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DETERMINATION  
OF PARTICULATE EMISSION  
FACTORS FOR BOILERS  
AND INCINERATORS  
BRONX AND MANHATTAN

U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Air and Waste Management  
Office of Air Quality Planning and Standards  
Research Triangle Park, North Carolina 27711

**DETERMINATION  
OF PARTICULATE EMISSION  
FACTORS FOR BOILERS  
AND INCINERATORS  
BRONX AND MANHATTAN**

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## ABSTRACT

The purpose of this project was to determine particulate emission factors for residual oil-fired boilers and flue-fed incinerators in apartment houses in South Bronx and Upper Manhattan, New York City. Twenty-five boilers were tested ranging in age from new to fifty years old, with maximum burning rates ranging from 14 to 100 gallons of fuel per hour. Twenty-one incinerators were tested with charging rates from 84 to 383 pounds per hour. All installations were tested as found, that is, no adjustment or maintenance other than cleaning the incinerator was performed prior to conducting the tests.

Tests were conducted utilizing the particulate sampling train developed by the U.S. Environmental Protection Agency.

The emission factors on a dry filter basis were determined to be:

- a. 24.0 pounds of particulate per 1000 gallons of low sulfur residual fuel oil.
- b. 1. 18.9 pounds of particulate per ton of refuse burned.  
2. 7.9 pounds of particulate per ton of refuse charged.

The emission factors on a total (filter plus impinger) basis were found to be:

- a. 33.5 pounds of particulate per 1000 gallons of low sulfur residual fuel oil.
- b. 1. 32.9 pounds of particulate per ton of refuse burned.  
2. 13.9 pounds of particulate per ton of refuse charged.

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New York City Department of Sanitation  
New York State Division of Laboratories and Research

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DETERMINATION OF PARTICULATE EMISSION FACTORS FOR  
BOILERS AND INCINERATORS IN MULTIPLE DWELLINGS  
BRONX AND MANHATTAN

PURPOSE

The purpose of this project was to determine particulate emission factors for residual (#6) oil fired boilers and flue-fed incinerators in apartment houses in the South Bronx and Upper Manhattan areas of New York City. These areas were chosen because ambient air quality standards for particulates are being exceeded in these geographic areas of the City.

PROCEDURE

1. Site Selection

Since it was not possible to stack test every installation within the prescribed geographic area, a procedure was needed to test a number of sites based principally on the degree of upgrading and the geographic location. A list of possible sites (dated 9/20/72) was supplied by the New York City Department of Air Resources and through joint meetings of Federal and City personnel the list was divided into categories A, B, C, D, or upgraded, as follows:

<u>Rating</u>	<u>Boiler Criteria</u>	<u>#in Manhattan</u>	<u>#in Bronx</u>	<u>Total</u>
A	The presence of both a wind box and barometric damper (or sequential draft controller)	17	25	42
B	Only wind box present	7	12	19
C	Only barometric damper	31	44	75
D	Neither wind box nor damper	36	48	84
<hr/>				
Total Surveyed		91	129	220

Upgraded - Those boiler installations complying with design criteria mandated by the New York City Department of Air Resources.

Twenty-five boiler sites were tested.

<u>Rating</u>	<u>Boiler Criteria</u>	<u>#in Manhattan</u>	<u>#in Bronx</u>	<u>Total</u>
A	Installation with at least a scrubber and burner	7	6	13

B	At least a burner but no scrubber	35	22	57
C	Neither a scrubber nor burner	21	79	100
<hr/>				
	Total Surveyed	63	107	170

Upgraded - Those incinerator installations complying with design criteria mandated by the New York City Department of Air Resources.

Twenty-one incinerator sites were tested.

Using the lists as a starting point, the owners of approximately 70 incinerator sites were contacted by a letter requesting permission to test their boiler and incinerator and to install the necessary ports or equipment required for the tests. A pretest inspection was conducted at sites where permission was granted to gather information necessary to conduct the tests. Some sites were rejected for the following reasons:

- a. Chimney falling apart or leaning at a dangerous angle.
- b. Missing bricks or unusual configuration at top preventing use of a stack insert.
- c. Stack height would require too much scaffolding, and exhaust velocities were too low to utilize ports in chimney.
- d. Chimney too far from roof.
- e. Roof considered unsafe for equipment.
- f. Stacks common for other boilers, incinerators and/or hot water heaters.
- g. Difficulty with removing spark arrestor.
- h. Stack too small for insert and velocities too low for sampling.
- i. Boilers burning No. 2 or No. 4 oil instead of residual fuel oil.
- j. Impossible to install oil meters.
- k. Installation inoperative during duration of project.
- l. Site razed.
- m. Fear of damage suits (only verbal approval granted).
- n. Incorrect boiler or incinerator category.
- o. Location in borough outside target area.

The sites tested have been assigned a code number in the following manner:

Site A1BHB -

A = Category A

1 = Site number one within the category

B = Located in Bronx (M designates Manhattan)

H = Public Housing Authority site (P designates private ownership)

B = Boiler Installation (I designates incinerator)

## 2. Actual Sampling

Particulate Sampling was accomplished isokinetically with the train developed by U.S. Environmental Protection Agency complete with the MSA 1106BH filter, optional cyclone, and impinger section. In most cases, a 12 inch x 12 inch stack insert with built-in ports was inserted into the chimney, thus eliminating the possibility that particulate adhering to the chimney wall would bias the results, and imparting a needed higher velocity to the exhaust gases so that tests could be conducted. Fiberglass insulation was used to secure a seal between the chimney and the insert plate.

At the initiation of the project, sampling points were selected in the center of four six inch by six inch areas in accordance with previously published recommendations.<sup>1</sup> At the request of U.S. Environmental Protection Agency, Region II, the sampling points were changed to the center of eight three inch by six inch areas.

At boiler tests, two test trains removed samples simultaneously, one from each of two ports. Since the spacing of the ports did not permit the boxes to be placed side by side, one box was equipped with a three foot glass probe, the other with a five foot glass probe. (See Appendix A). Halfway through the run (30 minutes) the probes were replaced with clean probes, the filter boxes reversed and the test completed. Occasionally, due to a blown fuse or a breakdown of one of the sampling trains, the finishing times of the two trains were different.

At incinerator tests, samples were extracted consecutively, each test run usually lasting for one hour.

The probe wash, filters and impinger catch were sent to the New York State Division of Laboratories and Research in Syracuse for analysis.

Boiler Operation at the initiation of the project was planned to take place by cycling the burner to operate 25% of each hour, with sampling trains turned on and off to match burner operation. It was assumed this cyclic operation would represent a compromise between cold weather and warm weather boiler operation. It soon became obvious the sites had modulating type burners which ran continuously during the morning hours even though the weather was mild. Therefore, tests were taken during continuous operation.

The scope of the study included the determination of soot blowing emissions. Our inspections located several installations with soot blowing equipment, all at Public Housing Authority Sites which had large stacks.

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1. "Specifications for Incinerator Testing at Federal Facilities," U.S. Department of Health, Education, and Welfare, National Center for Air Pollution Control, Durham, North Carolina, October 1967.

It was necessary to sample from ports in the chimney since our small stack insert was not suitable for use in such large stacks. The low stack velocities necessitated the use of a micromanometer for velocity measurement. The usual soot blow operation consisted of blowing compressed air for two second intervals, followed by a 5-10 minute pause while pressure was restored to the equipment. This cyclic operation took place three times daily, usually lasted 20-30 minutes but sometimes extended to one hour, and normally would be activated in the early morning hours. The superintendent was instructed to postpone the early operation on the day of testing and activate the mechanism for our tests. Changes in stack velocity during the soot blowing period were not detectable.

Incinerator Operation was determined by simulating the normal operation as determined by inspection and information supplied by the building superintendent. The superintendent was sometimes able to indicate the volume of refuse normally present at ignition. More often the quantity to be charged was determined after measurement of the combustion chamber volume as follows:

$$\text{Refuse Charged} = \frac{\text{Combustion Chamber Volume}}{2} \times \frac{4.1 \text{ pounds}}{\text{cu. ft.}}$$

The incinerator was first cleaned and then charged with weighed refuse. All charging hoppers were taped closed. The refuse was ignited by the burner or by a match when necessary, and sampling started as soon as measurable velocities were detected. After one hour or a minimum of 30 ft<sup>3</sup> of sampled gas, the fire was extinguished. Prior to the first test run, a garden hose was "calibrated" by noting the quantity of water (spray) delivered per unit time from a spigot available at the site. Later, the water spray was used to extinguish the fire with care taken to avoid spraying the hot refractory, and the time duration of spraying was noted to determine the quantity of water added to the refuse. Half of this added water was assumed absorbed into the refuse, and the other half was assumed to either evaporate or drain away. The refuse was removed and weighed and half of the sprayed water subtracted to determine the amount of refuse remaining after the test. The cleaned incinerator was again charged as before and the same procedure followed for the second test run.

During our later tests, the ashes were extinguished by shoveling them into garbage cans and covering tightly to smother the fire. While the second procedure eliminated the possible error introduced by the addition of water, it introduced a smaller new error by allowing some burning to continue during the cleaning operation.

Bacharach readings were taken at each boiler site where a small hole could be placed in the breeching immediately after the boiler. At multiple boiler installations the readings were taken in the common breeching directly after the point of juncture. At some sites the breeching was not accessible. The measurements were taken every five minutes during burner operation. The instructions accompanying the instruments were followed.

Smoke (opacity) readings were taken at each boiler and incinerator site by qualified observers.

Oil Meters were installed by licensed servicemen at each boiler site in the locations determined by New York City Department of Air Resources inspectors or the servicemen. The meters selected (recommended by New York City Department of Air Resources) were Neptune 5/8" type S meters with horizontal totalizer register model 15<sub>7</sub> complete with gasket type couplings and tail piece and  $\frac{1}{2}$ " strainer. This meter has a recommended range for bunker oil of 2 to 10 GPM, 150 PSI maximum working pressure, 250°F maximum temperature. The face of the register consists of six numeral wheels to indicate tens of gallons, and a circular needle indicator marked to ten-one gallon divisions. (See performance curve, Appendix A).

Installed meters were read immediately, everytime the burner turned on or off. Estimates were made to the nearest  $\frac{1}{4}$  gallon.

Most boiler sites required the installation of two meters, one in the oil supply line and one in the oil return line. A few sites required a third meter where piping permitted recirculation of heated oil.

All meters were calibrated before delivery. At the conclusion of testing the meters were recalibrated. Since calibration is normally performed on thoroughly cleaned meters, we requested the calibration procedure be performed on some of the meters as they were received from the sites and again after a thorough cleaning. (See Appendix A).

Oil Temperature measurements were taken at most installations either by utilizing available temperature gages or measuring the temperature of extracted samples.

Orsat Analysis was performed on samples typically taken on the roof at each boiler and incinerator site. Generally, two integrated samples (each for 30 minutes) were taken at each site consistent with EPA method 3, 40 CFR 60.85, analyzed, and the results averaged.

Equipment Check Lists were completed by personnel associated with the project by inspections at each site during the execution of the project. It was not possible in every instance to conclusively verify data relating to age, capacity, normal operating temperature and pressure, operating condition of equipment, etc.

Oil Samples were taken at the completion of sampling from existing taps or by breaking the bypass piping. Two samples were taken at each boiler site, one for delivery to New York City Department of Air Resources and one for shipping to U.S. EPA in Durham, N.C. The analysis for carbon content performed by EPA, Quality Assurance and Environmental Monitoring Laboratory in North Carolina, was utilized in computation of a carbon balance as part of this project.

Boiler room temperatures and breeching temperatures were also measured.

### 3. Calculations

The equations developed by EPA and published in the Federal Register of December 23, 1971, (Vol. 36, No. 247) as referenced below were used for all calculations relating to emissions expressed in terms of grain loading. Additional equations necessary for calculation of emissions in terms of weight loading are presented.

- a. Stack Velocity and Flow Rates      EPA equations 2-1 thru 2-3

$$Q's = 3600 (V_s \text{ Avg.}) A (T_{std}/T_s \text{ Avg.}) (P_s/P_{std})$$

Where  $Q's$  = total volumetric flow rate of stack gases, including moisture, scf/hr

- b. Orsat Analysis    EPA equation 3-2

- c. Moisture Determination    EPA equations 4-1 thru 4-3

- d. Particulate Emissions    EPA equations 5-1 thru 5-6

$$W_s = \frac{(1.0 \text{ lb}/454,000 \text{ mg.}) M_n}{V \text{ total}} Q's$$

Where  $W_s$  = weight rate of particulate emissions, lb/hr

$M_n$  = total dry filter catch, or

$M_n$  = total (wet and dry) catch, including condensables, used alternately to determine emissions in terms of total catch.

- e. Carbon Balance

lbs C per hour in fuel =

$$\frac{\text{gal}}{\text{hr}} \times \text{S.G. Fuel } (60^\circ) \times 8.33 \frac{\text{lbs}}{\text{gal}} (\text{water } 60^\circ\text{F}) \times \frac{1 \text{b C}}{1 \text{b fuel}}$$

$$\text{lbs C emitted per hour} = Q's \frac{(\% \text{ CO}_2 + \% \text{ CO})}{100} \frac{492^\circ\text{R}}{530^\circ\text{R}} \times \frac{12}{359}$$

- f. Refuse charged per hour = Amount charged  $\div$  duration of burn  
(Duration of burn is taken as elapsed time from start to finish of test)

- g. Refuse burned per hour =

$$\frac{\text{Amount charged} - (\text{ash weight} - \frac{1}{2} \text{ weight of added water})}{\text{duration of burn}}$$

h. Emission factor

$$\frac{\text{lbs particulate}}{1000 \text{ gal fuel}} = \frac{W_s \times 10^3}{\text{gal of fuel per min} \times 60}$$

i. Emission factor

$$\frac{\text{lbs particulate}}{10^6 \text{ BTU}} =$$

$$\frac{W_s}{\text{Gallon of fuel per min} \times 60} \times \frac{10^6}{\text{S.G.}(fuel, } 60^\circ \text{) } \times 8.33 \text{ lbs} \times \text{BTU(fuel)}$$

BOILER EQUIPMENT

Site	Manufacturer	Model No.	Material	Tube Type	Approx. Age of Boiler - Years
A1BHB	Fitzgibbons	MD13990	Steel	Fire Tube	N.A.
A2BPB	Pacific	67L2	Steel	Fire Tube	16
A3BHB	Fitzgibbons	A1781	Steel	Fire Tube	11
A4MPB	Fitzgibbons	RM242	Steel	Fire Tube	30
A5MPB	Pacific	N.A.	Steel	Fire Tube	25
A6BPB	Fitzgibbons	RM182	Steel	Fire Tube	30
A7MPB	Crotty	6438	Steel	Fire Tube	15
A8MPB	National	MD16571	Steel	Fire Tube	30
A9MPB	National	MD13425	Steel	Fire Tube	30
A10BHB	Fitzgibbons	MD44371	Steel	Fire Tube	12
B1MPB	Oil City	N.A.	Steel	Fire Tube	30
B2BPB	Kewanee	RM242	Steel	Fire Tube	25
B3BPB	Oil City	MFG6615M	Steel	Fire Tube	24
B4MPB	Pacific	215LA	Steel	Fire Tube	15
B5BPB	Pacific	22595	Steel	Fire Tube	30
C1BHB	Fitzgibbons	MD44326	Steel	Fire Tube	18
D1MPB	Federal	FST90	Steel	Fire Tube	15
D2MPB	Rockmill	MD14246	Steel	Fire Tube	New
D3MPB	Cokefair	N.A.	Steel	Fire Tube	50
D4BPB	Pacific	N.A.	Steel	Fire Tube	37
U1BPB	Fitzgibbons	RM182	Steel	Fire Tube	30
U2MPB	Oil City	MD10616	Steel	Fire Tube	30
U3MPB	Federal	FM18220	Steel	Fire Tube	12
U4MPB	Pacific	9151	Steel	Fire Tube	15
U5BPB	Fitzgibbons	RM182	Steel	Water Tube	N.A.

