHECK
Meter: 0.008 cu. ft/5 in. HG
Pitots: ✓ in. H2O

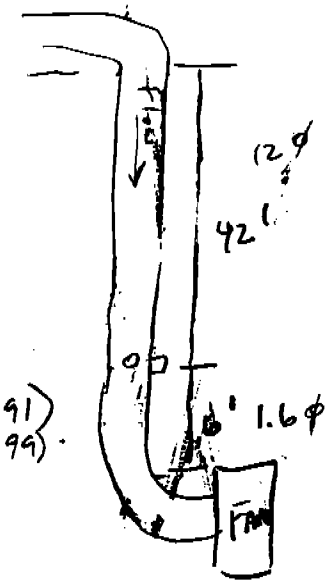
POST-TEST LEAK CHECK
Meter: 0.009 cu.ft. 7 in. HG
Pitots: ✓ in. H2O

	P #	θ	STATIC PRES.	Ts °F	ΔP	√ΔP	ΔH	Vm FT.3	Tm INLET	Tm OUTLET	OVEN TEMP.	IMP OUTLET TEMP.	VAC CIN
	A 1	4:25		222	.161		1.6	420.715	87	86	254	67	2
3	2	4:28		230	.58		1.6	422.871	89	86	254	67	2
6	3	4:31		229	.55		1.5	424.974	91	86	253	67	2
9	4	4:34		222	.149		1.3	427.022	93	86	254	67	2
12	B 1	4:37 4:38		228	.41		1.1	428.955	88	86	255	67	2
15	2	4:41		230	.46		1.7	430.723	91	86	254	67	2
18	3	4:44		220	.39		1.1	432.596	94	86	256	68	2
21	4	4:47	-13.2	193	.52		1.4	434.321	95	86	254	68	2
24	C 1	4:50 4:52		221	.20		.5	436.312	90	87	255	68	2
27	2	4:55		233	.31		.8	437.546	93	87	254	68	2
30	3	4:58		227	.40		1.1	439.084	95	87	256	68	2
33	4	5:01		195	.61		1.6	440.831	97	88	255	68	2
36	D 1	5:04 5:05		222	.19		.5	442.987	91	88	256	69	2
39	2	5:08		233	.25		.6	444.191	93	88	254	69	2
42	3	5:11		228	.41		1.1	445.571	95	88	255	69	2
45	4	5:14		152	.51		1.4	447.139	97	88	253	69	2
48	E 1	5:17 5:20		205	.20		.5	449.311	90	88	255	69	2
51	2	5:23		232	.26		.7	450.546	93	88	254	69	2
54	3	5:26		228	.42		1.1	451.954	95	88	255	69	2
57	4	5:29		185	.52		1.4	453.714	96	88	253	69	2
60		5:32						455.735					
47													
	AV							35.020					

Vcl = 70.85

PLANT: L.P
DATE: 5-1-95
REPETITION: 1

LOCATION: Inlet #3
OPERATOR: J.S
STACK #:
SAMPLE BOX #:
METER BOX #: 10
AMBIENT TEMPERATURE: 80°
BAROMETRIC PRESSURE:
ASSUMED MOISTURE: 10%
PROBE LENGTH: 6'
NOZZLE IDAMETER: .191, .192, .190, (.191) (.000199).
STACK DIAMETER: 42"
METER H : 1.485547
C FACTOR: .84
METER CO-EFFICIENT: .9889339



IMPINGERS

	Initial	Final
#1:	100	221
#2:	100	120
#3:	0	209.9
#4:	200 grns S.G	150.9
#5:		151

COMMENTS

CO_2	O_2
2%	18%

FILTER TARE: .4991

PRE-TEST LEAK CHECK
Meter: 0.000 cu. ft.
Pitots: ✓ 15 in. HG 195 in. H2O

STO 0 = .5778
STO 1 = 3.187
STO 2 = 4

POST-TEST LEAK CHECK
Meter: 0.00 cu.ft. 5
Pitots: ✓ in. HG in. H2O

4 min per Point — Run — Traverse

P #	Θ	STATIC PRES.	Ts °F	ΔP	√ΔP	ΔH	Vm FT.³	Tm INLET	Tm OUTLET	OVEN TEMP.	IMP OUTLET TEMP.	VAC CIN
1	10:23	-8.7	157	.1.1	1.1 /109	1.17	218.274	86	82	258	68	2
2	10:27		154	1.3	1.4 /123	1.38	220.7	87	83	257	70	2
3	10:31		135	1.3	1.3 /116	1.38	223.3	90	83	262	70	2
4	10:35		154	1.4	1.5 /118	1.48	225.9	92	84	255	70	3
5	16:39		128	1.3	1.4 /105	1.38	228.7	95	85	252	70	2
6	10:43		149	1.2	1.4 /107	1.27	231.3	95	86	261	70	2
7	10:47		142	1.0	1.1 /99	1.06	233.8	96	87	257	70	2
8	10:51		148	.89	.88 /106	.94	236.1	96	87	259	70	2
B1	~~10:55~~ 10:56		146	.85	.92 /118	.90	238.360	91	86	260	70	2
2	11:00		147	1.3	1.4 /154	1.38	240.5	94	88	259	70	2
3	11:04		146	1.4	1.5 /159	1.48	243.1	97	89	260	70	3
4	11:08		148	1.4	1.5 /160	1.48	245.8	98	90	261	70	3
5	11:12	lost	143	1.3	1.4 /152	1.38	248.6	99	90	256	70	3
6	11:16	Power	146	1.2	1.2 /150	1.27	251.2	99	91	259	70	2
7	11:20	11:21	129	.99	1.2 /154	1.05	253.7	100	91	260	70	2
8	11:38	11:35	122	.80	.85 /133	.85	256.0	94	91	250	70	2
							258.128					
Av			143.4	.078		1.24	39.854		90.69			

PARTICULATE FIELD DATA

111

PLANT: G.P
DATE: 6-1-95
REPETITION: 2

LOCATION: Inlet #3
OPERATOR: J.S
STACK #:
SAMPLE BOX #: 11
METER BOX #: 10
AMBIENT TEMPERATURE: 90°
BAROMETRIC PRESSURE:
ASSUMED MOISTURE:
PROBE LENGTH: 6'
NOZZLE IDAMETER: .191
STACK DIAMETER: 42"
METER H : 1.485547
C FACTOR: .84
METER CO-EFFICIENT: .9869339

IMPINGERS

	Initial	Final
#1: 100 } mls H_2O		202
#2: 100 }		121
#3: 0		16
#4: 200 grms S.G		215.9
#5: 0		154.9

COMMENTS

CO_2 2.0% O_2 17.5%

FILTER TARE: .4777

PRE-TEST LEAK CHECK
Meter: 0.00 cu. ft. .15 in. HG
Pitots: ✓ in. H20

POST-TEST LEAK CHECK
Meter: 0,00 cu.ft. 7 in. HG
Pitots: — in. H20

P #	Θ	STATIC PRES.	Ts °F	ΔP	√ΔP	ΔH	Vm FT.3	Tm INLET	Tm OUTLET	OVEN TEMP.	IMP OUTLET TEMP.	VAC CIN
B1	2:43		154	1.0		1.09	260.127	92	92	255	70	2
2	2:47		151	1.3		1.42	262.4	95	92	265	70	2
3	2:51	-9.0	152	1.3		1.42	265.1	99	92	263	70	2
4	2:55		151	1.3		1.42	267.8	100	93	258	70	2
5	2:59		149	1.2		1.31	270.5	102	94	263	70	2
6	3:03		152	1.1		1.20	273.0	103	95	255	70	2
7	3:07		142	1.1		1.20	275.5	103	95	263	70	2
8	3:11		136	.84		.92	278.0	104	96	264	70	2
A1	3:15 3:16		144	1.0		1.09	280.155	98	97	263	70	2
2	3:20		149	1.2		1.31	282.5	103	97	258	70	2
3	3:24		146	1.3		1.42	285.0	105	98	255	70	3
4	3:28		150	1.2		1.31	287.7	106	98	256	70	2
5	3:32		155	1.2		1.31	290.3	106	99	261	70	2
6	3:36		149	1.2		1.31	292.8	105	99	254	70	5
7	3:40		148	1.3		1.42	295.4	105	99	255	70	5
8	3:44		134	.90		.98	298.1	105	99	260	70	5
	3:48						300.373					
AV			147.6		1.071	1.258	40.246		98.97			

PARTICULATE FIELD DATA

PLANT: L.P
DATE: 6-1-95
REPETITION: 3

LOCATION: Inlet #3
OPERATOR: J.S
STACK #:
SAMPLE BOX #:
METER BOX #: 10
AMBIENT TEMPERATURE: 90°
BAROMETRIC PRESSURE:
ASSUMED MOISTURE:
PROBE LENGTH: 6'
NOZZLE IDAMETER: .191
STACK DIAMETER: 42"
METER H : 1.485547
C FACTOR: .84
METER CO-EFFICIENT: .9889339

IMPINGERS

	Initial	Final
#1:	100 gm H2O	222
#2:	100	116
#3:	0	8
#4:	200 grms 5.6	208.0
#5:	0	154

COMMENTS

CO_2	O_2
1.5%	17%

FILTER TARE:

PRE-TEST LEAK CHECK
Meter: 0.00 cu. ft. 15 in. HG
Pitots: ✓ in. H2O

POST-TEST LEAK CHECK
Meter: 0.00 cu.ft. 5 in. HG
Pitots: ✓ in. H2O

P	θ	STATIC PRES.	Ts °F	ΔP	√ΔP	ΔH	Vm FT.3	Tm INLET	Tm OUTLET	OVEN TEMP.	IMP OUTLET TEMP.	VAC CIN
A1	4:25		159	1.0		1.09	300.782	98	98	255	70	2
2	4:29		165	1.1		1.20	303.1	100	98	259	70	2
3	4:33		166	1.2		1.31	305.5	104	98	266	70	2
4	4:37		167	1.2		1.31	308.1	105	98	256	70	3
5	4:41		164	1.2		1.31	310.7	107	98	255	70	3
6	4:45		155	1.1		1.20	313.3	107	99	257	70	3
7	4:49		139	1.1		1.20	315.7	108	99	265	70	3
8	4:53		110	.82		.90	318.2	107	100	260	70	2
131	~~5:57~~ 4:58		146	.82		.90	320.360	100	100	265	70	2
2	5:02		160	1.3		1.42	322.4	105	100	258	70	2
3	5:06		159	1.3		1.42	325.1	108	100	265	70	3
4	5:10	-8.8	161	1.3		1.42	327.8	109	101	262	70	3
5	5:14		156	1.2		1.31	330.5	109	101	268	70	2
6	5:18		153	1.2		1.31	333.1	109	101	266	70	2
7	5:22		139	1.1		1.20	335.6	108	101	265	70	2
9	5:26		131	.92		1.01	338.1	108	102	259	70	2
	5:30						340.376					
AV							39.594					

PARTICULATE FIELD DATA

PLANT: L.P
DATE: 6-2-95
REPETITION: 1

LOCATION: Inlet #3 Dryer
OPERATOR: JS
STACK #:
SAMPLE BOX #: 11
METER BOX #: 10
AMBIENT TEMPERATURE: 87°
BAROMETRIC PRESSURE: 29,88
ASSUMED MOISTURE: 15%
PROBE LENGTH: 5'
NOZZLE IDAMETER: .239, .238, .239 (.2386) (.0003106781)
STACK DIAMETER: 42"
METER H : 1,485547
C FACTOR: .84
METER CO-EFFICIENT: .9889339

St-0 = .88878
St-1 = 2,64224

FILTER TARE: —

PRE-TEST LEAK CHECK
Meter: 0.00 cu. ft. 15 in. HG
Pitots: — in. H20

POST-TEST LEAK CHECK
Meter: 0.00 cu.ft. 12 in. HG
Pitots: ✓ in. H20

IMPINGERS

	Initial	Final
#1:	100 > m/s DNPH	284
#2:	100	131
#3:	—	
#4:	200 g. S.G.	225.6
#5:		
		240.6

COMMENTS
CO_2 1.5% O_2 19.5%

P	θ	STATIC PRES.	Ts °F	ΔP	√ΔP	ΔH	Vm FT.3	Tm INLET	Tm OUTLET	OVEN TEMP.	IMP OUTLET TEMP.	VAC CIN
B1	8:30		186	1.4		2.92	340.785	88	88	255	66	7
2	8:34		195	1.4		2.92	344.7	90	87	260	68	8
3	8:38		196	1.4		2.92	348.6	92	88	266	68	8
4	8:42		194	1.4		2.92	352.6	94	88	263	68	9
5	8:46	-8.6	195	1.3		2.71	356.5	94	89	262	68	9
6	8:50		196	1.3		2.71	360.3	95	89	262	68	9
7	8:54		196	1.35		2.81	364.1	95	90	257	69	9
8	8:59		178	.98		2.0	368.0	96	90	258	69	9
A1	9:02/9:04		191	1.4		2.92	371.331	92	90	263	70	8
2	9:08		192	1.4		2.92	375.2	96	90	259	70	8
3	9:12		191	1.4		2.92	379.2	97	91	266	70	8
4	9:16		194	1.4		2.92	383.1	98	91	265	70	8
5	9:20		197	1.4		2.92	387.1	98	91	259	70	8
6	9:24		197	1.3		2.71	391.0	98	91	253	70	8
7	9:28		191	1.3		2.71	394.8	99	92	261	70	8
8	9:32		1(60	.91		1.89	398.6	99	92	255	70	7
	9:36						401.829					
AV			190.6		1.1447	2.739	61.079		92.44			

PARTICULATE FIELD DATA

PLANT: L.P
DATE: 6-2-95
REPETITION: 2

LOCATION: Inlet #3
OPERATOR: JS
STACK #:
SAMPLE BOX #: 1
METER BOX #: 10
AMBIENT TEMPERATURE: 90°
BAROMETRIC PRESSURE: 29.91
ASSUMED MOISTURE:
PROBE LENGTH: 5'
NOZZLE IDAMETER: (.2386)
STACK DIAMETER: 42"
METER H : 1.485547
C FACTOR: .84
METER CO-EFFICIENT: .9889334

IMPINGERS

	Initial	Final
#1:	100 7mls DNPH	292
#2:	100	142
#3:	—	7
#4:	200 7. SG	214.5
#5:		255.5

COMMENTS

CO_2	O_2
2.5%	18.0%

FILTER TARE:
PRE-TEST LEAK CHECK
Meter: 0.00 cu. ft. 15 in. HG
Pitots: in. H2O

POST-TEST LEAK CHECK
Meter: 0.00 cu.ft. 7 in. HG
Pitots: — in. H2O

P #	θ	STATIC PRES.	Ts °F	ΔP	√ΔP	ΔH	Vm FT.3	Tm INLET	Tm OUTLET	OVEN TEMP.	IMP OUTLET TEMP.	VAC (IN
A1	10:13		192	1.13		2.71	402.322	91	91	260	70	3
2			191	1.35		2.81	406.1	97	92	258	70	3
3			194	1.3		2.71	409.9	100	92	255	70	3
4			194	1.3		2.71	413.7	102	93	254	70	3
5		+8.5	195	1.3		2.71	417.5	102	93	266	70	3
6			195	1.4		2.92	421.4	103	94	260	70	3
7			189	1.2		2.50	425.3	103	94	255	70	3
8			159	.85		1.77	428.9	104	95	265	70	4
B1	10:43 10:46		192	1.4		2.92	432.062	98	95	264	70	4
2			194	1.4		2.92	436.0	102	95	255	70	4
3			194	1.3		2.71	439.9	104	96	260	70	4
4			196	1.3		2.71	443.7	105	96	256	70	4
5			194	1.4		2.92	447.5	105	96	259	70	4
6			192	1.3		2.71	451.5	106	97	253	70	4
7			187	1.2		2.50	455.2	106	97	255	70	4
8			165	.92		1.92	458.9	107	97	251	70	3
	11:16						462.141					
Av							59.819					

PARTICULATE FIELD DATA

PLANT: L.P
DATE: 6-2-95
REPETITION: 3

LOCATION: Inlet #3
OPERATOR: J.S
STACK #:
SAMPLE BOX #: 11
METER BOX #: 10
AMBIENT TEMPERATURE: 95°
BAROMETRIC PRESSURE: 29.88
ASSUMED MOISTURE:
PROBE LENGTH: 5'
NOZZLE IDAMETER: (.2386)
STACK DIAMETER: 42"
METER H : 1.485547
C FACTOR: 184
METER CO-EFFICIENT: .9889354

FILTER TARE: —

PRE-TEST LEAK CHECK
Meter: 0.00 ✓ cu. ft. 15 in. HG
Pitots: in. H2O

IMPINGERS

	Initial	Final
#1:	100 g mls DNPH	262
#2:	100 g mls	139
#3:	—	20
#4:	200 g. SG	216.6
#5:		237.6

COMMENTS
CO_2 2.5% O_2 18%

POST-TEST LEAK CHECK
Meter: 0.00 cu.ft. 10 in. HG
Pitots: ✓ in. H2O

P ≐	Θ	STATIC PRES.	Ts °F	ΔP	√ΔP	ΔH	Vm FT.3	Tm INLET	Tm OUTLET	OVEN TEMP.	IMP OUTLET TEMP.	VAC CIN
A1	11:45		192	1.4		2.92	462.456	96	96	258	70	7
2			195	1.3		2.71	466.4	100	96	260	70	7
3			193	1.35		2.81	470.2	101	96	260	70	7
4			194	1.4		2.92	474.0	104	97	253	70	7
5			192	1.2		2.50	478.0	105	97	258	70	7
6		-8.6	191	1.2		2.50	481.6	105	98	259	70	7
7			191	1.1		2.29	485.3	106	98	264	70	7
8			169	.92		1.92	488.8	107	99	260	70	5
B1	12:15 12:18		191	1.5		3.13	492.010	103	99	258	70	8
2			196	1.4		2.92	496.1	105	99	263	70	8
3			194	1.4		2.92	500.0	106	99	264	70	8
4			192	1.3		2.71	504.0	107	100	260	70	8
5			189	1.2		2.50	507.7	107	100	262	70	7
6			192	1.3		2.71	511.4	107	100	261	70	7
7			192	.96		2.0	515.2	107	100	264	70	6
8			180	.92		1.92	518.5	107	101	260	70	6
	12:49						521.693					
Av							59.237					