N.A. - Not Available

BURNER EQUIPMENT

Site	Manufacturer	Model No.	Type*	Firing Control
A1BHB	Todd	N.A.	1	Modulating
A2BPB	Superior	ABAA6-250	1	Modulating
A3BHB	Todd	187935	1	Modulating
A4MPB	Petro	W-6	1	Modulating
A5MPB	Petro	DP8559	1	Modulating
A6BPB	Enterprise	62900	1	Modulating
A7MPB	York	055-175	1	Modulating
A8MPB	Uniflow	N.A.	1	Modulating
A9MPB	Uniflow	1013	1	Modulating
A10BHB	Todd	4-ML	1	Modulating
B1MPB	Petro	N.A.	1	Modulating
B2BPB	Enterprise	3450-G	1	Modulating
B3BPB	Ray	60N	1	Modulating
B4MPB	Ray	550	1	Modulating
B5BPB	Petro	N.A.	1	On-Off
C1BHB	Todd	F268557	1	Modulating
D1MPB	Hev-E-Oil	AM6E	1	Modulating
D2MPB	Petro	DP7109	1	Modulating
D3MPB	Petro	6AH	1	On-Off
D4BPB	Petro	N.A.	1	On-Off
U1BPB	Enterprise	62900	1	Modulating
U2MPB	Hev-E-Oil	AM6-E	1	Modulating
U3MPB	Petro	WD6AH	1	Modulating
U4MPB	Petro	WD5AH	1	Modulating
U5PB	Petro	W5AH	1	Modulating

\*Type Burner

- 1 - Horizontal Rotary Cup
- 2 - Air Atomizer
- 3 - Steam Atomizer

N.A. - Not Available

BOILER AUXILIARY EQUIPMENT

Site	Primary Oil Heater	Secondary Oil Heater	Combustion Controller	Sequential Draft Contr.	Barometric Damper	Windbox
A1BHB	Yes	Yes	Yes	Yes	No	Yes
A2BPB	Yes	Yes	Yes	Yes	No	Yes
A3BHB	Yes	Yes	Yes	Yes	Yes	Yes
A4MPB	Yes	Yes	Yes	Yes	No	Yes
A5MPB	Yes	Yes	Yes	No	Yes	Yes
A6BPB	Yes	Yes	Yes	Yes	No	Yes
A7MPB	Yes	Yes	Yes	No	Yes	Yes
A8MPB	Yes	Yes	Yes	No	Yes	Yes
A9MPB	Yes	Yes	Yes	No	Yes	Yes
A10BHB	Yes	Yes	Yes	Yes	No	Yes
B1MPB	Yes	Yes	No	No	No	Yes
B2BPB	Yes	Yes	Yes	No	No	Yes
B3BPB	Yes	Yes	Yes	No	No	Yes
B4MPB	Yes	Yes	Yes	No	No	Yes
B5BPB	Yes	Yes	No	No	No	Yes
C1BHB	Yes	Yes	Yes	Yes	Yes	No
D1MPB	Yes	Yes	Yes	No	No	No
D2MPB	Yes	Yes	Yes	No	No	No
D3MPB	Yes	Yes	Yes	No	No	No
D4BPB	Yes	Yes	No	No	No	No
U1BPB	Yes	Yes	Yes	Yes	No	Yes
U2MPB	Yes	Yes	No	No	Yes	Yes
U3MPB	Yes	Yes	Yes	N.A.	Yes	Yes
U4MPB	Yes	Yes	Yes	Yes	Yes	Yes
U5BPB	Yes	Yes	Yes	Yes	No	Yes

N.A. - Not Available

INCINERATOR EQUIPMENT

Site Code	Manufacturer	Model #	Flue Design S or D	Combustion Chamber S or M	Chamber Volume ft <sup>3</sup>	Grate Area ft <sup>2</sup>
A1MHI	Morse Bougler	N.A.	S	N.A.	210	N.A.
A2BHI	Oswald Co.	SFD2R	S	S	150	25
B1BHI	Kernerator	N.A.	S	S	60.75	3
B2BHI	Kernerator	N.A.	S	S	120	8
B3BHI	Unknown	N.A.	S	S	180	18
B4MPI	Equal-Air	N.A.	S	M	64	16
B5BHI	Unknown	N.A.	S	S	96	16
C1MPI	Kernerator	N.A.	S	S	N.A.	12
C2MPI	Kernerator	N.A.	S	S	105	5
C3MPI	Ventomatic	N.A.	S	S	96	no grate
C4BPI	Kernerator	N.A.	S	S	N.A.	no grate
C5MPI	George E. Sealy	N.A.	S	S	48	12
C6BPI	PGM	N.A.	S	S	110	13.5
C7BPI	Interboro	1828B	S	S	56	16
C8BPI	Kernerator	N.A.	N.A.	S	N.A.	6
C9MPI	Ventomatic	N.A.	S	S	N.A.	N.A.
C10MPI	Kerner	N.A.	S	S	44	11
U1BPI	Kernerator	N.A.	S	S	360	40
U2MPI	Kerner	N.A.	S	S	44	11
U3MPI	Equal-Air	N.A.	S	M	64	16
U4BHI	Sargent	N.A.	S	M	177	24

N.A. - Not Available

S - Single

D - Double

M - Multiple

INCINERATOR AUXILIARY EQUIPMENT

Site Code	Primary Burner Y or N	Auxiliary Burner Y or N	Gas Usage CFM	Gas Scrubber Y or N	Over Fire Air Fan & Nozzle System	Cycling Clock	Charging Gate
A1MHI	Yes	No	N.A.	Yes	Yes	Yes	Yes
A2BHI	Yes	No	1.7- 12.5	Yes	Yes	Yes	Yes
B1BHI	Yes	No	5	No	Yes	Yes	No
B2BHI	Yes	No	N.A.	No	Yes	Yes	No
B3BHI	Yes	No	N.A.	No	Yes	Yes	Yes
B4MPI	Yes	Yes	50	No	Yes	Yes	Yes*
B5BHI	Yes	No	N.A.	No	Yes	Yes	No
C1MPI	No	No	No	No	No	No	Yes
C2MPI	No	No	No	No	No	No	No
C3MPI	No	No	No	No	No	No	No
C4BPI	No	No	No	No	No	No	Yes
C5MPI	No	No	No	No	No	No	No
C6BPI	No	No	No	No	No	No	No
C7BPI	No	No	No	No	No	No	No
C8BPI	No	No	No	No	No	No	No
C9MPI	No	No	No	No	No	No	No
C10MPI	No	No	No	No	No	No	No
U1BPI	Yes	Yes	N.A.	Yes	Yes	Yes	Yes
U2MPI	Yes	Yes	Yes	Yes	Yes	Yes	Yes
U3MPI	Yes	Yes	50	Yes	Yes	Yes	Yes
U4BHI	Yes	No	N.A.	Yes	Yes	Yes	Yes

\*Same as U3MPI except scrubber bypassed

N.A. - Not Available

TEST DATE INFORMATION

<u>Site Code</u>	<u>Date Tested</u>	<u>Ambient T °F @ 10 A.M.</u>	<u>Stack Insert Used</u>
A1BHB	6-5-73	80	No
A2BMB	5-4-73	60	Yes
A3BHB	6-23-73	73	No
A4MPB	4-14-73	45	No
A5MPB	3-21-73	37	Yes
A6BPB	5-7-73	60	Yes
A7MPB	4-13-73	40	Yes
A8MPB	4-30-73	59	Yes
A9MPB	5-1-73	64	Yes
A10BHB	6-26-73	71	No
B1MPB	4-11-73	36	No
B2BPB	4-10-73	50	Yes
B3BPB	4-6-73	51	Yes
B4MPB	4-3-73	52	Yes
B5BPB	5-12-73	64	No
C1BMB	6-27-73	69	No
D1MPB	3-27-73	46	Yes
D2MPB	3-23-73	41	Yes
D3MPB	4-4-73	46	Yes
D4BPB	5-5-73	47	Yes
U1BPB	5-22-73	67	Yes
U2MPB	4-20-73	57	Yes
U3MPB	4-18-73	68	No
U4MPB	5-11-73	61	Yes
U5BPB	5-22-73	67	Yes

TABLE 1

BOILER DATA

Site Code	Boiler		Oil Supply		Orsat % O <sub>2</sub>	Results % CO	Bacharach Avq. No.	Range of Ringlemann No.
	Room Avq. T°F	Breeching Avq. T°F	Line Avq. T°F	Average % CO <sub>2</sub>				
A1BHB	82	204	110	1.9	18.1	0.0	1.6	0
A2BPB	92	393	145	5.2	11.8	0.1	2.0	N.A.
A3BHB	88	273	150	0.6	20.0	0.1	N.A.	0*
A4MPB	72	379	108	3.0	14.5	0.4	3.4	0
A5MPB	75	369	119	5.3	13.3	0.3	3.8	N.A.
A6BPB	103	399	130	4.8	12.8	0.0	6.0	0
A7MPB	79	454	N.A.	6.0	12.9	0.1	0.3	0-3
A8MPB	90	422	134	5.8	12.5	0.0	1.0	0
A9MPB	81	342	102	4.5	14.5	0.1	1.0	0
A10BHB	80	303	157	1.7	18.9	0.0	0	.1-.5*
B1MPB	73	328	100	3.7	19.0	0.2	2.5	N.A.
B2BPB	89	342	120	3.4	14.1	0.0	6.0	N.A.
B3BPB	84	372	104	5.0	13.2	0.0	4.5	N.A.
B4MPB	106	478	106	5.6	13.1	0.2	1.5	1-2
B5BPB	98	454	N.A.	7.0	10.8	0.0	5.4	0-1
C1BHB	85	292	146	1.6	19.1	0.1	0	N.A.
D1MPB	103	530	146	7.0	10.7	0.5	1.0	N.A.
D2MPB	78	N.A.	105	5.8	13.7	0.5	N.A.	2.5-4.0
D3MPB	88	403	138	5.6	13.1	0.2	1.0	0
D4BPB	87	375	N.A.	4.8	13.5	1.0	8.9	1.0
U1BPB	82	394	N.A.	1.5	18.9	0.2	7.5	0-.5
U2MPB	80	282	N.A.	5.5	11.8	0.5	0.4	N.A.
U3MPB	86	249	N.A.	3.5	16.0	1.0	0.4	0
U4MPB	93	402	153	5.4	13.4	0.5	6.7	0-3
U5BPB	86	393	N.A.	4.4	13.4	0.0	10.	N.A.

N.A. - Not Available

\*Smoke Density Meter Reading

TABLE 2

CARBON BALANCE

<u>Code No.</u>	<u>Fuel Carbon</u> <u>Avg. input lbs/hr.</u>	<u>Orsat Carbon</u> <u>Avg. output lbs/hr.</u>
A1BHB	370	299
A2BPB	206	162
A3BHB	510	211
A4MPB	209	323
A5MPB	68	116
A6BPB	180	151
A7MPB	195	184
A8MPB	364	157
A9MPB	319	115
A10BHB	551	183
B1MPB	164	122
B2BPB	109	97
B3BHB	121	111
B4MPB	184	160
B5BPB	260	147
C1BPB	630	645
D1MPB	132	136
D2MPB	212	181
D3MPB	260	157
D4BPB	270	164
U1BPB	190	39
U2MPB	195	147
U3MPB	130	226
U4MHB	174	172
U5BPB	215	114

TABLE 3  
INDIVIDUAL BOILER EMISSION FACTORS

		EMISSION FACTORS					
Site Code	Fuel gal/hr	Dry Catch		Total	Dry Catch		Total
		Gr/SCF @ 12% CO <sub>2</sub>	lb/hr		lb/hr	lb/10 <sup>6</sup> BTU	
A1BHB	67.8	.100	1.10	2.09	0.112	16.3	30.8
	94.6	.088	1.03	2.18	0.075	10.9	23.0
	*89.2	.069	1.02	2.84	0.079	11.4	31.9
A2BPB	32.1	.136	.83	1.19	0.179	25.7	37.2
	32.1	.150	.91	1.14	0.196	28.3	35.6
A3BHB	79.5	.086	.65	1.88	0.056	8.2	23.7
	79.5	.067	.57	2.08	0.050	7.2	26.2
	*63.3	.404	2.26	4.84	0.247	35.6	76.4
A4MPB	31.4	.133	1.48	2.10	0.324	47.0	66.9
	33.0	.114	1.22	2.13	0.255	37.1	64.7
A5MPB	10.6	.122	.52	.62	0.339	49.3	58.3
	10.6	.062	.25	.37	0.163	23.8	34.6
	10.6	.049	.20	.29	0.130	18.8	27.4
+A6BPB	28	.058	.33	.60	0.081	11.7	21.3
	28	.074	.40	.83	0.099	14.4	29.6
A7MPB	30.5	.042	.27	.54	0.061	8.8	17.7
	30.5	.042	.30	.62	0.068	10.0	20.2
A8MPB	56.2	.169	1.01	1.22	0.124	17.9	21.7
	56.2	.053	.32	.65	0.039	5.6	11.7
A9MPB	49.5	.024	.11	.24	0.015	2.1	4.8
	49.5	.087	.33	.50	0.046	6.8	10.2
A10BHB	75.6	.312	2.19	2.56	0.200	29.0	33.9
	75.6	.056	.38	.83	0.035	5.1	11.0
	*70.4	.050	.64	1.3	0.063	9.1	18.5

\* Soot Blow Test

\*\* Probable Firing rate

+ U1BPB same site as A6BPB. U1BPB tests conducted after serviceman adjustments to installation.