3.45
7.30
11.15
15.0
18.99
22.30
26.15

P #	θ	STATIC PRES	Ts °F	ΔP	√ΔP
A1		-9.7	196	.48	
2				.58	
3				.66	
4				.74	
5				.75	
B1				.40	
2				.41	
3				.45	
4				.65	
5				.69	
C1				.28	
2				.30	
3				.33	
4				.45	
5				.61	
D1				.23	
2				.23	
3				.29	
4				.40	
5				.44	
E1				.20	
2				.21	
3				.23	
4				.28	
5				.38	
AV					

Preliminary Traverse

ΔP — .4268 (.43)
TS — 656
MS — 27.84
PS — 30.57

msps - 851.07

Vel - 41.34

O_2 % 19.5 / 0
CO_2 % 2.5 / 0

PLANT: LP Corrigan
DATE: 6-1-95
REPETITION:

LOCATION:
OPERATOR: TA CJ JD
STACK #: #1 inlet
SAMPLE BOX #:
METER BOX #:
AMBIENT TEMPERATURE:
BAROMETRIC PRESSURE: 1011 29.85
ASSUMED MOISTURE: 12
PROBE LENGTH:
NOZZLE DIAMETER:
STACK DIAMETER:
METER H :
C FACTOR:

APPENDIX E

SUMMARY OF POST METER BOX CALIBRATION

METER BOX NUMBER : 12
CALIBRATION DATE: 6/03/95
CALIBRATED BY: Dan Barrera
BAROMETRIC PRESSURE (inch Hg): 29.65

```
*****************************************************************
*                                                               *
*       DELTA H = ORFICE PRESSURE                               *
*       VW = VOLUME OF WET GAS METER                            *
*       TW = AVERAGED TEEMPERATURE OF WET METER                 *
*       VD = VOLUME OF DRY GAS METER                            *
*       TD = AVERAGED TEMPERATURE OF DRY GAS METER              *
*       TIME = DURATION OF EACH POINT RUN                       *
*                                                               *
*****************************************************************
```

POINT 1
DELTA H = 1 VW = 10 TW = 81
VD = 9.623999 TD = 79.75 TIME = 16.26 TEST METER Y = .9701
METER BOX Y = 1.003184
METER BOX H = 1.532772

POINT 2
DELTA H = 1 VW = 10 TW = 81.5
VD = 9.659001 TD = 80.75 TIME = 16.21 TEST METER Y = .9701
METER BOX Y = 1.000476
METER BOX H = 1.523354

POINT 3
DELTA H = 1 VW = 10 TW = 82
VD = 9.659001 TD = 82.25 TIME = 16.23 TEST METER Y = .9701
METER BOX Y = 1.002326
METER BOX H = 1.525705

AVERAGE Y = 1.001995
AVERAGE H = 1.527277

Post-Test
Meter Box Calibration

Dry Gas Meter #: 12
Calibrated by: Don Barrett
Date: 6-3-95
Barometric Pressure: 29.65

Orifice ΔH	Test Meter Volume V_w	Dry Gas Meter Volume V_d	Temperature				Time θ	Y	ΔH@
			Test Meter T_w	Dry Gas Meter Inlet T_{di}	Dry Gas Meter Outlet T_{do}	Dry Gas Meter Ave T_d			
1.0	10	9.624	81	82/85	75/77	79.75	16.26	.9701	
1.0	10	9.659	81.5	82/86	77/78	80.75	16.21	.9701	
1.0	10	9.659	82	84/84	78/79	82.25	16.23	.9701	

$$Y = \frac{V_w P_{bar} (T_d + 460)}{V_d (P_{bar} + \frac{\Delta H}{13.6}) (T_w + 460)}$$

$$\Delta H@ = \frac{0.0317\ \Delta H}{P_{bar}(T_d + 460)} \left[\frac{(T_w + 460)\ \theta}{V_w}\right]^2$$

P_{bar} = Barometric Pressure

ARMSTRONG ENVIRONMENTAL, INC.

DRY GAS METER #: 12

DATE: 6-3-95

ΔH	VW	TW	VD	TDT	TDO	ΔTD	θ
1.0 (10FT^3)	335.0	81/81	631,706	82	75		
	325.0	81/81	622082	85	77		
	10	81	9.624		→	79.25	16.26
1.0 (10FT^3)	345.0	81/81	641,365	82	77		
	335.0	82/82	631.706	86	78		
	10	81.5	9,659		→	8275	16.21
1.0 (10FT^3)	355.0	82/82	651.074	84	78		
	345.0	82/82	641.365	88	79		
	10	82	9.659		→	8225	16.23

Temperature Meter Calibration Form

Meter # 12 6-3-95

	Emtech K Thermocouple Checker	Meter Reading
P1	32 F + 460 = 492 R	35 + 460 = 495 R
P2	212 F + 460 = 672 R	213 + 460 = 673 R
P3	752 F + 460 = 1212 R	753 + 460 = 1213 R

Divide smaller number by larger number in degrees R and multiply by 100.
Subtract that number from 100 to get % variation.
Variation limit is +/- 2%.

	% Variation
P1	.6
P2	.1
P3	.1

SUMMARY OF POST METER BOX CALIBRATION

METER BOX NUMBER : 10
CALIBRATION DATE: 6/03/95
CALIBRATED BY: Dan Barrera
BAROMETRIC PRESSURE (inch Hg): 29.65

```
**************************************************************
*                                                            *
*       DELTA H = ORFICE PRESSURE                            *
*       VW = VOLUME OF WET GAS METER                         *
*       TW = AVERAGED TEEMPERATURE OF WET METER              *
*       VD = VOLUME OF DRY GAS METER                         *
*       TD = AVERAGED TEMPERATURE OF DRY GAS METER           *
*       TIME = DURATION OF EACH POINT RUN                    *
*                                                            *
**************************************************************
```

POINT 1
DELTA H = 1 VW = 10 TW = 82
VD = 9.656999 TD = 86.5 TIME = 15.58 TEST METER Y = .9701
METER BOX Y = 1.010391
METER BOX H = 1.395012

POINT 2
DELTA H = 1 VW = 10 TW = 82.5
VD = 9.693 TD = 89 TIME = 15.66 TEST METER Y = .9701
METER BOX Y = 1.010311
METER BOX H = 1.405547

POINT 3
DELTA H = 1 VW = 10 TW = 83
VD = 9.701 TD = 90.5 TIME = 15.59 TEST METER Y = .9701
METER BOX Y = 1.011304
METER BOX H = 1.391775

AVERAGE Y = 1.010669
AVERAGE H = 1.397444

Post-Test
Meter Box Calibration

Dry Gas Meter #: 10
Calibrated by: Dan Barrera
Date: 6-3-95
Barometric Pressure: 29.65

Orifice ΔH	Test Meter Volume V_w	Dry Gas Meter Volume V_d	Temperature				Time θ	Y	ΔH@
			Test Meter T_w	Dry Gas Meter					
				Inlet T_{di}	Outlet T_{do}	Ave T_d			
1.0	10	9.657	82	85/95	82/85	86.5	15.58	.9701	
1.0	10	9.693	82.5	90/95	85/86	89	15.66	.9701	
1.0	10	9.701	83	92/96	87/87	90.5	15.59	.9701	

$$Y = \frac{V_w P_{bar} (T_d + 460)}{V_d (P_{bar} + \frac{\Delta H}{13.6}) (T_w + 460)}$$

$$\Delta H@ = \frac{0.0317\ \Delta H}{P_{bar}(T_d + 460)} \left[\frac{(T_w + 460)\ \theta}{V_w}\right]^2$$

P_{bar} = Barometric Pressure

ARMSTRONG ENVIRONMENTAL, INC.

DRY GAS METER #: 10

DATE: 6-3-95

ΔH	VW	TW	VD	TDT	TDO	ΔTD	θ
1.0 (10FT^3)	365.0	82/82	533.828	85	82		
	355.0	82/82	524.171	94	85		
	10	82	9.657		→	86.5	15.58
1.0 (10FT^3)	375.0	82/82	543.521	90	85		
	365.0	83/83	533.828	95	86		
	10	82.5	9.693		→	89	15.66
1.0 (10FT^3)	385.0	83/83	553.222	92	87		
	375.0	83/83	543.521	96	87		
	10	83	9.701		→	90.5	15.59

Temperature Meter Calibration Form

Meter # 10 6-3-95

	Emtech K Thermocouple Checker	Meter Reading
P1	32 F + 460 = 492 R	33 + 460 = 493 R
P2	212 F + 460 = 672 R	214 + 460 = 674 R
P3	752 F + 460 = 1212 R	753 + 460 = 1213 R

Divide smaller number by larger number in degrees R and multiply by 100.
Subtract that number from 100 to get % variation.
Variation limit is +/- 2%.