TABLE 3 (Continued)

EMISSION FACTORS							
Site Code	Fuel gal/hr	Dry Catch		Total	Dry Catch		Total
		Gr/SCF @ 12% CO <sub>2</sub>	lb/hr	lb/hr	lb/10 <sup>6</sup> BTU	lb/1000 gal	
B1MPB	25.5	.102	.43	.61	0.116	17.0	24.0
	25.5	.090	.41	.66	0.111	16.1	25.9
B2BPB	16.9	.063	.26	.53	0.106	15.1	31.5
	16.9	.129	.46	.76	0.188	27.3	45.2
B3BPB	18.8	.057	.22	.42	0.081	11.6	22.2
	18.8	.049	.22	.36	0.081	11.8	18.9
B4MPB	28.6	.034	.20	.31	0.048	7.0	10.7
	28.6	.050	.28	.37	0.068	9.7	12.9
B5BPB	39.3	.058	.31	.49	0.054	8.0	12.6
	39.3	.176	1.03	1.42	0.181	26.1	36.1
C1BHB	98.0	.036	.73	1.89	0.051	7.4	19.3
	98.0	.015	.27	1.95	0.019	2.7	19.8
	*99.5	.032	.74	2.17	0.051	7.4	21.8
	*99.5	.037	.93	2.25	0.065	9.4	22.6
D1MPB	**16.0	.028	.14	.23	0.060	8.5	14.5
	**16.0	.026	.12	.26	0.052	7.6	16.0
D2MPB	32.9	.855	5.61	5.83	1.178	169.9	176.3
	32.9	.888	3.76	3.90	0.789	114.4	118.5
D3MPB	40.6	.037	.21	.76	0.036	5.3	18.7
	41.0	.073	.41	.72	0.069	10.1	17.5
D4BPB	42.0	.328	1.74	2.02	0.286	41.4	48.0
	42.0	.211	1.13	1.68	0.186	26.9	39.9
U1BPB	29.4	.885	1.46	1.81	0.343	49.8	61.7
	29.4	.346	.55	.73	0.129	18.6	24.7
U2MPB	30.4	.049	.25	.33	0.057	8.1	10.9
	30.4	.017	.09	.20	0.020	2.8	6.5
U3MPB	**20.2	.009	.24	.48	0.082	11.9	23.8
	**20.2	.013	.26	.41	0.0889	12.9	20.2
U4MPB	26.4	.076	.45	.68	0.118	17.2	25.6
	26.4	.082	.49	.68	0.128	18.4	25.8
U5BPB	33.3	.494	2.37	2.55	0.492	71.2	76.7
	33.3	.596	2.85	3.05	0.591	85.4	91.5

\* Soot Blow Test

\*\* Probable Firing Rate

TABLE 4

## AVERAGE BOILER EMISSION FACTORS

DRY (FILTER) CATCH ONLY (EXCLUDING SOOT BLOW)									
Boiler Category	Manhattan					Bronx			
	Gr/SCF @ 12% CO <sub>2</sub>	1b/hr	1b/10 <sup>6</sup> BTU	1b/10 <sup>3</sup> gal		Gr/SCF @ 12% CO <sub>2</sub>	1b/hr	1b/10 <sup>6</sup> BTU	1b/10 <sup>3</sup> gal
A	.815	.546	.142	20.7		.113	.839	.108	15.7
B	.069	.330	.086	12.5		.089	.417	.115	16.7
C	-	-	-	-		.026	.50	.035	5.1
D	.323	1.71	.364	52.6		.270	1.435	.236	34.2
U	.041	.297	.082	11.9		.580	1.808	.389	56.3
Average of All Sources (Excluding Soot Blow)					.155 gr/SCF @ 12% CO <sub>2</sub> .813 lb/hr .167 lb/10 <sup>6</sup> BTU 24.0 lb/10 <sup>3</sup> gal				
TOTAL (FILTER + IMPINGER) CATCH (EXCLUDING SOOT BLOW)									
A	-	.844	-	30.7		-	1.538	-	27.2
B	-	.488	-	18.4		-	.663	-	27.8
C	-	-	-	-		-	1.92	-	19.6
D	-	1.95	-	60.3		-	1.85	-	44.0
U	-	.463	-	18.8		-	2.04	-	63.7
Average of All Sources (Excluding Soot Blow)					1.19 lb/hr 33.5 lb/10 <sup>3</sup> gal				

TABLE 5

INCINERATOR TEST DATA

Run No. 1

<u>Site</u>	<u>Refuse Charged (1b)</u>	<u>Refuse Burned (1b)</u>	<u>Refuse Charging Rate (lb/hr)</u>	<u>Refuse Burning Rate (lb/hr)</u>	<u>Amount of Water to Extinguish Fire (lb)</u>
A1MHI	279.0	22.1	262	21	none
A2BHI	281.5	122.5	302	131	none
B1BHI	124.9	64.6	134	69	none
B2BHI	154	52.1	132	45	none
B3MHI	148.8	81	140	76	none
B4MPI	195.1	117.1	195	117	10.3
B5BHI	201	35.5	188	33	none
C1MPI	83.8	37.2	95	42	8.7
C2MPI	129.0	54.0	103	43	none
C3MPI	154	33	154	33	2.0
C4MPI	127.5	24.0	120	23	none
C5MPI	106.0	22.9	135	29	20.6
C6BPI	113.5	83.0	106	78	none
C7BPI	160.0	86.0	175	94	none
C8BPI	107.6	74	91	63	none
C9MPI	108	45.4	110	46	none
C10MPI	105.0	39.8	158	60	25.9
U1BPI	290.5	71.5	291	72	61.0
U2MPI	110.5	64.5	105	61	none
U3MPI	196.8	131.6	156	70	45
U4BHI	383.3	142.1	343	127	none

Run No. 2

A1MHI	277.0	56.5	260	53	none
A2BHI	279.0	150.0	299	161	none
B1BHI	127.1	57.3	136	61	none
B2BHI	142.8	68.9	138	67	none
B3MHI	150	90	132	79	none
B4MPI	204.8	113.9	205	114	none
B5BHI	219.5	115	205	108	1.3
C1MPI	83.8	42.1	105	53	9.8
C2MPI	123.5	50.5	99	40	none
C3MPI	135.5	76	125	70	2.0
C4MPI	116.0	43.5	102	38	none
C5MPI	105.0	35.2	131	44	9.9
C6BPI	117.5	88.0	110	83	none
C7BPI	158.0	87.5	155	86	none
C8BPI	112.8	37.9	121	41	none
C9MPI	112.5	61.8	116	64	none
C10MPI	106.0	43.2	159	65	25.9
U1BPI	269.5	88.0	284	93	20.0
U2MPI	150.7	67.7	117	53	none
U3MPI	188.1	77.8	128	53	10.3
U4BHI	373.5	163.55	334	146	none

Run No. 3

A1MHI	269.8	137.3	253	129	9.8
B2BHI	141.9	66.3	147	69	none
B3MHI	147	62.8	110	51	8.3
B5BHI	199.5	114	187	107	none
C1MPI	83.8	39.2	91	43	14.1
C2MPI	128.0	73.5	107	61	none
C3MPI	151.5	81.5	157	84	2.0
C4MPI	118	76	89	57	none
C5MPI	108.8	40.8	133	50	9.9
C6BPI	115.0	70.0	108	66	none
C7BPI	157.5	65.5	152	63	none
C8BPI	107.2	38.8	111	40	none
C9MPI	107.5	71	111	73	none
C10MPI	105.1	53.6	158	80	25.9
U1BPI	258.5	100.5	263	102	22.0

TABLE 6  
INDIVIDUAL INCINERATOR EMISSION FACTORS  
 EMISSION FACTORS

SITE CODE	DRY	CATCH	TOTAL	DRY	TOTAL	DRY	TOTAL
	Gr/SCF @12%CO <sub>2</sub>	Lb/Hr	Lb/Hr	Lb/Ton Charge	Lb/Ton Charge	Lb/Ton Burn	Lb/Ton Burn
A1MHI	1.224	0.48	0.75	3.7	5.7	45.6	71.0
	0.380	0.22	0.54	1.7	4.2	8.3	20.3
	0.826	0.55	0.93	4.3	7.4	8.6	14.4
A2BHI	0.482	0.61	1.31	4.0	8.7	9.4	20.2
	0.457	1.06	1.73	7.1	11.6	13.2	21.5
B1BHI	0.297	0.49	0.84	7.3	12.5	14.1	24.4
	0.715	0.84	1.35	12.4	19.9	27.6	44.4
B2BHI	1.356	0.79	1.37	12.0	20.8	35.0	61.0
	2.010	0.96	1.31	13.9	19.0	28.7	39.0
	1.547	0.70	1.20	9.5	16.3	20.3	34.8
B3MHI	0.660	0.43	0.77	6.1	11.0	11.3	20.2
	0.484	0.58	1.12	8.8	17.0	14.8	28.3
	1.003	0.97	1.35	17.6	24.5	38.1	52.7
*B4MPI	0.222	0.30	0.44	3.1	4.5	8.6	12.7
	0.133	0.23	0.44	2.2	4.3	4.1	7.9
B5BHI	0.404	0.50	1.03	5.3	11.0	30.2	62.3
	0.254	0.57	1.41	5.6	13.8	10.6	26.2
	0.686	1.18	2.35	12.6	25.1	22.0	44.0
C1MPI	1.021	0.68	1.03	14.3	21.7	32.6	49.1
	0.724	0.35	0.81	6.7	15.4	13.3	30.4
	0.422	0.22	0.38	4.8	8.4	10.0	17.1
C2MPI	1.857	0.71	0.92	13.8	17.9	31.7	40.8
	1.915	0.58	0.86	11.7	17.4	28.8	43.0
	1.266	0.45	0.64	8.4	12.0	14.9	21.1
C3MPI	7.730	0.34	0.68	4.4	8.8	19.2	38.9
	-	0.62	0.93	9.9	14.9	17.6	26.7
	-	1.04	1.57	13.2	20.0	24.7	37.3

\*Same site as U3MPI except scrubber bypassed.

**EMISSION FACTORS (Continued)**

SITE CODE	DRY	CATCH	TOTAL	DRY	TOTAL	Dry	TOTAL
	Gr/SCF @12%CO <sub>2</sub>	Lb/Hr	Lb/Hr	Lb/Ton Charge	Lb/Ton Charge	Lb/Ton Burn	Lb/Ton Burn
C4BPI	1.355	0.75	1.02	12.5	17.0	64.9	88.5
	1.262	0.62	0.85	12.2	16.7	33.2	44.6
	0.536	0.30	0.49	6.7	11.0	10.4	17.1
	0.559	0.31	0.58	5.7	10.6	10.3	19.2
C5MPI	0.207	0.16	0.50	2.4	7.4	11.1	34.2
	0.268	0.20	0.52	3.1	7.9	9.3	23.7
	0.339	0.24	0.58	3.6	8.7	9.4	23.3
C6BPI	0.669	0.62	0.93	11.7	17.5	15.9	23.8
	0.678	0.48	0.69	8.7	12.5	11.7	16.7
	0.621	0.46	1.79	8.5	33.1	13.9	54.2
C7BPI	2.618	2.73	4.29	31.2	49.0	58.1	91.3
	1.130	0.89	2.20	11.5	28.4	20.6	51.1
	0.934	0.65	1.77	8.6	23.3	20.6	56.2
C8BPI	0.505	0.34	0.62	7.5	13.6	10.8	19.5
	2.216	0.47	0.74	7.8	12.2	22.7	36.0
C9MPI	3.056	0.73	1.18	13.3	21.5	31.6	51.5
	0.676	0.36	0.66	6.2	11.4	11.1	20.8
	0.312	0.27	0.64	4.9	11.5	7.3	17.6
C10MPI	0.610	0.34	0.62	4.3	7.8	11.2	20.8
	1.853	0.88	1.29	11.1	16.2	27.2	39.6
U1BPI	1.240	1.48	2.28	10.2	15.7	41.0	63.3
	0.296	0.42	1.09	3.0	7.7	9.1	23.4
	0.393	0.51	0.89	3.9	6.8	9.9	17.4
U2MPI	0.458	0.42	0.78	8.0	14.9	13.8	24.8
	0.233	0.14	0.28	2.4	4.8	5.3	10.4
U3MPI	0.146	0.25	0.48	3.2	6.2	9.3	18.3
	0.088	0.15	0.38	2.3	5.9	2.7	6.6
U4BHI	0.209	0.41	0.65	2.4	3.8	6.5	10.2
	0.219	0.41	0.62	2.5	3.7	5.6	8.5

TABLE 7

## AVERAGE INCINERATOR EMISSION FACTORS

DRY (FILTER) CATCH ONLY								
Incinerator Category	Manhattan				Bronx			
	Gr/SCF @ 12% CO <sub>2</sub>	lb/hr	1b/ton Charged	1b/ton Burned	Gr/SCF @ 12% CO <sub>2</sub>	lb/hr	1b/ton Charged	1b/ton Burned
A	0.810	0.42	3.2	20.8	0.470	0.84	5.6	11.3
B	0.500	0.50	7.6	15.4	0.909	0.75	9.8	23.6
C	1.484	0.48	8.0	18.3	1.090	0.72	11.1	24.4
U	0.231	0.24	4.0	7.8	0.471	0.65	4.4	14.4
Average of All Sources					0.959 gr/SCF @ 12% CO <sub>2</sub>			
					0.58 lb/hr			
					7.9 lb/ton Charged			
					18.9 lb/ton Burned			
TOTAL (FILTER + IMPINGER) CATCH								
A	-	0.74	5.8	35.2	-	1.52	10.2	20.9
B	-	0.82	12.3	24.4	-	1.36	17.3	42.0
C	-	0.81	13.5	31.5	-	1.33	20.4	43.2
U	-	0.48	8.0	15.0	-	1.11	7.5	24.6
Average of All Sources					1.03 lb/hr			
					13.9 lb/ton Charged			
					32.9 lb/ton Burned			

TABLE 8  
INCINERATOR OPERATION

Site Code	Average Orsats			Range of Ringlemann No.
	%CO <sub>2</sub>	%O <sub>2</sub>	%CO	
A1MHI	.8	14.6	0.0	0
A2BHI	1.5	18.9	0.1	N.A.
B1BHI	2.2	17.6	0.0	N.A.
B2BHI	0.7	18.9	0.1	<1
B3MHI	1.5	19.0	0.0	<1-1
B4MPI	1.8	17.6	0.6	0-1
B5BHI	1.8	18.1	0.2	.5
C1MPI	1.4	19.2	0.0	<1
C2MPI	1.3	19.0	0.1	2.5
C3MPI	0.1	20.2	0.0	<1-2
C4BPI	1.3	19.4	0.1	<1
C5MPI	1.2	19.2	0.1	N.A.
C6BPI	1.7	18.2	0.1	N.A.
C7BPI	1.3	17.4	0.1	<1
C8BPI	1.1	19.6	0.0	1-3
C9MPI	0.9	19.7	0.0	1-2
C10MPI	1.0	19.6	0.1	<1
U1BPI	1.8	18.2	0.1	0-1
U2MPI	1.5	19.0	0.1	<1
U3MPI	1.8	17.6	0.6	0-1
U4BHI	1.9	18.2	0.1	<1

N.A. - Not Available

## DISCUSSION OF RESULTS

### Site Criteria

The pre-test inspections revealed the list of possible sites was in error in several ways. Many of the listed sites had been razed and many of the listed sites were outside the geographic area selected for the study. In addition, many of the sites were listed in an incorrect category, and many sites did not burn No. 6 fuel oil. Better than half the listed sites were owned by the Public Housing Authority. It is apparent that the number of sites assigned to a given category is incorrect and the total number of actual installations is also inaccurate.

An additional complication of the site criteria relates to the status of "upgraded" and how it is defined. On the surface it would appear that any installation with a Certificate to Operate issued by the New York City Department of Air Resources should be considered an upgraded unit. Some of these certificates signify compliance with obsolete rules, therefore, the "upgraded" category is not uniform as a group. Furthermore, some installations classified as in "A" category were in fact simply awaiting the processing of permits since they satisfied all the equipment requirements of the "upgraded" status. In consideration of the above difficulties, a simple arithmetic average of all the emission factors was considered appropriate.

Our method of gaining access to sites for testing was prompted by the time limits established for the study and the large number of sites to be tested during the specified time period. Many private apartment houses are owned by groups of individuals (corporations). While this fact to some extent facilitated gaining access for testing, it was curious that they granted permission to test at some sites but not at others. It is our belief we did not receive permission to test sites known to be in non-compliance or known to be in a state of serious disrepair. This observation is based on the refusal by many owners to allow us to test sites which were under orders by New York City Department of Air Resources to upgrade by December 31, 1973, and on the admission by some owners they would only allow us to test sites which they were confident would meet the New York City Code. A frequent observation by the test personnel and EPA observers was that smoke of number three Ringelmann, or greater, was discharged from several chimneys in the vicinity of each test but rarely by the site being tested.

### Boilers

In addition to the uncertainties associated with site criteria, the following factors must be considered in evaluating the validity of our results:

a. The fact that most burners operated continuously during the morning, albeit the weather was mild, suggests the installations had been adjusted for summer operation, or were capable by design of operating at a lower burning level. Most sites were equipped with modulating type burner controls

which could run continuously at a lower burning rate. Since the average outdoor temperature was approximately 56°F the project may not have sampled emissions that would be representative of yearly operation. (See Appendix F for tests conducted during colder weather).

b. The use of stack inserts, while necessary to expedite the project and obtain measurable stack velocities must be regarded as an added resistance to the chimney draft, with the expectation that reduced draft may alter the emissions.

c. We experienced problems with maintaining heat to the probes for a variety of reasons. Although retests were conducted whenever we were aware the probe was not heating properly, an examination of the laboratory reports reveals considerable fluctuation in the material washed from the probes. We are aware that unheated probes might allow the formation of sulphates.

d. We also have doubts about being able to completely clean the glass probes at the end of each test run. Our usual practice of flushing the probe at least twice, with acetone, has usually proven satisfactory. We note that failure to remove all adhering particulates could distort the results of both the test completed and a following test run.

e. A study of the tabulated emissions from each boiler site readily reveals that although essentially simultaneous tests were accomplished, the results from some of these tests differ by 300% or more. Accepting the vagaries of particulate material in a gas stream, and allowing for slight differences in the sampling trains or their operation, there is no reason to expect the results from the two trains to be identical but they should be much closer than some of the results we have obtained.

The emission factors shown in Table 4 do not display as clear a relationship between emissions and the degree of upgrading as might be expected. The lack of correlation may be due to faulty listing by category, faulty testing procedures, an inadequate number of tested sites, or factors which might override the effect of upgrading such as proper maintenance, or operation at less than full capacity, or all of these.

A comparison of Orsat, Bacharach, and Ringlemann readings in Table 1 reveals no clear relationship. Missing Orsat readings were caused by punctured sample bags or inoperative pumps. Some Bacharach readings could not be taken since the breeching was inaccessible. Missing Ringlemann observations were caused by inadequate communication between the test teams, supervising personnel, and the project engineer.

A study of the results of soot blow tests indicates that emissions during soot blowing are generally more than those during non-soot blowing operation as would be expected. Soot blow tests were conducted using chimney ports and extremely low velocities were present. Even use of a micromanometer could not produce velocity head readings which could be considered accurate, therefore, the quantitative results are considered questionable.

### Incinerators

In addition to the uncertainties associated with site criteria, the following factors must be considered in evaluating the validity of our results:

- a. The urgency of the project did not permit a sufficient study of the typical operating level of each incinerator. Charging levels were determined either from calculation or the statements of the building superintendent. It is entirely possible that everyday refuse is charged at higher or lower levels than those utilized in this project.
- b. The test procedures mandated a thorough cleaning of the grates and ashpit of the incinerator before each test. It is very doubtful that such procedures are daily routine at most installations.
- c. Charging hopper doors were taped shut to prevent additional, undeterminable loading during the tests; this procedure was unavoidable. Additional charging during the burning period would certainly disturb the burning bed and create additional emission of ash.
- d. The use of stack inserts, as previously discussed, might change the emissions.

A study of the tabulated emissions from each incinerator site (Table 6) reveals that consecutive tests did not always result in similar emissions even when similar quantities of refuse were charged or burned. Since actual apartment house refuse was burned during the project, differences in composition of the refuse would be expected to produce different levels of emissions. Of the twenty-one sites tested, ten show a pattern of decreasing emissions with each consecutive test run; six show a pattern of increasing emissions with each consecutive test run. We did not collect sufficient data to associate these patterns with the incinerator design or operation.

When the incinerator tests results are viewed individually, there appears to be no consistency of the results with upgrading category. When averages of the emissions are studied in Table 7, there is a clear difference between the emissions from upgraded and non-upgraded incinerator installations and a less decisive pattern of emissions related to categories of non-upgraded units.

A comparison of Orsat and Ringlemann readings in Table 8 discloses a clear relationship between a low percentage of oxygen and zero Ringlemann observations.

### CONCLUSIONS

The emission factors determined by this study of apartment house boilers burning low sulfur #6 fuel oil can be considered as average emissions during mild weather operation. The emission factors for apartment house flue-fed incinerators are as representative as can be obtained under the conditions necessary for performance of stack tests.

**APPENDIX A**

**A-2 - Stack Insert**

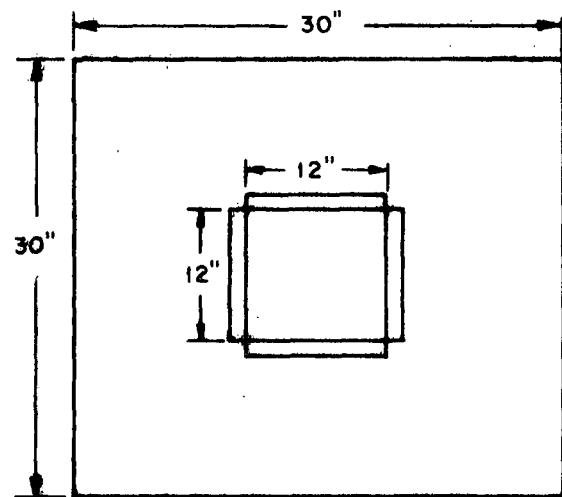
**A-3 - Oil Meter Performance Curve**

**A-4 - Oil Meter Recalibration Results**

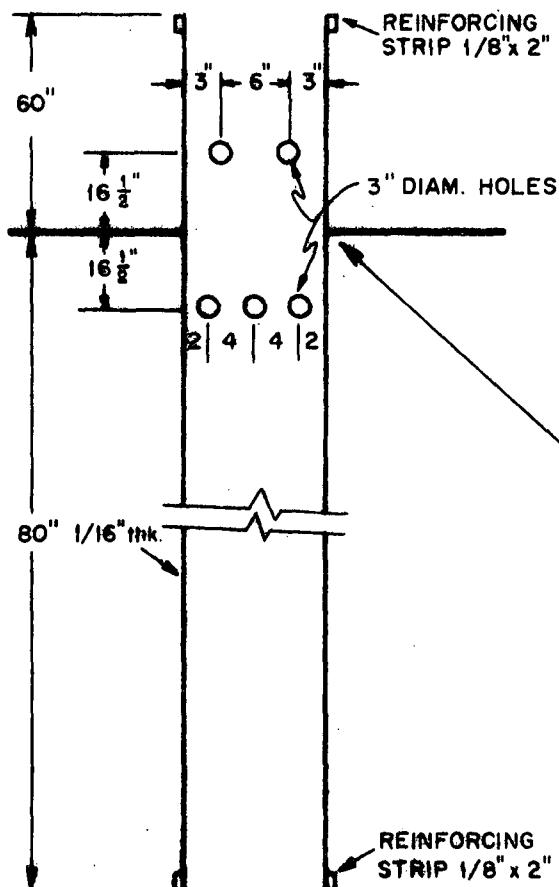
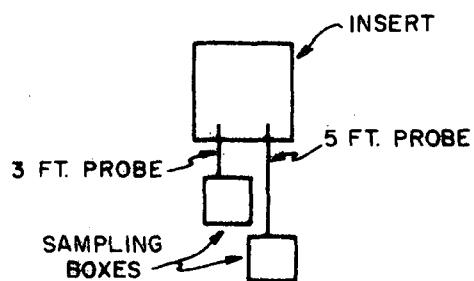
FIGURE 1

**STACK INSERT**

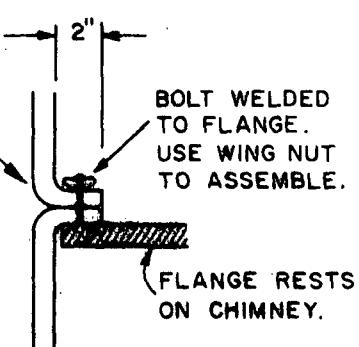
(NOT TO SCALE)



TWO ADDITIONAL  
FLANGES 36 x 36 x 1/8" THICK  
48 x 48 x 1/8" THICK



Sketch of insert in use at boiler sites  
showing arrangement of sampling boxes.

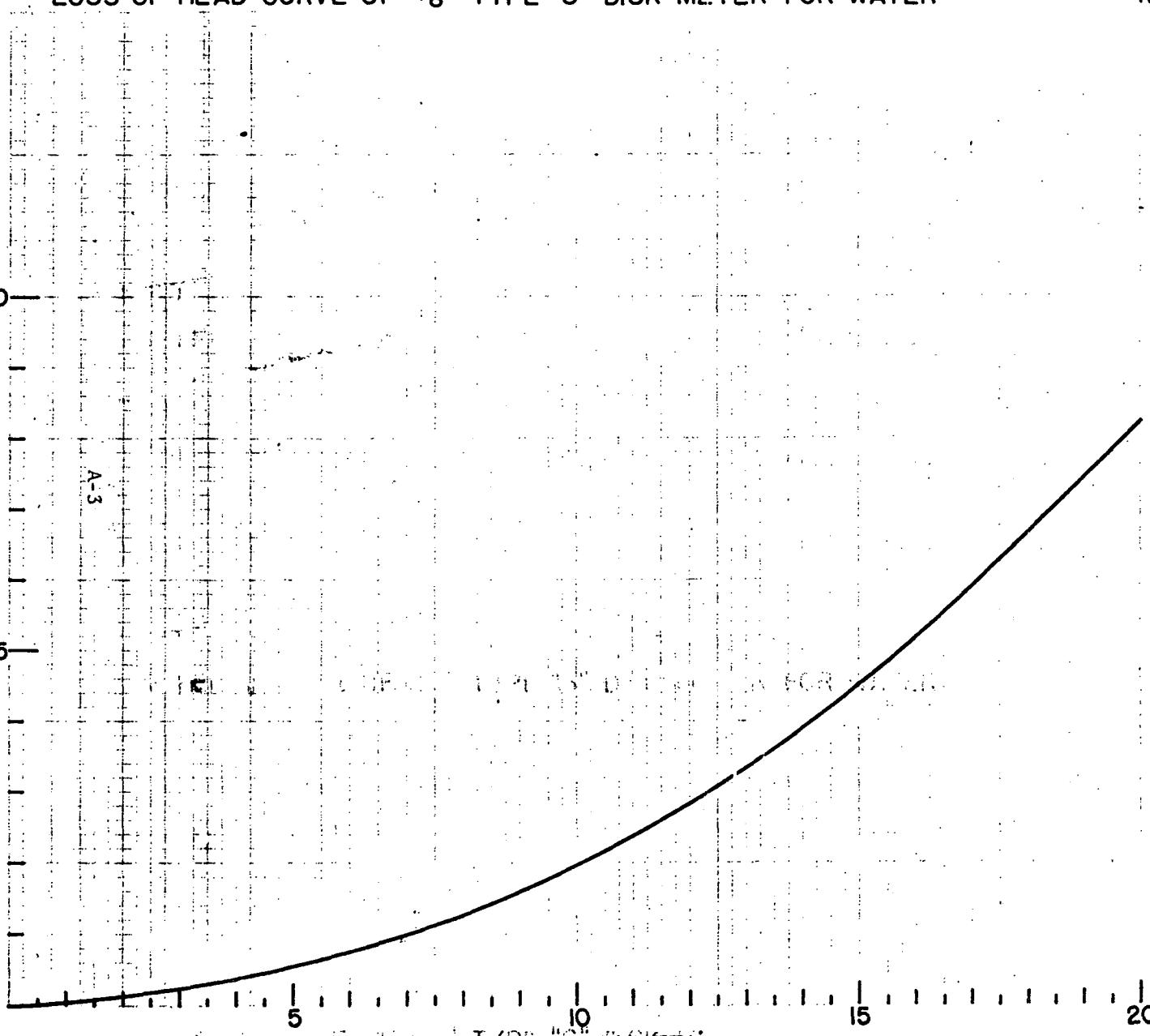
Detail of Assembly

NOTES: 1. MATERIAL - ALUMINUM  
2. ALL SEAMS WELDED

LOSS OF HEAD CURVE OF  $\frac{5}{8}$ " TYPE "S" DISK METER FOR WATER

NEPTUNE METER CO.

PRESSURE DROP (POUNDS PER SQUARE INCH)



FLOW RATE (GALLONS PER MINUTE)

CHART NO. 70045

PRESSURE DROP (POUNDS PER SQUARE INCH)

Recalibration Results of Fuel Oil Flow Meters

The oil flow meters used during this project were recalibrated at the conclusion of the project with the following results:

<u>Meter Serial No.</u>	<u>First Test Result</u>	<u>Second Test Result</u>
19775485	99.9%	99.8%
19775488	100.0	100.1
19775493	99.9	100.5
19775494	99.9	99.9
19775495	99.9	100.1
19775496	20.0	100.8
19775497	101.0	101.2
19775498	100.4	100.2
19775502	99.9	100.1
19775508	100.2	100.1
19775513	99.8	99.6
19775514	100.2	100.0
19775518	100.2	100.0
20764004	106.8	107.0
20764007	98.8	98.6
20764008	101.6	101.4
20764009	109.0	108.9
20764010	100.1	100.0
20764230	101.0	101.2
20764331	100.2	100.3

Recalibration was performed by Roman Tank Inc.  
37-19 23rd Street  
Long Island City, New York

## **APPENDIX B**

### **Computer Printout of Emission Data**

#### **NOTE**

The units shown for particulate emissions from boilers should read lb/1000 gal., not lb/ton as shown.