	% Variation
P1	.2
P2	.3
P3	.1

L

SUMMARY OF POST METER BOX CALIBRATION

METER BOX NUMBER : 11
CALIBRATION DATE: 6/03/95
CALIBRATED BY: Dan Barrera
BAROMETRIC PRESSURE (inch Hg): 29.65

```
**************************************************************
*                                                            *
*       DELTA H = ORFICE PRESSURE                            *
*       VW = VOLUME OF WET GAS METER                         *
*       TW = AVERAGED TEEMPERATURE OF WET METER              *
*       VD = VOLUME OF DRY GAS METER                         *
*       TD = AVERAGED TEMPERATURE OF DRY GAS METER           *
*       TIME = DURATION OF EACH POINT RUN                    *
*                                                            *
**************************************************************
```

POINT 1
DELTA H = 1 VW = 10 TW = 80
VD = 9.63 TD = 79.25 TIME = 16.43 TEST METER Y = .9701
METER BOX Y = 1.003485
METER BOX H = 1.560656

POINT 2
DELTA H = 1 VW = 10 TW = 80.5
VD = 9.271 TD = 81.25 TIME = 16.36 TEST METER Y = .9701
METER BOX Y = 1.045241
METER BOX H = 1.544524

POINT 3
DELTA H = 1 VW = 10 TW = 81
VD = 9.635 TD = 82.5 TIME = 16.36 TEST METER Y = .9701
METER BOX Y = 1.007144
METER BOX H = 1.543817

AVERAGE Y = 1.018623
AVERAGE H = 1.549666

Post-Test
Meter Box Calibration

Dry Gas Meter #: 11
Calibrated by: Dan Barrera
Date: 6-3-95
Barometric Pressure: 29.65

Orifice ΔH	Test Meter Volume V_w	Dry Gas Meter Volume V_d	Temperature				Time θ	Y	ΔH@
			Test Meter T_w	Dry Gas Meter Inlet T_{di}	Dry Gas Meter Outlet T_{do}	Dry Gas Meter Ave T_d			
1.0	10	9.630	80	78 / 83	77 / 79	79.25	16.43	.9701	
1.0	10	9.271	80.5	81 / 85	79 / 80	81.25	16.36	.9701	
1.0	10	9.635	81	83 / 86	80 / 81	82.5	16.36	.9701	

$$Y = \frac{V_w P_{bar} (T_d + 460)}{V_d (P_{bar} + \frac{\Delta H}{13.6}) (T_w + 460)}$$

$$\Delta H@ = \frac{0.0317 \Delta H}{P_{bar}(T_d + 460)} \left[\frac{(T_w + 460) \theta}{V_w} \right]^2$$

P_{bar} = Barometric Pressure

ARMSTRONG ENVIRONMENTAL, INC.

DRY GAS METER #: 11

DATE: 6-3-95

ΔH	VW	TW	VD	TDT	TDO	ΔTD	Θ
1.0 (10FT^3)	305.0	80/80	793.159	78	77		
	295.0	80/80	783.529	83	79		
	10	80	9,630		→	79.25	16.43
1.0 (10FT^3)	315.0	80/80	802,800	81	79		
	305.0	81/81	793.529	85	80		
	10	80.5	9,271		→	81.25	16.36
1.0 (10FT^3)	325.0	81/81	812,435	83	80		
	315.0	81/81	802,800	86	81		
	10	81	9.635		→	82.5	16.36

Temperature Meter Calibration Form

Meter # 11 6-3-95

	Emtech K Thermocouple Checker	Meter Reading
P1	32 F + 460 = 492 R	29 + 460 = 489 R
P2	212 F + 460 = 672 R	209 + 460 = 669 R
P3	752 F + 460 = 1212 R	747 + 460 = 1207 R

Divide smaller number by larger number in degrees R and multiply by 100.
Subtract that number from 100 to get % variation.
Variation limit is +/- 2%.

	% Variation
P1	.6
P2	.4
P3	.4

ATMOSPHERIC CALIBRATIONS

Watch Checked against Princo Instruments Hg Barometer

Model #453 Serial #10030

DATE	TIME	TEMPERATURE	WATCH READING	ACTUAL READING	% DIFFERENCE	WATCH OWNER
1-5-94	11:40	71°	30.24	30.24	0.0%	C
1-13-95	4:40	70°	29.65	29.65	0	D Dahlem
2-7-95	4:03	70°	30.00	30.15	0.5%	J. Salinas
2-10-95	2:30	70	29.53	29.50	.03%	D Dahlem
2/21/95	10:57	71°	30.06	30.05	.01	J. Barrera
2 2 95	10:59	71	30.15	30.05	.1	John
3-9-95	2:30	70	30.19	30.11	.08	John
3-9-95	2:45	70	30.03	30.11	.08	DAN
3 14 95	4:10	71	29.62	29.64	.02	Richard Taylor
3/27/95	12:15	70	29.91	29.92	.01	Richard Taylor
4/11/95	3:33	71°	29.7	29.7	0.00	Joe Barrera
4/11/95			29.76	29.56	0	RT
4/11/95	8:00	71	29.56	29.58	0	RT
4/28/95	2:35	71	29.65	29.65	0	RT
5/9/95	1:35	77	29.45	29.45	0	TA
5/15/95	8:50	75	29.7	29.7	0	RT
5/16/95	10:06	78.5	29.55	29.54	.01	
5/19/95	2:11 PM	75	29.74	29.74	0	J.Barrera
5/30/95	11:05 AM	76	29.75	29.—	—	T. Armstrong
6/3/95	11:35 AM	77	29.65	29.64	0.0003	Richard Taylor
6/5/95	2:50 pm	79	29.4	29.38		
6/10/95	9:30 am	77	29.65	29.62		T. Armstrong

SUMMARY OF PRE METER BOX CALIBRATION

METER BOX NUMBER: 10
CALIBRATION DATE:5/2/95
CALIBRATED BY:Jerry Salinas
BAROMETRIC PRESSURE: 29.84

```
**********************************************************
*                                                        *
*       DELTA H = ORFICE PRESSURE                        *
*       VW = VOLUME OF WET GAS METER                     *
*       TW = AVERAGED TEMPERATURE OF WET METER           *
*       VD = VOLUME OF DRY GAS METER                     *
*       TD = AVERAGED TEMPERATURE OF DRY GAS METER       *
*       TIME = DURATION OF EACH POINT RUN                *
*                                                        *
**********************************************************
```

POINT 1
DELTA H = .5 VW = 5 TW = 72.5
VD = 4.961 TD = 71.75 TIME = 11.37 TEST METER Y = .9701
METER BOX Y = .9751477
METER BOX H = 1.464681

POINT 2
DELTA H = 1 VW = 5 TW = 73
VD = 4.908 TD = 73.5 TIME = 7.923 TEST METER Y = .9701
METER BOX Y = .9867799
METER BOX H = 1.42043

POINT 3
DELTA H = 1.5 VW = 10 TW = 73
VD = 9.82 TD = 75.75 TIME = 13.215 TEST METER Y = .9701
METER BOX Y = .9893221
METER BOX H = 1.475633

POINT 4
DELTA H = 2 VW = 10 TW = 73
VD = 9.814999 TD = 76.25 TIME = 11.55 TEST METER Y = .9701
METER BOX Y = .9895352
METER BOX H = 1.501556

POINT 5
DELTA H = 3 VW = 10 TW = 73
VD = 9.765001 TD = 77 TIME = 9.316 TEST METER Y = .9701
METER BOX Y = .9935568
METER BOX H = 1.463258

POINT 6
DELTA H = 4 VW = 10 TW = 73.5
VD = 9.689999 TD = 77.75 TIME = 8.402001 TEST METER Y = .9701
METER BOX Y = .9992614
METER BOX H = 1.587722

Meter Box Calibration

Dry Gas Meter #: 10
Calibrated by: Jerry
Date: 5-2-95
Barometric Pressure: 29.84

Orifice ΔH	Test Meter Volume V_w	Dry Gas Meter Volume V_d	Temperature				Time θ	γ	ΔH@
			Test Meter T_w	Dry Gas Meter					
				Inlet T_{di}	Outlet T_{do}	Ave T_d			
.5	5.0	4.961	72.5	70/76	70/71	71.75	11.370	.9701	
1.0	5.0	4.908	73	73/79	71/71	73.5	7.923	.9701	
1.5	10.0	9.82	73	77/81	73/73	75.75	13.215	.9701	
2.0	10.0	9.815	73	76/82	73/74	76.25	11.550	.9701	
3.0	10.0	9.765	73	77/83	74/74	77	9.316	.9701	
4.0	10.0	9.69	73.5	78/84	74/75	77.75	8.402	.9701	

$$\gamma = \frac{V_w P_{bar} (T_d + 460)}{V_d (P_{bar} + \frac{\Delta H}{13.6}) (T_w + 460)}$$

$$\Delta H@ = \frac{0.0317 \Delta H}{P_{bar}(T_d + 460)} \left[\frac{(T_w + 460)\ \theta}{V_w} \right]^2$$

P_{bar} = Barometric Pressure

ARMSTRONG ENVIRONMENTAL, INC.