PLANT: A1BHB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	AVERAGE
DATE OF RUN		06-04-73	
STACK AREA	FT2	40.100	
NET TIME OF RUN	MIN	64.0	
BAROMETRIC PRESSURE	IN.HG	30.00	
AVG ORIFICE PRES DROP	IN.H2O	1.500	
VOL DRY GAS-METER COND	DCF	44.10	
AVG GAS METER TEMP	DEG.F	98.5	
VOL DRY GAS-STD COND	DSCF	42.11	
TOTAL H2O COLLECTED	ML	54.3	
VOL H2O VAPOR-STD COND	SCF	2.57	
PERCENT MOISTURE BY VOL		5.8	
MOLE FRACTION DRY GAS		0.942	
PERCENT CO2 BY VOL, DRY		1.8	
PERCENT O2 BY VOL, DRY		18.3	
PERCENT CO BY VOL, DRY		0.0	
PERCENT N2 BY VOL, DRY		79.9	
MOLECULAR WT-DRY STK GAS		29.02	
MOLECULAR WT-STK GAS		28.39	
AVG STACK TEMPERATURE	DEG.F	156.0	
NET SAMPLING POINTS		1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.00	
AVG STACK GAS VELOCITY	FPS	4.375	4.375
STK FLOWRATE, DRY,STD CN	DSCFM	8555.	8555.
ACTUAL STACK FLOWRATE	ACFM	10526.	10526.
PERCENT ISOKINETIC		100.5	100.5
PARTICULATE WT-PARTIAL	MG	41.20	41.20
PARTICULATE WT-TOTAL	MG	77.80	77.80
PERC IMPINGER CATCH		47.0	47.0
PART. LOAD-PTL,STD CN	GR/DSCF	0.01507	0.01507
PART. LOAD-TTL,STD CN	GR/DSCF	0.02845	0.02845
PART. LOAD-PTL,STD CN @ 12% CO2		0.10046	0.10046
PART. LOAD-TTL,STD CN @ 12% CO2		0.18970	0.18970
PART. LOAD-PTL,STK CN	GR/ACF	0.01224	0.01224
PART. LOAD-TTL,STK CN	GR/ACF	0.02312	0.02312
PARTIC EMIS-PARTIAL	LB/HR	1.10	1.10
PARTIC EMIS-TOTAL	LB/HR	2.09	2.09
PART EMIS/WT PRD FD PTL	LB/TON	16.29787	16.29787
PART EMIS/WT PRD FD TTL	LB/TON	30.77606	30.77606
PERCENT EXCESS AIR		655.1	655.1

PLANT: A1BHB...CONTINUED  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	2	3	AVERAGE
DATE OF RUN		06-05-73	06-05-73	
STACK AREA	FT2	40.100	40.100	
NET TIME OF RUN	MIN	32.0	32.0	
BAROMETRIC PRESSURE	IN.HG	30.00	30.00	
Avg ORIFICE PRES DROP	IN.H2O	1.800	1.900	
VOL DRY GAS-METER COND	DCF	22.56	24.75	
Avg GAS METER TEMP	DEG.F	92.5	99.0	
VOL DRY GAS-STD COND	DSCF	21.79	23.63	
TOTAL H2O COLLECTED	ML	23.0	25.0	
VOL H2O VAPOR-STD COND	SCF	1.09	1.18	
PERCENT MOISTURE BY VOL		4.8	4.8	
MOLE FRACTION DRY GAS		0.952	0.952	
PERCENT CO2 BY VOL, DRY		1.8	1.8	
PERCENT O2 BY VOL, DRY		18.3	18.3	
PERCENT CO BY VOL, DRY		0.0	0.0	
PERCENT N2 BY VOL, DRY		79.9	79.9	
MOLECULAR WT-DRY STK GAS		29.02	29.02	
MOLECULAR WT-STK GAS		28.49	28.49	
Avg STACK TEMPERATURE	DEG.F	171.0	171.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.00	30.00	
Avg STACK GAS VELOCITY	FPS	4.746	4.747	4.747
STK FLOWRATE, DRY, STD CN	DSCFM	9157.	9157.	9157.
ACTUAL STACK FLOWRATE	ACFM	11420.	11420.	11420.
PERCENT ISOKINETIC		97.2	105.4	101.3
PARTICULATE WT-PARTIAL	MG	18.60	16.80	17.70
PARTICULATE WT-TOTAL	MG	39.30	41.10	40.20
PERC IMPINGER CATCH		52.7	59.1	55.9
PART. LOAD-PTL,STD CN	GR/DSCF	0.01315	0.01095	0.01205
PART. LOAD-TTL,STD CN	GR/DSCF	0.02778	0.02678	0.02728
PART. LOAD-PTL,STD CN @ 12% CO2	GR/DSCF	0.08764	0.07298	0.08031
PART. LOAD-TTL,STD CN @ 12% CO2	GR/DSCF	0.18517	0.17855	0.18186
PART. LOAD-PTL,STK CN	GR/ACF	0.01054	0.00877	0.00965
PART. LOAD-TTL,STK CN	GR/ACF	0.02226	0.02146	0.02186
PARTIC EMIS-PARTIAL	LB/HR	1.03	0.86	0.95
PARTIC EMIS-TOTAL	LB/HR	2.18	2.10	2.14
PART EMIS/WT PRD FD PTL	LB/TON	10.90738	9.08266	9.99502
PART EMIS/WT PRD FD TTL	LB/TON	23.04622	22.22008	22.63315
PERCENT EXCESS AIR		655.1	655.1	655.1

PLANT: A1BHB(SOOT)

LOCATION: NYC

OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	4	5	AVERAGE
DATE OF RUN		06-22-73	06-22-73	
STACK AREA	FT2	40.100	40.100	
NET TIME OF RUN	MIN	32.0	32.0	
BAROMETRIC PRESSURE	IN.HG	29.50	29.50	
AVG ORIFICE PRES DROP	IN.H2O	2.700	1.900	
VOL DRY GAS-METER COND	DCF	28.27	23.08	
AVG GAS METER TEMP	DEG.F	97.0	99.0	
VOL DRY GAS-STD COND	DSCF	26.70	21.67	
TOTAL H2O COLLECTED	ML	23.8	17.2	
VOL H2O VAPOR-STD COND	SCF	1.13	0.82	
PERCENT MOISTURE BY VOL		4.1	3.6	
MOLE FRACTION DRY GAS		0.959	0.964	
PERCENT CO2 BY VOL, DRY		2.0	2.0	
PERCENT O2 BY VOL, DRY		17.8	17.8	
PERCENT CO BY VOL, DRY		0.0	0.0	
PERCENT N2 BY VOL, DRY		80.2	80.2	
MOLECULAR WT-DRY STK GAS		29.03	29.03	
MOLECULAR WT-STK GAS		28.58	28.63	
AVG STACK TEMPERATURE	DEG.F	164.0	164.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.50	29.50	
AVG STACK GAS VELOCITY	FPS	5.935	4.700	5.318
STK FLOWRATE, DRY,STD CN	DSCFM	11471.	9125.	10298.
ACTUAL STACK FLOWRATE	ACFM	14280.	11308.	12794.
PERCENT ISOKINETIC		95.1	97.0	96.1
PARTICULATE WT-PARTIAL	MG	21.00	15.20	18.10
PARTICULATE WT-TOTAL	MG	61.20	39.80	50.50
PERC IMPINGER CATCH		65.7	61.8	63.7
PART. LOAD-PTL,STD CN	GR/DSCF	0.01211	0.01080	0.01146
PART. LOAD-TTL,STD CN	GR/DSCF	0.03530	0.02828	0.03179
PART. LOAD-PTL,STD CN @ 12% CO2		0.07268	0.06481	0.06874
PART. LOAD-TTL,STD CN @ 12% CO2		0.21180	0.16970	0.19075
PART. LOAD-PTL,STK CN	GR/ACF	0.00972	0.00871	0.00922
PART. LOAD-TTL,STK CN	GR/ACF	0.02834	0.02281	0.02557
PARTIC EMIS-PARTIAL	LB/HR	1.19	0.84	1.02
PARTIC EMIS-TOTAL	LB/HR	3.47	2.21	2.84
PART EMIS/WT PRD FD PTL	LB/TON	13.35152	9.47101	11.41127
PART EMIS/WT PRD FD TTL	LB/TON	38.91016	24.79909	31.85461
PERCENT EXCESS AIR		527.8	527.8	527.8

PLANT: A1BHB(SOOT)

LOCATION: NYC

OPERATOR: ERI

ANT: A2BPB

LOCATION: NYC

OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		05-04-73	05-04-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	30.36	30.36	
AVG ORIFICE PRES DROP	IN.H2O	1.094	1.150	
VOL DRY GAS-METER COND	DCF	35.37	34.56	
AVG GAS METER TEMP	DEG.F	75.9	80.4	
VOL DRY GAS-STD COND	DSCF	35.57	34.49	
TOTAL H2O COLLECTED	ML	46.0	40.0	
VOL H2O VAPOR-STD COND	SCF	2.18	1.90	
PERCENT MOISTURE BY VOL		5.8	5.2	
MOLE FRACTION DRY GAS		0.942	0.948	
PERCENT CO2 BY VOL, DRY		5.2	5.2	
PERCENT O2 BY VOL, DRY		11.8	11.8	
PERCENT CO BY VOL, DRY		0.1	0.1	
PERCENT N2 BY VOL, DRY		82.9	82.9	
MOLECULAR WT-DRY STK GAS		29.30	29.30	
MOLECULAR WT-STK GAS		28.65	28.71	
AVG STACK TEMPERATURE	DEG.F	250.0	250.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.36	30.36	
AVG STACK GAS VELOCITY	FPS	38.212	37.820	38.016
STK FLOWRATE, DRY,STD CN	DSCFM	1636.	1629.	1632.
ACTUAL STACK FLOWRATE	ACFM	2293.	2269.	2281.
PERCENT ISOKINETIC		106.3	103.5	104.9
PARTICULATE WT-PARTIAL	MG	136.10	145.60	140.85
PARTICULATE WT-TOTAL	MG	196.60	183.10	189.85
PERC IMPINGER CATCH		30.8	20.5	25.6
PART. LOAD-PTL,STD CN	GR/DSCF	0.05892	0.06502	0.06197
PART. LOAD-TTL,STD CN	GR/DSCF	0.08511	0.08177	0.08344
PART. LOAD-PTL,STD CN @ 12% CO2	GR/DSCF	0.13596	0.15005	0.14301
PART. LOAD-TTL,STD CN @ 12% CO2	GR/DSCF	0.19640	0.18869	0.19255
PART. LOAD-PTL,STK CN	GR/ACF	0.04202	0.04665	0.04433
PART. LOAD-TTL,STK CN	GR/ACF	0.06070	0.05866	0.05968
PARTIC EMIS-PARTIAL	LB/HR	0.83	0.91	0.87
PARTIC EMIS-TOTAL	LB/HR	1.19	1.14	1.17
PART EMIS/WT PRD FD PTL	LB/TON	25.73819	28.28104	27.00961
PART EMIS/WT PRD FD TTL	LB/TON	37.17947	35.56494	36.37221
PERCENT EXCESS AIR		115.9	115.9	115.9

PLANT: A3BHB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		06-23-73	06-23-73	
STACK AREA	FT2	58.800	58.800	
NET TIME OF RUN	MIN	64.0	64.0	
BAROMETRIC PRESSURE	IN.HG	29.58	29.58	
AVG ORIFICE PRES DROP	IN.H2O	2.300	2.980	
VOL DRY GAS-METER COND	DCF	50.25	60.13	
AVG GAS METER TEMP	DEG.F	100.2	106.2	
VOL DRY GAS-STD COND	DSCF	47.26	56.04	
TOTAL H2O COLLECTED	ML	24.0	31.1	
VOL H2O VAPOR-STD COND	SCF	1.14	1.47	
PERCENT MOISTURE BY VOL		2.4	2.6	
MOLE FRACTION DRY GAS		0.976	0.974	
PERCENT CO2 BY VOL, DRY		0.7	0.7	
PERCENT O2 BY VOL, DRY		19.8	19.8	
PERCENT CO BY VOL, DRY		0.1	0.1	
PERCENT N2 BY VOL, DRY		79.4	79.4	
MOLECULAR WT-DRY STK GAS		28.90	28.90	
MOLECULAR WT-STK GAS		28.65	28.62	
AVG STACK TEMPERATURE	DEG.F	147.0	147.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.58	29.58	
AVG STACK GAS VELOCITY	FPS	5.079	5.736	5.407
STK FLOWRATE, DRY,STD CN	DSCFM	15102.	17016.	16059.
ACTUAL STACK FLOWRATE	ACFM	17920.	20235.	19077.
PERCENT ISOKINETIC		93.7	98.6	96.2
PARTICULATE WT-PARTIAL	MG	15.40	14.20	14.80
PARTICULATE WT-TOTAL	MG	44.60	51.90	48.25
PERC IMPINGER CATCH		65.5	72.6	69.1
PART. LOAD-PTL,STD CN	GR/DSCF	0.00502	0.00390	0.00446
PART. LOAD-TTL,STD CN	GR/DSCF	0.01453	0.01426	0.01440
PART. LOAD-PTL,STD CN @ 12% CO2	GR/DSCF	0.08602	0.06690	0.07646
PART. LOAD-TTL,STD CN @ 12% CO2	GR/DSCF	0.24913	0.24450	0.24682
PART. LOAD-PTL,STK CN	GR/ACF	0.00423	0.00328	0.00375
PART. LOAD-TTL,STK CN	GR/ACF	0.01224	0.01199	0.01211
PARTIC EMIS-PARTIAL	LB/HR	0.65	0.57	0.61
PARTIC EMIS-TOTAL	LB/HR	1.88	2.08	1.98
PART EMIS/WT PRD FD PTL	LB/TON	8.17051	7.15919	7.66485
PART EMIS/WT PRD FD TTL	LB/TON	23.66264	26.16632	24.91447
PERCENT EXCESS AIR		1630.1	1630.1	1630.1