DRY GAS METER #: 10

DATE: 5-2-95

ΔH	VW	TW	VD	TDT	TDO	ΔTD	θ
.5(5FT.^{3})	970.000	72/72	679.812	70	70		
	965.000	73/73	674.851	76	71		
	5.000	72.5	4.961		→	71.75	11.370
1.0(5FT^3)	975.000	73/73	684.720	73	71		
	970.000	73/73	679.812	79	71		
	5.000	73	4.908		→	73.5	7.923
1.5(10 FT3)	985.000	73/73	694.540	77	72		
	975.000	73/73	684.720	81	73		
	10.000	73	9.82		→	75.75	13.215
2.0(10FT^3)	995.000	73/73	704.355	76	73		
	985.000	73/73	694.540	82	74		
	10.000	73	9.815		→	76.25	11.550
3.0(10FT^3)	1005.000	73/73	714.120	77	74		
	995.000	73/73	704.355	83	74		
	10.000	73	9.765		→	77	9.316
4.0(10FT^3)	1015.000	73/73	723.810	78	74		
	1005.000	74/74	714.120	84	75		8.402
	10.000	73.5	9.69		→	77.75	

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Temperature Meter Calibration Form

#10 5/2/95

Extech K Thermocouple Checker: Meter Reading

P1 : 32° F + 460 = 492° R 32 ÷460= 492 °R

P2 : 212°F + 460 = 672° R 212 ÷460= 672 °R

P3 : 752°F + 460 = 1,212° R 751 ÷460= 1211 °R

Divide smaller number by larger number in degrees R and multiply by 100.
Subtract that number from 100 to get % variation.
Variation limit is + or - 2%

	% Variation
P1 :	0 %
P2 :	0 %
P3 :	-.08%
Average	

171

AVERAGE Y = 1.012793
AVERAGE H = 1.559635

172

Meter Box Calibration

Dry Gas Meter #: 11
Calibrated by: Jerry Salinas
Date: 5-3-95
Barometric Pressure: 29.56

Orifice ΔH	Test Meter Volume V_w	Dry Gas Meter Volume V_d	Temperature				Time θ	γ	ΔH@
			Test Meter T_w	Dry Gas Meter					
				Inlet T_{di}	Outlet T_{do}	Ave T_d			
.5	5	4.829	66	63/66	63/64	66	11.72	.9701	
1.0	5	4.807	66.5	66/69	65/66	66.5	8.24	.9701	
1.5	10	9.583	67	68/71	66/67	68	13.62	.9701	
2.0	10	9.542	67	70/73	67/68	69.5	11.73	.9701	
3.0	10	9.514	67	72/74	68/69	70.75	9.67	.9701	
4.0	10	9.481	67	72/74	69/69	71	8.40	.9701	

$$\gamma = \frac{V_w P_{bar} (T_d + 460)}{V_d (P_{bar} + \frac{\Delta H}{13.6}) (T_w + 460)}$$

$$\Delta H@ = \frac{0.0317 \Delta H}{P_{bar}(T_d + 460)} \left[\frac{(T_w + 460)\ \theta}{V_w} \right]^2$$

P_{bar} = Barometric Pressure

ARMSTRONG ENVIRONMENTAL, INC.

DRY GAS METER #: 11

DATE: 5-3-95

ΔH	VW	TW	VD	TDT	TDO	ΔTD	Θ
.5 (5FT.^{3})	20.000	66 / 66	490.571	63	63		
	15.000	66 / 66	485.742	66	64		
	5.000	66	4.829		→	66	11.721
1.0 (5FT^3)	25.000	66 / 66	495.378	66	65		
	20.000	67 / 67	490.571	69	66		
	5.000	66.5	4.807		→	66.5	8.237
1.5 (10 FT^3)	35.000	67 / 67	504.961	68	66		
	25.000	67 / 67	495.378	71	67		
	10.000	67	9.583		→	68	13.617
2.0 (10FT^3)	45.000	67 / 67	514.503	70	67		
	35.000	67 / 67	504.961	73	68		
	10.000	67	9.542		→	69.5	11.734
3.0 (10FT^3)	55.000	67 / 67	524.017	72	68		
	45.000	67 / 67	514.503	74	69		
	10.000	67	9.514		→	70.75	9.674
4.0 (10FT^3)	65.000	67 / 67	533.498	72	69		
	55.000	67 / 67	524.017	74	69		
	10.000	67	9.481		→	71	8.402

Temperature Meter Calibration Form

#11 5/3/95

	Extech K Thermocouple Checker:	Meter Reading
P1 :	32° F + 460 = 492° R	28 + 460 = 488 ° R
P2 :	212°F + 460 = 672° R	208 + 460 = 668 ° R
P3 :	752°F + 460 = 1,212° R	746 + 460 = 1206 ° R

Divide smaller number by larger number in degrees R and multiply by 100.
Subtract that number from 100 to get % variation.
Variation limit is + or - 2%

	% Variation
P1 :	.8
P2 :	.6
P3 :	.5
Average	

SUMMARY OF PRE METER BOX CALIBRATION

METER BOX NUMBER: 12
CALIBRATION DATE:5/26/95
CALIBRATED BY:Dan Barrera
BAROMETRIC PRESSURE: 29.75

```
**********************************************************
*                                                        *
*       DELTA H = ORFICE PRESSURE                        *
*       VW = VOLUME OF WET GAS METER                     *
*       TW = AVERAGED TEMPERATURE OF WET METER           *
*       VD = VOLUME OF DRY GAS METER                     *
*       TD = AVERAGED TEMPERATURE OF DRY GAS METER       *
*       TIME = DURATION OF EACH POINT RUN                *
*                                                        *
**********************************************************
```

POINT 1
DELTA H = .5 VW = 5 TW = 80
VD = 4.84 TD = 78 TIME = 11.59 TEST METER Y = .9701
METER BOX Y = .9972253
METER BOX H = 1.551581

POINT 2
DELTA H = 1 VW = 5 TW = 80.5
VD = 4.851 TD = 79.75 TIME = 8.24 TEST METER Y = .9701
METER BOX Y = .9960476
METER BOX H = 1.566338

POINT 3
DELTA H = 1.5 VW = 10 TW = 81
VD = 9.655 TD = 81.5 TIME = 13.61 TEST METER Y = .9701
METER BOX Y = 1.001978
METER BOX H = 1.600206

POINT 4
DELTA H = 2 VW = 10 TW = 81.5
VD = 9.662 TD = 83.5 TIME = 11.99 TEST METER Y = .9701
METER BOX Y = 1.002788
METER BOX H = 1.652867

POINT 5
DELTA H = 3 VW = 10 TW = 82
VD = 9.583 TD = 84.75 TIME = 9.59 TEST METER Y = .9701
METER BOX Y = 1.009961
METER BOX H = 1.585375

POINT 6
DELTA H = 4 VW = 10 TW = 82.5
VD = 9.497 TD = 85.5 TIME = 8.310001 TEST METER Y = .9701
METER BOX Y = 1.017074
METER BOX H = 1.587959

AVERAGE Y = 1.004179
AVERAGE H = 1.590721

Meter Box Calibration

Dry Gas Meter #: 12
Calibrated by: Don Borrelo
Date: 5-26-95
Barometric Pressure: 29.75

Orifice ΔH	Test Meter Volume V_w	Dry Gas Meter Volume V_d	Temoerature				Time θ	γ	ΔH@
			Test Meter T_w	Dry Gas Meter					
				Inlet T_{di}	Outlet T_{do}	Ave T_d			
.5	5	4.840	80	76/83	76/77	78	11.59	.9701	
1.0	5	4.851	80.5	80/84	77/78	79.75	8.24	.9701	
1.5	10	9.655	81	80/89	78/79	81.5	13.61	.9701	
2.0	10	9.662	81.5	85/90	79/80	83.5	11.99	.9701	
3.0	10	9.583	82	87/91	80/81	84.75	9.59	.9701	
4.0	10	9.497	82.5	87/92	81/82	86.5	8.31	.9701	

$$\gamma = \frac{V_w P_{bar} (T_d + 460)}{V_d (P_{bar} + \frac{\Delta H}{13.6}) (T_w + 460)}$$

$$\Delta H@ = \frac{0.0317 \Delta H}{P_{bar}(T_d + 460)} \left[\frac{(T_w + 460)\ \theta}{V_w} \right]^2$$

P_{bar} = Barometric Pressure

ARMSTRONG ENVIRONMENTAL, INC.