PLANT: A3BHB(SOOT)  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	3	4	AVERAGE
DATE OF RUN		06-23-73	06-23-73	
STACK AREA	FT2	58.800	58.800	
NET TIME OF RUN	MIN	32.0	32.0	
BAROMETRIC PRESSURE	IN.HG	29.56	29.56	
AVG ORIFICE PRES DROP	IN.H2O	2.180	2.610	
VOL DRY GAS-METER COND	DCF	24.90	27.91	
AVG GAS METER TEMP	DEG.F	102.8	107.1	
VOL DRY GAS-STD COND	DSCF	23.29	25.94	
TOTAL H2O COLLECTED	ML	19.0	18.9	
VOL H2O VAPOR-STD COND	SCF	0.90	0.90	
PERCENT MOISTURE BY VOL		3.7	3.3	
MOLE FRACTION DRY GAS		0.963	0.967	
PERCENT CO2 BY VOL, DRY		0.5	0.5	
PERCENT O2 BY VOL, DRY		20.3	20.3	
PERCENT CO BY VOL, DRY		0.0	0.0	
PERCENT N2 BY VOL, DRY		79.2	79.2	
MOLECULAR WT-DRY STK GAS		28.89	28.89	
MOLECULAR WT-STK GAS		28.49	28.53	
AVG STACK TEMPERATURE	DEG.F	142.0	142.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.56	29.56	
AVG STACK GAS VELOCITY	FPS	4.960	5.542	5.251
STK FLOWRATE, DRY, STD CN	DSCFM	14651.	16435.	15543.
ACTUAL STACK FLOWRATE	ACFM	17499.	19552.	18526.
PERCENT ISOKINETIC		95.2	94.5	94.9
PARTICULATE WT-PARTIAL	MG	22.80	31.30	27.05
PARTICULATE WT-TOTAL	MG	59.70	56.40	58.05
PERC IMPINGER CATCH		61.8	44.5	53.2
PART. LOAD-PTL,STD CN	GR/DSCF	0.01508	0.01859	0.01683
PART. LOAD-TTL,STD CN	GR/DSCF	0.03948	0.03349	0.03649
PART. LOAD-PTL,STD CN @ 12% CO2	GR/DSCF	0.36188	0.44604	0.40396
PART. LOAD-TTL,STD CN @ 12% CO2	GR/DSCF	0.94755	0.80373	0.87564
PART. LOAD-PTL,STK CN	GR/ACF	0.01262	0.01561	0.01412
PART. LOAD-TTL,STK CN	GR/ACF	0.03304	0.02813	0.03059
PARTIC EMIS-PARTIAL	LB/HR	1.89	2.62	2.26
PARTIC EMIS-TOTAL	LB/HR	4.96	4.72	4.84
PART EMIS/WT PRD FD PTL	LB/TON	29.91415	41.36099	35.63757
PART EMIS/WT PRD FD TTL	LB/TON	78.32790	74.52907	76.42847
PERCENT EXCESS AIR		3334.5	3334.5	3334.5

PLANT: A4MPB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		04-14-73	04-14-73	
STACK AREA	FT2	8.125	8.125	
NET TIME OF RUN	MIN	63.0	63.0	
BAROMETRIC PRESSURE	IN.HG	30.36	30.36	
Avg ORIFICE PRES DROP	IN.H2O	0.891	0.832	
VOL DRY GAS-METER COND	DCF	31.69	31.31	
Avg GAS METER TEMP	DEG.F	64.7	78.9	
VOL DRY GAS-STD COND	DSCF	32.55	31.31	
TOTAL H2O COLLECTED	ML	19.8	15.0	
VOL H2O VAPOR-STD COND	SCF	0.94	0.71	
PERCENT MOISTURE BY VOL		2.8	2.2	
MOLE FRACTION DRY GAS		0.972	0.978	
PERCENT CO2 BY VOL, DRY		3.0	3.0	
PERCENT O2 BY VOL, DRY		14.5	14.5	
PERCENT CO BY VOL, DRY		0.4	0.4	
PERCENT N2 BY VOL, DRY		82.1	82.1	
MOLECULAR WT-DRY STK GAS		29.06	29.06	
MOLECULAR WT-STK GAS		28.75	28.81	
Avg STACK TEMPERATURE	DEG.F	271.1	281.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.36	30.36	
AVG STACK GAS VELOCITY	FPS	14.812	14.376	14.594
STK FLOWRATE, DRY,STD CN	DSCFM	5162.	4972.	5067.
ACTUAL STACK FLOWRATE	ACFM	7221.	7008.	7115.
PERCENT ISOKINETIC		106.1	105.9	106.0
PARTICULATE WT-PARTIAL	MG	70.50	58.40	64.45
PARTICULATE WT-TOTAL	MG	100.30	101.80	101.05
PERC IMPINGER CATCH		29.7	42.6	36.2
PART. LOAD-PTL,STD CN	GR/DSCF	0.03336	0.02873	0.03104
PART. LOAD-TTL,STD CN	GR/DSCF	0.04745	0.05007	0.04876
PART. LOAD-PTL,STD CN @ 12% CO2		0.13342	0.11491	0.12416
PART. LOAD-TTL,STD CN @ 12% CO2		0.18982	0.20030	0.19506
PART. LOAD-PTL,STK CN	GR/ACF	0.02383	0.02037	0.02210
PART. LOAD-TTL,STK CN	GR/ACF	0.03390	0.03551	0.03470
PARTIC EMIS-PARTIAL	LB/HR	1.48	1.22	1.35
PARTIC EMIS-TOTAL	LB/HR	2.10	2.13	2.12
PART EMIS/WT PRD FD PTL	LB/TON	46.99879	37.10072	42.04974
part emis/wt prd fd ttl	lb/ton	66.86502	64.67218	65.76860
percent excess air		193.9	193.9	193.9

PLANT: A5MPB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	3	AVERAGE
DATE OF RUN		03-21-73	03-21-73	03-21-73	
STACK AREA	FT2	1.000	1.000	1.000	
NET TIME OF RUN	MIN	60.0	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	30.06	30.06	30.06	
AVG ORIFICE PRES DROP	IN.H2O	2.830	2.513	2.587	
VOL DRY GAS-METER COND	DCF	52.24	51.03	49.97	
AVG GAS METER TEMP	DEG.F	60.7	65.5	59.2	
VOL DRY GAS-STD COND	DSCF	53.78	52.01	51.57	
TOTAL H2O COLLECTED	ML	23.8	39.1	18.3	
VOL H2O VAPOR-STD COND	SCF	1.13	1.85	0.87	
PERCENT MOISTURE BY VOL		2.1	3.4	1.7	
MOLE FRACTION DRY GAS		0.979	0.966	0.983	
PERCENT CO2 BY VOL, DRY		5.3	5.3	5.3	
PERCENT O2 BY VOL, DRY		13.3	13.3	13.3	
PERCENT CO BY VOL, DRY		0.3	0.3	0.3	
PERCENT N2 BY VOL, DRY		81.1	81.1	81.1	
MOLECULAR WT-DRY STK GAS		29.38	29.38	29.38	
MOLECULAR WT-STK GAS		29.15	28.99	29.19	
AVG STACK TEMPERATURE	DEG.F	211.0	220.0	218.0	
NET SAMPLING POINTS		1	1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.06	30.06	30.06	
AVG STACK GAS VELOCITY	FPS	24.287	23.806	23.154	23.749
STK FLOWRATE, DRY,STD CN	DSCFM	1132.	1080.	1073.	1095.
ACTUAL STACK FLOWRATE	ACFM	1457.	1428.	1389.	1425.
PERCENT ISOKINETIC		103.2	104.7	104.5	104.1
PARTICULATE WT-PARTIAL	MG	188.10	92.10	72.40	117.53
PARTICULATE WT-TOTAL	MG	222.40	133.80	105.90	154.03
PERC IMPINGER CATCH		15.4	31.2	31.6	26.1
PART. LOAD-PTL,STD CN	GR/DSCF	0.05386	0.02727	0.02162	0.03425
PART. LOAD-TTL,STD CN	GR/DSCF	0.06368	0.03962	0.03163	0.04498
PART. LOAD-PTL,STD CN @ 12% CO2		0.12195	0.06175	0.04896	0.07755
PART. LOAD-TTL,STD CN @ 12% CO2		0.14419	0.08971	0.07161	0.10183
PART. LOAD-PTL,STK CN	GR/ACF	0.04183	0.02060	0.01669	0.02637
PART. LOAD-TTL,STK CN	GR/ACF	0.04946	0.02993	0.02441	0.03460
PARTIC EMIS-PARTIAL	LB/HR	0.52	0.25	0.20	0.32
PARTIC EMIS-TOTAL	LB/HR	0.62	0.37	0.29	0.43
PART EMIS/WT PRD FD PTL	LB/10 <sup>3</sup> GAL	49.31856	23.81252	18.75703	30.62935
PART EMIS/WT PRD FD TTL	LB/10 <sup>3</sup> GAL	58.31174	34.59407	27.43605	40.11394
PERCENT EXCESS AIR		159.2	159.2	159.2	159.2

PLANT: A6BPB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		05-07-73	05-07-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	30.72	30.72	
AVG ORIFICE PRES DROP	IN.H2O	1.180	1.150	
VOL DRY GAS-METER COND	DCF	34.69	36.61	
AVG GAS METER TEMP	DEG.F	84.4	86.1	
VOL DRY GAS-STD COND	DSCF	34.76	36.57	
TOTAL H2O COLLECTED	ML	44.7	34.0	
VOL H2O VAPOR-STD COND	SCF	2.12	1.61	
PERCENT MOISTURE BY VOL		5.7	4.2	
MOLE FRACTION DRY GAS		0.943	0.958	
PERCENT CO2 BY VOL, DRY		4.8	4.8	
PERCENT O2 BY VOL, DRY		12.8	12.8	
PERCENT CO BY VOL, DRY		0.0	0.0	
PERCENT N2 BY VOL, DRY		82.4	82.4	
MOLECULAR WT-DRY STK GAS		29.28	29.28	
MOLECULAR WT-STK GAS		28.63	28.80	
AVG STACK TEMPERATURE	DEG.F	283.0	283.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.72	30.72	
AVG STACK GAS VELOCITY	FPS	39.686	37.613	38.650
STK FLOWRATE, DRY, STD CN	DSCFM	1643.	1583.	1613.
ACTUAL STACK FLOWRATE	ACFM	2381.	2257.	2319.
PERCENT ISOKINETIC		103.4	113.0	108.2
PARTICULATE WT-PARTIAL	MG	52.70	70.40	61.55
PARTICULATE WT-TOTAL	MG	95.60	145.30	120.45
PERC IMPINGER CATCH		44.9	51.5	48.2
PART. LOAD-PTL, STD CN	GR/DSCF	0.02335	0.02965	0.02650
PART. LOAD-TTL, STD CN	GR/DSCF	0.04235	0.06119	0.05177
PART. LOAD-PTL, STD CN @ 12% CO2		0.05837	0.07411	0.06624
PART. LOAD-TTL, STD CN @ 12% CO2		0.10588	0.15297	0.12942
PART. LOAD-PTL, STK CN	GR/ACF	0.01610	0.02078	0.01844
PART. LOAD-TTL, STK CN	GR/ACF	0.02921	0.04289	0.03605
PARTIC EMIS-PARTIAL	LB/HR	0.33	0.40	0.37
PARTIC EMIS-TOTAL	LB/HR	0.60	0.83	0.71
PART EMIS/WT PRD FD PTL	LB/TON	11.74580	14.36385	13.05482
PART EMIS/WT PRD FD TTL	LB/TON	21.30736	29.64583	25.47659
PERCENT EXCESS AIR		143.0	143.0	143.0

PLANT: A7MPB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		04-13-73	04-13-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	29.98	29.98	
AVG ORIFICE PRES DROP	IN.H2O	0.950	1.240	
VOL DRY GAS-METER COND	DCF	33.96	32.70	
AVG GAS METER TEMP	DEG.F	85.0	86.7	
VOL DRY GAS-STD COND	DSCF	33.16	31.85	
TOTAL H2O COLLECTED	ML	40.0	42.0	
VOL H2O VAPOR-STD COND	SCF	1.90	1.99	
PERCENT MOISTURE BY VOL		5.4	5.9	
MOLE FRACTION DRY GAS		0.946	0.941	
PERCENT CO2 BY VOL, DRY		6.0	6.0	
PERCENT O2 BY VOL, DRY		12.9	12.9	
PERCENT CO BY VOL, DRY		0.1	0.1	
PERCENT N2 BY VOL, DRY		81.0	81.0	
MOLECULAR WT-DRY STK GAS		29.48	29.48	
MOLECULAR WT-STK GAS		28.86	28.80	
AVG STACK TEMPERATURE	DEG.F	232.0	234.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.98	29.98	
AVG STACK GAS VELOCITY	FPS	34.753	38.645	36.699
STK FLOWRATE, DRY, STD CN	DSCFM	1513.	1670.	1591.
ACTUAL STACK FLOWRATE	ACFM	2085.	2319.	2202.
PERCENT ISOKINETIC		107.2	93.3	100.2
PARTICULATE WT-PARTIAL	MG	44.70	43.90	44.30
PARTICULATE WT-TOTAL	MG	89.50	89.10	89.30
PERC IMPINGER CATCH		50.1	50.7	50.4
PART. LOAD-PTL,STD CN	GR/DSCF	0.02076	0.02123	0.02099
PART. LOAD-TTL,STD CN	GR/DSCF	0.04156	0.04308	0.04232
PART. LOAD-PTL,STD CN @ 12% CO2		0.04151	0.04246	0.04199
PART. LOAD-TTL,STD CN @ 12% CO2		0.08312	0.08617	0.08465
PART. LOAD-PTL,STK CN	GR/ACF	0.01506	0.01528	0.01517
PART. LOAD-TTL,STK CN	GR/ACF	0.03015	0.03100	0.03058
PARTIC EMIS-PARTIAL	LB/HR	0.27	0.30	0.29
PARTIC EMIS-TOTAL	LB/HR	0.54	0.62	0.58
PART EMIS/WT PRD FD PTL	LB/TON	8.82804	9.96019	9.39411
PART EMIS/WT PRD FD TTL	LB/TON	17.67583	20.21533	18.94557
PERCENT EXCESS AIR		150.6	150.6	150.6

PLANT: A8MPB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		04-30-73	04-30-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	64.0	64.0	
BAROMETRIC PRESSURE	IN.HG	30.50	30.50	
AVG ORIFICE PRES DROP	IN.H2O	0.933	0.982	
VOL DRY GAS-METER COND	DCF	34.67	33.60	
AVG GAS METER TEMP	DEG.F	87.0	87.4	
VOL DRY GAS-STD COND	DSCF	34.31	33.24	
TOTAL H2O COLLECTED	ML	31.6	34.4	
VOL H2O VAPOR-STD COND	SCF	1.50	1.63	
PERCENT MOISTURE BY VOL		4.2	4.7	
MOLE FRACTION DRY GAS		0.958	0.953	
PERCENT CO2 BY VOL, DRY		5.7	5.8	
PERCENT O2 BY VOL, DRY		12.7	12.5	
PERCENT CO BY VOL, DRY		0.0	0.0	
PERCENT N2 BY VOL, DRY		81.6	81.7	
MOLECULAR WT-DRY STK GAS		29.42	29.43	
MOLECULAR WT-STK GAS		28.94	28.89	
AVG STACK TEMPERATURE	DEG.F	269.0	269.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.50	30.50	
AVG STACK GAS VELOCITY	FPS	34.357	34.038	34.197
STK FLOWRATE, DRY, STD CN	DSCFM	1464.	1442.	1453.
ACTUAL STACK FLOWRATE	ACFM	2061.	2042.	2052.
PERCENT ISOKINETIC		107.5	105.6	106.6
PARTICULATE WT-PARTIAL	MG	178.80	55.20	117.00
PARTICULATE WT-TOTAL	MG	216.90	114.30	165.60
PERC IMPINGER CATCH		17.6	51.7	34.6
PART. LOAD-PTL,STD CN	GR/DSCF	0.08026	0.02557	0.05291
PART. LOAD-TTL,STD CN	GR/DSCF	0.09736	0.05295	0.07516
PART. LOAD-PTL,STD CN @ 12% CO2		0.16896	0.05291	0.11094
PART. LOAD-TTL,STD CN @ 12% CO2		0.20496	0.10956	0.15726
PART. LOAD-PTL,STK CN	GR/ACF	0.05695	0.01805	0.03750
PART. LOAD-TTL,STK CN	GR/ACF	0.06908	0.03738	0.05323
PARTIC EMIS-PARTIAL	LB/HR	1.01	0.32	0.66
PARTIC EMIS-TOTAL	LB/HR	1.22	0.65	0.94
PART EMIS/WT PRD FD PTL	LB/TON	17.91402	5.62628	11.77015
PART EMIS/WT PRD FD TTL	LB/TON	21.73126	11.65006	16.69066
PERCENT EXCESS AIR		143.6	137.8	140.7