DRY GAS METER #: 12

DATE: 5-26-95

ΔH	VW	TW	VD	TDT	TDO	ΔTD	θ
.5(5FT.3)	217.0	80/80	303.274	76	76		
	212.0	80/80	298.434	83	77		
	5	80	4.840		→	78	11.59
1.0(5FT3)	2220	80/80	308.125	80	77		
	217.0	81/81	303.274	84	78		8.24
	5	80.5	4.851		→	79.75	
1.5(10 FT3)	232.0	81/81	317.780	80	78		
	222.0	81/81	308.125	89	79		
	10	81	9.655		→	81.5	13.61
2.0(10FT3)	242.0	81/81	327.442	85	79		
	232.0	82/82	317.780	90	80		
	10	81.5	9.662		→	83.5	11.99
3.0(10FT3)	252.0	82/82	337.025	87	80		
	242.0	82/82	327.442	91	81		
	10	82	9.583		→	84.75	9.59
4.0(10FT3)	262.0	82/82	346.522	87	81		
	252.0	83/83	337.025	92	82		
	10	82.5	9.497		→	85.5	8.31

Temperature Meter Calibration Form

Meter # 12 5-26-95

	Emtech K Thermocouple Checker	Meter Reading
P1	32 F + 460 = 492 R	28 + 460 = 488 R
P2	212 F + 460 = 672 R	212 + 460 = 672 R
P3	752 F + 460 = 1212 R	758 + 460 = 1218 R

Divide smaller number by larger number in degrees R and multiply by 100.
Subtract that number from 100 to get % variation.
Variation limit is +/- 2%.

	% Variation
P1	.18
P2	.0
P3	.5

APPENDIX F

Air Products and Chemicals, Inc.
SPECIALTY GAS DEPARTMENT
12722 S. WENTWORTH AVENUE
CHICAGO, IL 60628

Certificate of Analysis - EPA Protocol Gas Standard

PERFORMED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION STANDARDS (PROCEDURE #G1

Customer:
APCI
3415 BANNING ST
DALLAS,TX. TX 75233

Notes:

Order No: 360-047885-
Batch No: 861-23327

Cylinder No: SG9127028BI
Cylinder Pressure*: 2000 psig
Certification Date: 01/28/95
Expiration Date: 01/28/98

PO: Rel:

*** Certified Concentration ***		********* Reference Standards *********			********** Analytical Instrumentation **********			
Component	Certified Concentration	Cylinder #	Standard Number	Concentration	Instrument Make/Model	Serial Number	Last Calibration	Measurement Principal
PROPANE	495 ±1.3 PPM	SG9128635BAL	GMIS	505.1000 PPM	Gow-Mac 750	59405U	01/18/94	GC-FID

Balance Gas: Nitrogen

* Standard should not be used below 150 psig

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Analyst: Richard VanDyke

Approved By: Robert McNear

AIRCO

To: Airco Dist. & Cly. Gases

Expiration Date: 01/12/98
Customer P.O.: R11747
Balance Gas: Nitrogen
CAS 7727-37-9

Certification of Analysis - EPA Protocol Gas
Performed According to Section 3.0.4

Certified Per Traceablity Procedure # G1
Certified Accuracy 1% NIST Protocol # 1

Test Number: 572700
Cylinder Number: CC29750
Fill Date: 01/06/95
Cylinder Pressure: 2000 PSIG
Certification Date: 01/12/95
Location: Royal Oak, M.I.

Component	Certified Concentration	SRM No.	SRM Conc.	Cylinder Number	Analytical Information: Serial Number	Analytical Procedure	Make	Model	CAS 74-98-6 Calibration Date
Propane	50.5 ppm	2643a	99.1 ppm	SX20443	RAPID 4189	Flame Ionization Detector	Beckman	400	12/23/94

First Analysis Analyst: L. Cosey Date: 01/12/95

Zero Gas	Reference Gas	Sample Gas	-- Concentration
00.0	99.1	50.4	50.4 ppm
00.0	99.0	50.4	50.5 ppm
00.0	99.0	50.4	50.5 ppm
		Average-	50.5 ppm

Second Analysis Analyst: L. Cosey Date: 01/12/95

Zero Gas	Reference Gas	Sample Gas	-- Concentration
00.0	99.1	50.4	50.4 ppm
00.0	98.8	50.3	50.5 ppm
00.0	98.8	50.3	50.5 ppm
		Average-	50.5 ppm

This Calibration Standard has been Certified versus EPA Traceability Protocol # 1, Procedure G1, and Analysis performed per section 3.0.4
Certified Concentration: Balance = Nitrogen, Propane=50.5 ppm

APPROVED BY M. Kelley
Laboratory Manager

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EPA PROTOCOL GAS

Scott Specialty Gases, Inc.

1290 COMBERMERE STREET, TROY, MI 48083 (313) 589-2950 FAX: (313) 589-2134

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

Customer	Assay Laboratory	
ARMSTRONG ENVIROMENTAL	Scott Specialty Gases, Inc	Purchase Order 1349
77A SOVEREIGN ROW	1290 Combermere	Scott Project # 561294
DALLAS TX 75247	Troy, MI 48083	

ANALYTICAL INFORMATION

Certified to exceed the minimum specifications of EPA Protocol 1 Procedure #G1, Section Number 3.0.4

Cylinder Number ALM013040 | Certification Date 2-2-94 | Expiration Date 2-2-97

Cylinder Pressure 1900 psig | Previous Certification Dates None

ANALYZED CYLINDER

Components	Certified Concentration	Analytical Uncertainty*
Propane	29.98 ppm	±1% NIST Directly Traceable

Balance Gas: Nitrogen

* Analytical uncertainty is inclusive of usual known error sources which at least includes reference standard error & precision of the measurement processes.

REFERENCE STANDARD

Type	Expiration Date	Cylinder Number	Concentration
SRM 2643A	10-14-95	SX-20305	99.12 ppm Propane in N_2

INSTRUMENTATION

Instrument/Model/Serial #	Last Date Calibrated	Analytical Principle
Prop: Beckman/400/1002059	1-8-94	Flame Ionization Detector

ANALYZER READINGS (Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

Components	First Triad Analysis	Second Triad Analysis	Calibration Curve
Propane	Date: 2-2-94 Response Units: mv Z1=0.00 R1=99.10 T1=30.00 R2=99.10 Z2=0.00 T2=30.00 Z3=0.00 T3=30.00 R3=99.10 Avg. Conc. of Cust. Cyl. 29.98 ppm		Concentration=A+Bx+Cx^2+Dx^3+Ex^4 r=0.99999 SRM 2643A Constants: A=-0.03442105 B=1.000549 C=0 D=0 E=0
			Concentration=A+Bx+Cx^2+Dx^3+Ex^4
			Concentration=A+Bx+Cx^2+Dx^3+Ex^4

Special Notes: NO OTHER HYDROCARBONS DETECTED ON G.C.

Analyst Frank P. Doran

Air Products and Chemicals, Inc.
SPECIALTY GAS DEPARTMENT
12722 S. WENTWORTH AVENUE
CHICAGO, IL 60628

Certificate of Analysis - EPA Protocol Gas Standard

PERFORMED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION STANDARDS (PROCEDURE #G

Order No: 36A-00598
Batch No: 861-18145

Customer:
ARMSTRONG ENVIRONMENTAL
7715 SOVEREIGN ROW
DALLAS TX 75247

Notes:

Cylinder No: SG9132456
Cylinder Pressure*: 2000 psig
Certification Date: 05/09/94
Expiration Date: 05/09/97

PO: 1371 Rel:

*** Certified Concentration ***			********* Reference Standards *********		********** Analytical Instrumentation ********			
Component	Certified Concentration	Cylinder #	Standard Number	Concentration	Instrument Make/Model	Serial Number	Last Calibration	Measurement Principal
PROPANE	909 ±2.2 PPM	SG9128533BAL	GMIS	1025.0000 PPM	Gow-Mac 750	59405U	05/05/94	GC-FID

Balance Gas: Nitrogen

* Standard should not be used below 150 psig

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Analyst: James Laas

Approved By: Robert McNear
Robert McNear

AIRCO

To: BOC GASES-DIST.-TEXAS

Expiration Date: 04/07/98
Customer P.O.: R11851
Balance Gas: Nitrogen
CAS 7727-37-9

Certification of Analysis - EPA Protocol Gas
Performed According to Section 3.0.4

Certified Per Traceablity Procedure # G1
Certified Accuracy 1% NIST Protocol # 1

Test Number: 589599
Cylinder Number: CC19188
Fill Date: 04/03/95
Cylinder Pressure: 2000 PSIG
Certification Date: 04/07/95
Location: Royal Oak, M.I.

Component	Certified Concentration	SRM No.	SRM Conc.	Cylinder Number	Analytical Information: Serial Number	Analytical Procedure	Make	Model	CAS 74-98-6 Calibration Date
Propane	104.8 ppm	2644	244.2 ppm	CAL3122	RAPID 4189	Flame Ionization Detector	Beckman	400	03/12/95

First Analysis Analyst: L. Cosey Date: 04/07/95

Zero Gas	Reference Gas	Sample Gas	-- Concentration
00.0	81.4	35.0	105.0 ppm
00.0	81.6	35.0	104.7 ppm
00.0	81.8	35.0	104.5 ppm
		Average-	104.7 ppm

Second Analysis Analyst: L. Cosey Date: 04/07/95

Zero Gas	Reference Gas	Sample Gas	-- Concentration
00.0	81.4	35.0	105.0 ppm
00.0	81.7	35.0	104.6 ppm
00.0	81.5	35.0	104.9 ppm
		Average-	104.8 ppm

This Calibration Standard has been Certified versus EPA Traceability Protocol # 1, Procedure G1, and Analysis performed per section 3.0.4
Certified Concentration: Balance = Nitrogen, Propane=104.8 ppm

APPROVED BY M. Kelley
Laboratory Manager

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EPA PR

AIR PRODUCTS
4822 INDUSTRY LANE
DURHAM, NC 27713

CERTIFICATE OF ANALYSIS-EPA PROTOCOL MIXTURES

REFERENCE #: 88-23473 CYLINDER #:SG9113690 CYL PRESSURE: 2000PSIG

EXPIRATION DATE:4-7-96 LAST ANALYSIS DATE: 4-7-93

BATCH# 05867

CUSTOMER: AIR PRODUCTS
DALLAS, TX 75233

P.O.#

METHOD: EPA PROTOCOL # 1 3.0.4. G-1

STANDARD:

SRM #: 2644

CYL #: FF39583

CONC.: 244.5 PPM
VALID DATE:7-13-90
EXPIR. DATE:7-18-94

INSTRUMENT:

COMPONENT: BECKMAN THC

MODEL #: 400

SERIAL #: 1003052

LAST CAL.: 4-2-93

COMP: C3H8
MEAN CONC: 203 PPM

REPLICATE CONC.
DATE: 4-7-93 DATE:
203 PPM
203 PPM
204 PPM

COMP:
MEAN CONC:

REPLICATE CONC.
DATE: DATE:

COMP:
MEAN CONC:

REPLICATE CONC.
DATE: DATE:

BALANCE GAS: NITROGEN

REPLICATE DATA

DATE: 4-7-93

Z	0	R	425	C	352.9
R	426	Z	0	C	353.7
Z	0	C	354.6	R	425

COMPONENT: C3H8

DATE:

Z	R	C
R	Z	C
Z	C	R

REPLICATE DATA

DATE:

Z	R	C
R	Z	C
Z	C	R

COMPONENT:

DATE:

Z	R	C
R	Z	C
Z	C	R

REPLICATE DATA

DATE:

Z	R	C
R	Z	C
Z	C	R

COMPONENT:

DATE:

Z	R	C
R	Z	C
Z	C	R

Z=ZERO C=CANDIDATE R=REFERENCE

ANALYST: David G. APPROVED BY: Patrick J. Fletcher

"THIS REPORT STATED ACCURATELY THE RESULTS OF THE INVESTIGATION MADE UPON THE MATERIAL SUBMITTED TO THE ANALYTICAL LABORATORY. EVERY EFFORT HAS BEEN MADE TO DETERMINE OBJECTIVELY, THE INFORMATION REQUESTED; HOWEVER, IN CONNECTION WITH ITS RENDERING OF THIS REPORT, AIR PRODUCTS SHALL HAVE NO LIABILITY IN EXCESS OF ITS ESTABLISHED CHARGE FOR THE SERVICE. ANY USE OF THIS REPORT OR THE INFORMATION CONTAINED HEREIN SHALL BE AT THE SOLE RISK OF THE USER."

Air Products and Chemicals, Inc.
SPECIALTY GAS DEPARTMENT
12722 S. WENTWORTH AVENUE
CHICAGO, IL 60628

Certificate of Analysis - EPA Protocol Gas Standard

PERFORMED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION STANDARDS (PROCEDURE #G1)

Customer:
ARMSTRONG ENVIRONMENTAL
7715 SOVEREIGN ROW
DALLAS TX 75247

Notes:

Order No: 36A-006058-
Batch No: 861-18185

Cylinder No: SG9132377BA
Cylinder Pressure*: 2000 psig
Certification Date: 05/07/94
Expiration Date: 05/07/97

PO: 1372 Rel:

*** Certified Concentration ***		********** Reference Standards **********			************** Analytical Instrumentation **********			
Component	Certified Concentration	Cylinder #	Standard Number	Concentration	Instrument Make/Model	Serial Number	Last Calibration	Measurement Principal
PROPANE	200 ±1.0 PPM	SG9128591BAL	GMIS	201.1000 PPM	Gow-Mac 750	59405U	04/14/94	GC-FID

Balance Gas: Nitrogen

* Standard should not be used below 150 psig

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Analyst: James Laas
James Laas

Approved By: Robert McNear
Robert McNear

Air Products and Chemicals, Inc.
SPECIALTY GAS DEPARTMENT
12722 S. WENTWORTH AVENUE
CHICAGO, IL 60628

Certificate of Analysis - EPA Protocol #1 Gases

PERFORMED ACCORDING TO SECTION 3.0.4 (Procedure #G1)

Customer:
SOUTHWESTERN ELECTRIC POWER COMPAN
WELSH POWER PLANT
FM RD 1735
CASON TX 75636

Notes:

Order No: 36A-004394-(
Batch No: 861-16363

Cylinder No: SG9121051BAI
Cylinder Pressure: 2000 psig
Certification Date: 01/24/04
Expiration Date: 01/24/96

PO: 53909 Rel:

*** Certified Concentration ***		********* Reference Standards *********			********** Analytical Instrumentation **********			
Component	Certified Concentration	Cylinder #	Standard Number	Concentration	Instrument Make/Model	Serial Number	Last Calibration	Measurement Principal
NITRIC OXIDE	254 PPM	SG9113409BAL	GMIS	234.6000 PPM	Rosemount 951a	0101877	10/29/93	CHEMILUMINESCEN(
Balance Gas: Nitrogen								
Contaminent								
Nitrogen Dioxide	.800 PPM							

Analytical Data*

Component: NITRIC OXIDE

First Analysis Date: 01/17/94

Zero	*** Test Gas ***		*** Ref. Gas ***	
mV	mV	PPM	mV	PPM
.000	104	254	95.7	235
.010	104	254	95.6	235
.000	104	255	95.5	235
Average:		254		

Second Analysis Date: 01/24/04

Zero	*** Test Gas ***		*** Ref. Gas ***	
mV	mV	PPM	mV	PPM
.030	104	254	95.9	235
.040	104	254	96.0	235
.050	104	254	95.9	235
Average:		254		

188

* Calculations performed per Section 3.0.4 subsection 4.1.7

Analyst: James G Laas
James Laas

Approved By: Robert V. McNear
Robert McNear

Air Products and Chemicals, Inc.
SPECIALTY GAS DEPARTMENT
12722 S. WENTWORTH AVENUE
CHICAGO, IL 60628

EPA Protocol Gas Standard

PERFORMED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION STANDARDS (PROCEDURE #G1)

Customer:
ARMSTRONG ENVIRONMENTAL
7715 SOVEREIGN ROW
DALLAS TX 75247-

Cylinder No: SG9128617BAL
Cylinder Pressure: 2000 psig
Certification Date: 04/18/94
Expiration Date: 04/18/96
Analyst: James Laas

Contact:
Telephone: ( ) -

Component: NITRIC OXIDE
Certified Concentration: 112 ± 0.5 PPM

Analytical Method: CHEMILUMINESCENCE

Reference Standard
Standard: GMIS
Cylinder: SG9113408BAL
Concentration: 146.9000PPM

Balance Gas: Nitrogen

189

TOTAL P.03

Air Products and Chemicals, Inc.
SPECIALTY GAS DEPARTMENT
12722 S. WENTWORTH AVENUE
CHICAGO, IL 60628

Certificate of Analysis - EPA Protocol Gas Standard

PERFORMED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION STANDARDS (PROCEDURE #G1

Customer:
APCI
3415 BANNING ST
DALLAS,TX. TX 75233

Notes:

PO: Rel:

Order No: 360-047885
Batch No: 861-23143
Cylinder No: SG9133079B
Cylinder Pressure*: 2000 psig
Certification Date: 01/22/95
Expiration Date: 01/22/97

*** Certified Concentration ***		********* Reference Standards *********			********** Analytical Instrumentation *********			
Component	Certified Concentration	Cylinder #	Standard Number	Concentration	Instrument Make/Model	Serial Number	Last Calibration	Measurement Principal
NITRIC OXIDE	50.8 ±.26 PPM	SG9113412BAL	GMIS	59.0900 PPM	Rosemount 951a	0101877	01/13/95	CHEMILUMINESCE