PLANT: A9MPB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		05-01-73	05-01-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	30.68	30.68	
AVG ORIFICE PRES DROP	IN.H2O	3.460	3.322	
VOL DRY GAS-METER COND	DCF	60.36	58.01	
AVG GAS METER TEMP	DEG.F	95.9	102.6	
VOL DRY GAS-STD COND	DSCF	59.49	56.48	
TOTAL H2O COLLECTED	ML	52.7	59.7	
VOL H2O VAPOR-STD COND	SCF	2.50	2.83	
PERCENT MOISTURE BY VOL		4.0	4.8	
MOLE FRACTION DRY GAS		0.960	0.952	
PERCENT CO2 BY VOL, DRY		4.6	4.5	
PERCENT O2 BY VOL, DRY		14.5	14.5	
PERCENT CO BY VOL, DRY		0.1	0.2	
PERCENT N2 BY VOL, DRY		80.8	80.8	
MOLECULAR WT-DRY STK GAS		29.32	29.30	
MOLECULAR WT-STK GAS		28.86	28.76	
AVG STACK TEMPERATURE	DEG.F	240.0	240.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.68	30.68	
AVG STACK GAS VELOCITY	FPS	29.958	27.006	28.482
STK FLOWRATE, DRY, STD CN	DSCFM	1339.	1198.	1268.
ACTUAL STACK FLOWRATE	ACFM	1797.	1620.	1709.
PERCENT ISOKINETIC		96.6	102.5	99.5
PARTICULATE WT-PARTIAL	MG	35.50	119.60	77.55
PARTICULATE WT-TOTAL	MG	79.90	180.20	130.05
PERC IMPINGER CATCH		55.6	33.6	44.6
PART. LOAD-PTL,STD CN	GR/DSCF	0.00919	0.03261	0.02090
PART. LOAD-TTL,STD CN	GR/DSCF	0.02068	0.04914	0.03491
PART. LOAD-PTL,STD CN @ 12% CO2		0.02397	0.08697	0.05547
PART. LOAD-TTL,STD CN @ 12% CO2		0.05396	0.13103	0.09250
PART. LOAD-PTL,STK CN	GR/ACF	0.00684	0.02409	0.01547
PART. LOAD-TTL,STK CN	GR/ACF	0.01540	0.03630	0.02585
PARTIC EMIS-PARTIAL	LB/HR	0.11	0.33	0.22
PARTIC EMIS-TOTAL	LB/HR	0.24	0.50	0.37
PART EMIS/WT PRD FD PTL	LB/TON	2.13087	6.76379	4.44733
PART EMIS/WT PRD FD TTL	LB/TON	4.79596	10.19092	7.49344
PERCENT EXCESS AIR		210.0	207.8	208.9

PLANT: A10BHB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		06-26-73	06-26-73	
STACK AREA	FT2	28.400	28.400	
NET TIME OF RUN	MIN	64.0	62.0	
BAROMETRIC PRESSURE	IN.HG	30.27	30.28	
AVG ORIFICE PRES DROP	IN.H2O	4.040	3.900	
VOL DRY GAS-METER COND	DCF	65.06	61.90	
AVG GAS METER TEMP	DEG.F	106.4	96.7	
VOL DRY GAS-STD COND	DSCF	62.19	60.19	
TOTAL H2O COLLECTED	ML	49.1	47.2	
VOL H2O VAPOR-STD COND	SCF	2.33	2.24	
PERCENT MOISTURE BY VOL		3.6	3.6	
MOLE FRACTION DRY GAS		0.964	0.964	
PERCENT CO2 BY VOL, DRY		1.1	1.1	
PERCENT O2 BY VOL, DRY		19.6	19.6	
PERCENT CO BY VOL, DRY		0.0	0.0	
PERCENT N2 BY VOL, DRY		79.3	79.3	
MOLECULAR WT-DRY STK GAS		28.96	28.96	
MOLECULAR WT-STK GAS		28.56	28.57	
AVG STACK TEMPERATURE	DEG.F	162.0	162.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.27	30.28	
AVG STACK GAS VELOCITY	FPS	6.320	6.191	6.256
STK FLOWRATE, DRY,STD CN	DSCFM	8949.	8769.	8859.
ACTUAL STACK FLOWRATE	ACFM	10770.	10549.	10659.
PERCENT ISOKINETIC		100.5	102.5	101.5
PARTICULATE WT-PARTIAL	MG	115.40	19.90	67.65
PARTICULATE WT-TOTAL	MG	135.00	43.10	89.05
PERC IMPINGER CATCH		14.5	53.8	34.2
PART. LOAD-PTL,STD CN	GR/DSCF	0.02858	0.00509	0.01683
PART. LOAD-TTL,STD CN	GR/DSCF	0.03343	0.01103	0.02223
PART. LOAD-PTL,STD CN @ 12% CO2		0.31173	0.05554	0.18364
PART. LOAD-TTL,STD CN @ 12% CO2		0.36468	0.12030	0.24249
PART. LOAD-PTL,STK CN	GR/ACF	0.02373	0.00423	0.01398
PART. LOAD-TTL,STK CN	GR/ACF	0.02776	0.00916	0.01846
PARTIC EMIS-PARTIAL	LB/HR	2.19	0.38	1.29
PARTIC EMIS-TOTAL	LB/HR	2.56	0.83	1.70
PART EMIS/WT PRD FD PTL	LB/TON	28.99211	5.06206	17.02708
PART EMIS/WT PRD FD TTL	LB/TON	33.91624	10.96357	22.43990
PERCENT EXCESS AIR		1468.0	1468.0	1468.0

PLANT: A10BHB(SOOT)  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	3	4	AVERAGE
DATE OF RUN		06-26-73	06-26-73	
STACK AREA	FT2	28.400	28.400	
NET TIME OF RUN	MIN	40.0	40.0	
BAROMETRIC PRESSURE	IN.HG	30.27	30.28	
AVG ORIFICE PRES DROP	IN.H2O	3.790	3.443	
VOL DRY GAS-METER COND	DCF	38.47	36.62	
AVG GAS METER TEMP	DEG.F	112.3	102.3	
VOL DRY GAS-STD COND	DSCF	36.38	35.21	
TOTAL H2O COLLECTED	ML	27.7	36.9	
VOL H2O VAPOR-STD COND	SCF	1.31	1.75	
PERCENT MOISTURE BY VOL		3.5	4.7	
MOLE FRACTION DRY GAS		0.965	0.953	
PERCENT CO2 BY VOL, DRY		2.2	2.2	
PERCENT O2 BY VOL, DRY		18.2	18.2	
PERCENT CO BY VOL, DRY		0.0	0.0	
PERCENT N2 BY VOL, DRY		79.6	79.6	
MOLECULAR WT-DRY STK GAS		29.08	29.08	
MOLECULAR WT-STK GAS		28.69	28.56	
AVG STACK TEMPERATURE	DEG.F	165.0	174.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.27	30.28	
AVG STACK GAS VELOCITY	FPS	6.109	5.747	5.928
STK FLOWRATE, DRY, STD CN	DSCFM	8619.	7892.	8255.
ACTUAL STACK FLOWRATE	ACFM	10409.	9794.	10101.
PERCENT ISOKINETIC		97.7	103.3	100.5
PARTICULATE WT-PARTIAL	MG	18.90	23.40	21.15
PARTICULATE WT-TOTAL	MG	37.30	48.70	43.00
PERC IMPINGER CATCH		49.3	52.0	50.6
PART. LOAD-PTL,STD CN	GR/DSCF	0.00800	0.01023	0.00912
PART. LOAD-TTL,STD CN	GR/DSCF	0.01579	0.02130	0.01855
PART. LOAD-PTL,STD CN @ 12% CO2		0.04365	0.05582	0.04973
PART. LOAD-TTL,STD CN @ 12% CO2		0.08614	0.11618	0.10116
PART. LOAD-PTL,STK CN	GR/ACF	0.00662	0.00824	0.00743
PART. LOAD-TTL,STK CN	GR/ACF	0.01307	0.01715	0.01511
PARTIC EMIS-PARTIAL	LB/HR	0.59	0.69	0.64
PARTIC EMIS-TOTAL	LB/HR	1.17	1.44	1.30
PART EMIS/WT PRD FD PTL	LB/TON	8.39653	9.83372	9.11512
PART EMIS/WT PRD FD TTL	LB/TON	16.57092	20.46591	18.51842
PERCENT EXCESS AIR		646.7	646.7	646.7

PLANT: B1MPB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		04-11-73	04-11-73	
STACK AREA	FT2	3.140	3.140	
NET TIME OF RUN	MIN	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	29.68	29.68	
AVG ORIFICE PRES DROP	IN.H2O	1.912	1.776	
VOL DRY GAS-METER COND	DCF	43.22	42.09	
AVG GAS METER TEMP	DEG.F	85.8	89.8	
VOL DRY GAS-STD COND	DSCF	41.82	40.42	
TOTAL H2O COLLECTED	ML	25.1	24.4	
VOL H2O VAPOR-STD COND	SCF	1.19	1.15	
PERCENT MOISTURE BY VOL		2.8	2.8	
MOLE FRACTION DRY GAS		0.972	0.972	
PERCENT CO2 BY VOL, DRY		3.7	3.7	
PERCENT O2 BY VOL, DRY		19.0	19.0	
PERCENT CO BY VOL, DRY		0.2	0.2	
PERCENT N2 BY VOL, DRY		77.1	77.1	
MOLECULAR WT-DRY STK GAS		29.35	29.35	
MOLECULAR WT-STK GAS		29.04	29.04	
AVG STACK TEMPERATURE	DEG.F	320.8	320.8	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.68	29.68	
AVG STACK GAS VELOCITY	FPS	13.031	13.955	13.493
STK FLOWRATE, DRY,STD CN	DSCFM	1607.	1721.	1664.
ACTUAL STACK FLOWRATE	ACFM	2455.	2629.	2542.
PERCENT ISOKINETIC		99.9	90.2	95.0
PARTICULATE WT-PARTIAL	MG	85.50	73.10	79.30
PARTICULATE WT-TOTAL	MG	120.80	117.70	119.25
PERC IMPINGER CATCH		29.2	37.9	33.6
PART. LOAD-PTL,STD CN	GR/DSCF	0.03148	0.02785	0.02967
PART. LOAD-TTL,STD CN	GR/DSCF	0.04448	0.04484	0.04466
PART. LOAD-PTL,STD CN @ 12% CO2		0.10211	0.09032	0.09621
PART. LOAD-TTL,STD CN @ 12% CO2		0.14426	0.14543	0.14484
PART. LOAD-PTL,STK CN	GR/ACF	0.02060	0.01822	0.01941
PART. LOAD-TTL,STK CN	GR/ACF	0.02910	0.02933	0.02921
PARTIC EMIS-PARTIAL	LB/HR	0.43	0.41	0.42
PARTIC EMIS-TOTAL	LB/HR	0.61	0.66	0.64
PART EMIS/WT PRD FD PTL	LB/TON	17.00514	16.10760	16.55637
PART EMIS/WT PRD FD TTL	LB/TON	24.02597	25.93523	24.98059
PERCENT EXCESS AIR		1299.5	1299.5	1299.5

PLANT: B2B7B  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		04-10-73	04-10-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	29.42	29.42	
AVG ORIFICE PRES DROP	IN.H2O	0.978	0.848	
VOL DRY GAS-METER COND	DCF	32.87	32.25	
AVG GAS METER TEMP	DEG.F	79.5	87.1	
VOL DRY GAS-STD COND	DSCF	31.82	30.78	
TOTAL H2O COLLECTED	ML	45.2	42.2	
VOL H2O VAPOR-STD COND	SCF	2.14	2.00	
PERCENT MOISTURE BY VOL		6.3	6.1	
MOLE FRACTION DRY GAS		0.937	0.939	
PERCENT CO2 BY VOL, DRY		3.4	3.4	
PERCENT O2 BY VOL, DRY		14.1	14.1	
PERCENT CO BY VOL, DRY		0.0	0.0	
PERCENT N2 BY VOL, DRY		82.5	82.5	
MOLECULAR WT-DRY STK GAS		29.11	29.11	
MOLECULAR WT-STK GAS		28.41	28.43	
AVG STACK TEMPERATURE	DEG.F	234.0	234.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.42	29.42	
AVG STACK GAS VELOCITY	FPS	39.399	34.934	37.166
STK FLOWRATE, DRY,STD CN	DSCFM	1663.	1478.	1570.
ACTUAL STACK FLOWRATE	ACFM	2364.	2096.	2230.
PERCENT ISOKINETIC		93.6	101.8	97.7
PARTICULATE WT-PARTIAL	MG	37.00	72.90	54.95
PARTICULATE WT-TOTAL	MG	77.20	120.60	98.90
PERC IMPINGER CATCH		52.1	39.6	45.8
PART. LOAD-PTL,STD CN	GR/DSCF	0.01791	0.03648	0.02719
PART. LOAD-TTL,STD CN	GR/DSCF	0.03736	0.06034	0.04885
PART. LOAD-PTL,STD CN @ 12% CO2	GR/DSCF	0.06320	0.12874	0.09597
PART. LOAD-TTL,STD CN @ 12% CO2	GR/DSCF	0.13186	0.21298	0.17242
PART. LOAD-PTL,STK CN	GR/ACF	0.01259	0.02570	0.01914
PART. LOAD-TTL,STK CN	GR/ACF	0.02626	0.04252	0.03439
PARTIC EMIS-PARTIAL	LB/HR	0.26	0.46	0.36
PARTIC EMIS-TOTAL	LB/HR	0.53	0.76	0.65
PART EMIS/WT PRD FD PTL	LB/TON	15.10094	27.33606	21.21849
PART EMIS/WT PRD FD TTL	LB/TON	31.50787	45.22263	38.36525
PERCENT EXCESS AIR		183.6	183.6	183.6