Balance Gas: Nitrogen

Contaminent	
Nitrogen Dioxide	.200 PPM

* Standard should not be used below 150 psig

190

Analyst: Richard VanDyke

Approved By: Robert McNear

Air Products and Chemicals, Inc.
SPECIALTY GAS DEPARTMENT
12722 S. WENTWORTH AVENUE
CHICAGO, IL 60628

Certificate of Analysis - EPA Protocol Gas Standard

PERFORMED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION STANDARDS (PROCEDURE #G

Customer:
ARMSTRONG ENVIRONMENTAL
7715 SOVEREIGN ROW
DALLAS TX 75247

Notes:

Order No: 36A-00605
Batch No: 861-18318
Cylinder No: SG9132370
Cylinder Pressure*: 2000 psig
Certification Date: 05/25/94
Expiration Date: 05/25/96

PO: 1372 Rel:

*** Certified Concentration ***		********* Reference Standards *********			********** Analytical Instrumentation *********			
Component	Certified Concentration	Cylinder #	Standard Number	Concentration	Instrument Make/Model	Serial Number	Last Calibration	Measurement Principal
NITRIC OXIDE	95.8 ±.42 PPM	SG9103337BAL	GMIS	93.6000 PPM	Rosemount 951a	0101877	05/04/94	CHEMILUMINESCE

Balance Gas: Nitrogen

Contaminent	
Nitrogen Dioxide	.500 PPM

* Standard should not be used below 150 psig

191

Analyst: Richard VanDyke
Richard VanDyke

Approved By: Robert McNear
Robert McNear

AIRCO

Airco Special Gases
4551 North Access Road
Chattanooga
Tennessee 37415

Telephone: 615-877-4387
FAX: 615-877-8694

ANALYTICAL REPORT

To: BOC Gases
2615 Joe Field Road
Dallas, TX 75229

Date Reported: 11-16-94
Test Number: 41269
Fill Date: 11-16-94

Material Submitted: 100 ppm Carbon Monoxide, Balance Nitrogen

Specification Number: BOC Specifications

Method of Analysis: Non-Dispersive Infrared Analyzer

Analyzed: Cylinder No. CC71796 Size 152, CGA 350 1650 psi

Component	Specification	Concentration
Carbon Monoxide	100 ppm	98.0 ppm
Nitrogen	Balance	Balance

by _____
AUTHORIZED SIGNATURE

662813

AIRCO

Airco Special Gases
4551 North Access Road
Chattanooga
Tennessee 37415

Telephone: 615-877-4367
FAX: 615-877-8894

ANALYTICAL REPORT

To: BOC Gases
2615 Joe Field Road
Dallas, TX 75247

Date Reported: 11-16-94
Test Number: 41267
Fill Date: 11-16-94

Material Submitted: 400 ppm Carbon Monoxide, Balance Nitrogen

Specification Number: BOC Specifications

Method of Analysis: Non-Dispersive Infrared Analyzer

Analyzed: Cylinder No. CC6529 Size 152, CGA 350 2000 psi

Component	Specification	Concentration
Carbon Monoxide	400 ppm	391 ppm
Nitrogen	Balance	Balance

by _____
AUTHORIZED SIGNATURE

BOC GASES

BOC GASES
1075 Cinclare Drive
Port Allen
Louisiana 70767
Telephone: 504-388-0900

FAX: 504-388-0959

BOC Gases
Division of the BOC Group, Inc.
1075 Cinclare Drive
Port Allen, LA 70767

Date Reported: 01/05/95

Customer Order No.: R11733

Shipper No.: 671251

Test No.: 0195-021

ANALYTICAL REPORT

To: BOC RETAIL
DALLAS, TX

Material Submitted: CARBON MONOXIDE IN NITROGEN

Information Requested: CARBON MONOXIDE CONCENTRATION

Method of Analysis: NON-DISPERSIVE INFRARED

Result of Investigation: Cyl.No.: CC90936

Component	Specification	Concentration
CARBON MONOXIDE	250 PPM	250 PPM
NITROGEN	BALANCE	BALANCE

Principal Analyst: C. Almarini

Scott Specialty Gases, Inc.

Shipped From: 3714 LAPAS DRIVE
HOUSTON TX 77023
Phone: 713-644-4820 Fax: 713-644-0244

CERTIFICATE OF ANALYSIS

ARMSTRONG ENVIRONMENTAL

7715 SOVEREIGN ROW

DALLAS TX 75247

PROJECT #: 04-31603-001
PO#: 1365
ITEM #: 04021453 2AL
DATE: 4/05/94

CYLINDER #: ALM028262

ANALYTICAL ACCURACY: +-1%
PRODUCT EXPIRATION: 4/04/95

BLEND TYPE : ACUBLEND MASTER GAS

COMPONENT	REQUESTED GAS CONC MOLES		ANALYSIS (MOLES)	
CARBON MONOXIDE	400.	PPM	400.	PPM
NITROGEN		BAL		BAL

2000 PSI

ANALYST: _____ APPROVED BY: _____

Scott Specialty Gases, Inc.

Shipped From: 3714 LAPAS DRIVE
HOUSTON TX 77023
Phone: 713-644-4820 Fax: 713-644-0244

CERTIFICATE OF ANALYSIS

ARMSTRONG ENVIRONMENTAL

7715 SOVEREIGN ROW

DALLAS TX 75247

PROJECT #: 04-29795-001
PO#: 1349
ITEM #: 04021453 2AL
DATE: 1/27/94

CYLINDER #: ALM022671

ANALYTICAL ACCURACY: +/- 1%
PRODUCT EXPIRATION: 1/27/95

BLEND TYPE : ACUBLEND MASTER GAS

COMPONENT	REQUESTED GAS CONC MOLES		ANALYSIS (MOLES)	
CARBON MONOXIDE	100.	PPM	100.	PPM
NITROGEN		BAL		BAL

2000 PSI

ANALYST: _____ APPROVED BY: _____

Scott Specialty Gases, Inc.

Shipped From: 3714 LAPAS DRIVE
HOUSTON TX 77023
Phone: 713-644-4820 Fax: 713-644-0244

CERTIFICATE OF ANALYSIS

ARMSTRONG ENVIRONMENTAL

7715 SOVEREIGN ROW

DALLAS TX 75247

PROJECT #: 04-27582-003
PO#: 1323
ITEM #: 04021412 2AL
DATE:10/26/93

CYLINDER #: AAL16005
FILL PRESSURE: 2000 PSI
BLEND TYPE : ACUBLEND MASTER GAS

ANALYTICAL ACCURACY: +/- 1%
PRODUCT EXPIRATION: 10/25/94

COMPONENT	REQUESTED GAS CONC MOLES		ANALYSIS (MOLES)	
CARBON MONOXIDE	50.	PPM	50.5	PPM
AIR		BAL		BAL

ANALYST: _____ APPROVED BY: _____

CORRIGAN TEXAS OSB STACK TEST OPERATIONAL SUMMARY

ALL INLET PM / CO / NOx / CO_2

06/01/95

DRYER R-T-O

	DRYER 1	DRYER 2	DRYER 3
Dry Furnish Moisture (%)	7.4 - 9.6 8.5	5.0 - 6.4 5.7	6.4 - 7.6 7.0
Inlet Temp. (°F)	700 - 1250 975	250 - 1000 625	300 - 1050 675
Outlet Temp. (°F)	190 - 205 198	255 - 265 260	205 - 220 213
Production (lbs/hr)	14,200 7.1	10,800 5.4	10,400 5.2

14 PLATEN PRESS*

Press Temp. (°F)	400 - 420°
Thickness (in)	0.438**
Density (nominal, lbs/cu ft)	45

PRODUCTION (Finished 3/8 in basis) 18,816 ft^2/hr***
26,460 lbs/hr

*No press stack samples were collected per accepted sampling protocol - currently no control on press emissions.

**Nominal Thickness = 7/16 inch

***Annualized Production of 164,828,160 ft^2 3/8 basis (8760 hrs)

CORRIGAN TEXAS OSB STACK TEST OPERATIONAL SUMMARY

ALL RTO OUTLET

ALL INLET VOC/INCOMP CO2

06/02/95

DRYER R-T-O

	DRYER 1	DRYER 2	DRYER 3
Dry Furnish Moisture (%)	6.6 - 7.0 6.8	4.4 - 5.6 5	6.6 - 10.2 8.4
Inlet Temp. (°F)	350 - 1375 863	150 - 950 550	300 - 1000 650
Outlet Temp. (°F)	200 - 205 203	255 - 265 260	210 - 225 218
Production (lbs/hr)	14,600 7.3	10,800 5.4	11,200 5.6

14 PLATEN PRESS*

Press Temp. (°F)	400 - 420°
Thickness (in)	0.438**
Density (nominal, lbs/cu ft)	45

PRODUCTION (Finished 3/8 in basis) 18,973 ft^2/hr ***
26,681 lbs/hr

*No press stack samples were collected per accepted sampling protocol - currently no control on press emissions.

**Nominal Thickness = 7/16 inch

***Annualized Production of 166,203,480 ft^2 3/8 basis (8760 hrs)