PLANT: B3B PB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		04-06-73	04-06-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	29.93	29.93	
AVG ORIFICE PRES DROP	IN.H2O	0.530	0.674	
VOL DRY GAS-METER COND	DCF	23.38	29.02	
AVG GAS METER TEMP	DEG.F	67.1	70.1	
VOL DRY GAS-STD COND	DSCF	23.54	29.07	
TOTAL H2O COLLECTED	ML	35.0	37.0	
VOL H2O VAPOR-STD COND	SCF	1.66	1.75	
PERCENT MOISTURE BY VOL		6.6	5.7	
MOLE FRACTION DRY GAS		0.934	0.943	
PERCENT CO2 BY VOL, DRY		5.0	5.0	
PERCENT O2 BY VOL, DRY		13.2	13.2	
PERCENT CO BY VOL, DRY		0.0	0.0	
PERCENT N2 BY VOL, DRY		81.8	81.8	
MOLECULAR WT-DRY STK GAS		29.33	29.33	
MOLECULAR WT-STK GAS		28.58	28.68	
AVG STACK TEMPERATURE	DEG.F	228.0	228.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.93	29.93	
AVG STACK GAS VELOCITY	FPS	25.127	29.078	27.103
STK FLOWRATE, DRY,STD CN	DSCFM	1085.	1268.	1176.
ACTUAL STACK FLOWRATE	ACFM	1508.	1745.	1626.
PERCENT ISOKINETIC		106.1	112.1	109.1
PARTICULATE WT-PARTIAL	MG	36.00	38.50	37.25
PARTICULATE WT-TOTAL	MG	68.50	61.80	65.15
PERC IMPINGER CATCH		47.4	37.7	42.6
PART. LOAD-PTL,STD CN	GR/DSCF	0.02355	0.02040	0.02197
PART. LOAD-TTL,STD CN	GR/DSCF	0.04481	0.03274	0.03878
PART. LOAD-PTL,STD CN @ 12% CO2		0.05652	0.04895	0.05274
PART. LOAD-TTL,STD CN @ 12% CO2		0.10754	0.07858	0.09306
PART. LOAD-PTL,STK CN	GR/ACF	0.01694	0.01481	0.01588
PART. LOAD-TTL,STK CN	GR/ACF	0.03223	0.02378	0.02800
PARTIC EMIS-PARTIAL	LB/HR	0.22	0.22	0.22
PARTIC EMIS-TOTAL	LB/HR	0.42	0.36	0.39
PART EMIS/WT PRD FD PTL	LB/TON	11.64993	11.78939	11.71966
PART EMIS/WT PRD FD TTL	LB/TON	22.16721	18.92427	20.54573
PERCENT EXCESS AIR		157.2	157.2	157.2

PLANT: B4MPB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		04-03-73	04-03-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	29.70	29.70	
AVG ORIFICE PRES DROP	IN.H2O	5.086	4.779	
VOL DRY GAS-METER COND	DCF	72.70	66.04	
AVG GAS METER TEMP	DEG.F	93.3	93.5	
VOL DRY GAS-STD COND	DSCF	69.98	63.50	
TOTAL H2O COLLECTED	ML	73.0	85.0	
VOL H2O VAPOR-STD COND	SCF	3.46	4.03	
PERCENT MOISTURE BY VOL		4.7	6.0	
MOLE FRACTION DRY GAS		0.953	0.940	
PERCENT CO2 BY VOL, DRY		5.6	5.6	
PERCENT O2 BY VOL, DRY		13.1	13.1	
PERCENT CO BY VOL, DRY		0.1	0.1	
PERCENT N2 BY VOL, DRY		81.2	81.2	
MOLECULAR WT-DRY STK GAS		29.42	29.42	
MOLECULAR WT-STK GAS		28.88	28.74	
AVG STACK TEMPERATURE	DEG.F	304.0	301.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.70	29.70	
AVG STACK GAS VELOCITY	FPS	37.703	35.405	36.554
STK FLOWRATE, DRY,STD CN	DSCFM	1484.	1381.	1432.
ACTUAL STACK FLOWRATE	ACFM	2262.	2124.	2193.
PERCENT ISOKINETIC		102.5	99.9	101.2
PARTICULATE WT-PARTIAL	MG	71.50	96.60	84.05
PARTICULATE WT-TOTAL	MG	109.80	128.40	119.10
PERC IMPINGER CATCH		34.9	24.8	29.8
PART. LOAD-PTL,STD CN	GR/DSCF	0.01573	0.02343	0.01958
PART. LOAD-TTL,STD CN	GR/DSCF	0.02416	0.03114	0.02765
PART. LOAD-PTL,STD CN @ 12% CO2	GR/DSCF	0.03372	0.05020	0.04196
PART. LOAD-TTL,STD CN @ 12% CO2	GR/DSCF	0.05178	0.06673	0.05925
PART. LOAD-PTL,STK CN	GR/ACF	0.01032	0.01522	0.01277
PART. LOAD-TTL,STK CN	GR/ACF	0.01584	0.02023	0.01804
PARTIC EMIS-PARTIAL	LB/HR	0.20	0.28	0.24
PARTIC EMIS-TOTAL	LB/HR	0.31	0.37	0.34
PART EMIS/WT PRD FD PTL	LB/10 <sup>3</sup> GAL	6.99820	9.69434	8.34627
PART EMIS/WT PRD FD TTL	LB/10 <sup>3</sup> GAL	10.74688	12.88564	11.81626
PERCENT EXCESS AIR		155.6	155.6	155.6

PLANT: B4MPB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		04-03-73	04-03-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	29.70	29.70	
AVG ORIFICE PRES DROP	IN.H2O	5.086	4.779	
VOL DRY GAS-METER COND	DCF	72.70	66.04	
AVG GAS METER TEMP	DEG.F	93.3	93.5	
VOL DRY GAS-STD COND	DSCF	69.98	63.50	
TOTAL H2O COLLECTED	ML	73.0	85.0	
VOL H2O VAPOR-STD COND	SCF	3.46	4.03	
PERCENT MOISTURE BY VOL		4.7	6.0	
MOLE FRACTION DRY GAS		0.953	0.940	
PERCENT CO2 BY VOL, DRY		5.6	5.6	
PERCENT O2 BY VOL, DRY		13.1	13.1	
PERCENT CO BY VOL, DRY		0.1	0.1	
PERCENT N2 BY VOL, DRY		81.2	81.2	
MOLECULAR WT-DRY STK GAS		29.42	29.42	
MOLECULAR WT-STK GAS		28.88	28.74	
AVG STACK TEMPERATURE	DEG.F	304.0	301.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.70	29.70	
AVG STACK GAS VELOCITY	FPS	37.703	35.405	36.554
STK FLOWRATE, DRY, STD CN	DSCFM	1484.	1381.	1432.
ACTUAL STACK FLOWRATE	ACFM	2262.	2124.	2193.
PERCENT ISOKINETIC		102.5	99.9	101.2
PARTICULATE WT-PARTIAL	MG	71.50	96.60	84.05
PARTICULATE WT-TOTAL	MG	109.80	128.40	119.10
PERC IMPINGER CATCH		34.9	24.8	29.8
PART. LOAD-PTL,STD CN	GR/DSCF	0.01573	0.02343	0.01958
PART. LOAD-TTL,STD CN	GR/DSCF	0.02416	0.03114	0.02765
PART. LOAD-PTL,STD CN @ 12% CO2		0.03372	0.05020	0.04196
PART. LOAD-TTL,STD CN @ 12% CO2		0.05178	0.06673	0.05925
PART. LOAD-PTL,STK CN	GR/ACF	0.01032	0.01522	0.01277
PART. LOAD-TTL,STK CN	GR/ACF	0.01584	0.02023	0.01804
PARTIC EMIS-PARTIAL	LB/HR	0.20	0.28	0.24
PARTIC EMIS-TOTAL	LB/HR	0.31	0.37	0.34
PART EMIS/WT PRD FD PTL	LB/TON	6.99820	9.69434	8.34627
PART EMIS/WT PRD FD TTL	LB/TON	10.74688	12.88564	11.81626
PERCENT EXCESS AIR		155.6	155.6	155.6

PLANT: B5 BPB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		05-12-73	05-12-73	
STACK AREA	FT2	2.780	2.780	
NET TIME OF RUN	MIN	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	30.38	30.38	
AVG ORIFICE PRES DROP	IN.H2O	1.210	1.280	
VOL DRY GAS-METER COND	DCE	34.17	35.56	
AVG GAS METER TEMP	DEG.F	82.5	86.9	
VOL DRY GAS-STD COND	DSCF	33.99	35.09	
TOTAL H2O COLLECTED	ML	52.0	50.8	
VOL H2O VAPOR-STD COND	SCF	2.46	2.41	
PERCENT MOISTURE BY VOL		6.8	6.4	
MOLE FRACTION DRY GAS		0.932	0.936	
PERCENT CO2 BY VOL, DRY		7.0	7.0	
PERCENT O2 BY VOL, DRY		10.8	10.8	
PERCENT CO BY VOL, DRY		0.0	0.0	
PERCENT N2 BY VOL, DRY		82.2	82.2	
MOLECULAR WT-DRY STK GAS		29.55	29.55	
MOLECULAR WT-STK GAS		28.77	28.81	
AVG STACK TEMPERATURE	DEG.F	293.0	295.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.38	30.38	
AVG STACK GAS VELOCITY	FPS	9.779	10.499	10.139
STK FLOWRATE, DRY,STD CN	DSCFM	1087.	1168.	1127.
ACTUAL STACK FLOWRATE	ACFM	1631.	1751.	1691.
PERCENT ISOKINETIC		106.3	102.1	104.2
PARTICULATE WT-PARTIAL	MG	74.40	233.40	153.90
PARTICULATE WT-TOTAL	MG	117.10	322.50	219.80
PERC IMPINGER CATCH		36.5	27.6	32.0
PART. LOAD-PTL,STD CN	GR/DSCF	0.03371	0.10244	0.06808
PART. LOAD-TTL,STD CN	GR/DSCF	0.05306	0.14155	0.09730
PART. LOAD-PTL,STD CN @ 12% CO2		0.05779	0.17561	0.11670
PART. LOAD-TTL,STD CN @ 12% CO2		0.09096	0.24265	0.16680
PART. LOAD-PTL,STK CN	GR/ACF	0.02245	0.06827	0.04536
PART. LOAD-TTL,STK CN	GR/ACF	0.03533	0.09434	0.06483
PARTIC EMIS-PARTIAL	LB/HR	0.31	1.03	0.67
PARTIC EMIS-TOTAL	LB/HR	0.49	1.42	0.96
PART EMIS/WT PRD FD PTL	LB/TON	7.98955	26.09265	17.04109
PART EMIS/WT PRD FD TTL	LB/TON	12.57496	36.05347	24.31421
PERCENT EXCESS AIR		99.1	99.1	99.1

PLANT: CIBHB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		06-27-73	06-27-73	
STACK AREA	FT2	49.000	49.000	
NET TIME OF RUN	MIN	60.0	64.0	
BAROMETRIC PRESSURE	IN.HG	29.97	29.97	
AVG ORIFICE PRES DROP	IN.H2O	6.137	7.687	
VOL DRY GAS-METER COND	DCF	81.59	70.10	
AVG GAS METER TEMP	DEG.F	92.6	81.1	
VOL DRY GAS-STD COND	DSCF	79.54	70.06	
TOTAL H2O COLLECTED	ML	61.3	61.3	
VOL H2O VAPOR-STD COND	SCF	2.91	2.91	
PERCENT MOISTURE BY VOL		3.5	4.0	
MOLE FRACTION DRY GAS		0.965	0.960	
PERCENT CO2 BY VOL, DRY		1.4	1.4	
PERCENT O2 BY VOL, DRY		19.7	19.7	
PERCENT CO BY VOL, DRY		0.0	0.0	
PERCENT N2 BY VOL, DRY		78.9	78.9	
MOLECULAR WT-DRY STK GAS		29.01	29.01	
MOLECULAR WT-STK GAS		28.62	28.57	
AVG STACK TEMPERATURE	DEG.F	158.0	180.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.97	29.97	
AVG STACK GAS VELOCITY	FPS	8.229	7.436	7.832
STK FLOWRATE, DRY,STD CN	DSCFM	20045.	17409.	18727.
ACTUAL STACK FLOWRATE	ACFM	24192.	21863.	23027.
PERCENT ISOKINETIC		105.6	100.4	103.0
PARTICULATE WT-PARTIAL	MG	21.80	8.20	15.00
PARTICULATE WT-TOTAL	MG	56.80	59.30	58.05
PERC IMPINGER CATCH		61.6	86.2	73.9
PART. LOAD-PTL,STD CN	GR/DSCF	0.00422	0.00180	0.00301
PART. LOAD-TTL,STD CN	GR/DSCF	0.01100	0.01304	0.01202
PART. LOAD-PTL,STD CN @ 12% CO2		0.03618	0.01545	0.02581
PART. LOAD-TTL,STD CN @ 12% CO2		0.09426	0.11173	0.10300
PART. LOAD-PTL,STK CN	GR/ACF	0.00350	0.00143	0.00246
PART. LOAD-TTL,STK CN	GR/ACF	0.00911	0.01037	0.00974
PARTIC EMIS-PARTIAL	LB/HR	0.73	0.27	0.50
PARTIC EMIS-TOTAL	LB/HR	1.89	1.95	1.92
PART EMIS/WT PRD FD PTL	LB/TON	7.39974	2.74473	5.07223
PART EMIS/WT PRD FD TTL	LB/TON	19.28004	19.84904	19.56454
PERCENT EXCESS AIR		1744.0	1744.0	1744.0

PLANT: CIBHB(SOOT)  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	3	4	AVERAGE
DATE OF RUN		06-27-73	06-27-73	
STACK AREA	FT2	49.000	49.000	
NET TIME OF RUN	MIN	64.0	64.0	
BAROMETRIC PRESSURE	IN.HG	29.94	29.94	
AVG ORIFICE PRES DROP	IN.H2O	5.460	6.440	
VOL DRY GAS-METER COND	DCF	76.59	79.97	
AVG GAS METER TEMP	DEG.F	92.0	82.5	
VOL DRY GAS-STD COND	DSCF	74.56	79.40	
TOTAL H2O COLLECTED	ML	53.7	50.1	
VOL H2O VAPOR-STD COND	SCF	2.55	2.37	
PERCENT MOISTURE BY VOL		3.3	2.9	
MOLE FRACTION DRY GAS		0.967	0.971	
PERCENT CO2 BY VOL, DRY		1.7	1.7	
PERCENT O2 BY VOL, DRY		18.5	18.5	
PERCENT CO BY VOL, DRY		0.1	0.1	
PERCENT N2 BY VOL, DRY		79.7	79.7	
MOLECULAR WT-DRY STK GAS		29.01	29.01	
MOLECULAR WT-STK GAS		28.65	28.69	
AVG STACK TEMPERATURE	DEG.F	150.0	150.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.94	29.94	
AVG STACK GAS VELOCITY	FPS	7.735	8.267	8.001
STK FLOWRATE, DRY, STD CN	DSCFM	19116.	20514.	19815.
ACTUAL STACK FLOWRATE	ACFM	22742.	24306.	23524.
PERCENT ISOKINETIC		97.3	96.6	97.0
PARTICULATE WT-PARTIAL	MG	21.80	27.30	24.55
PARTICULATE WT-TOTAL	MG	64.00	66.00	65.00
PERC IMPINGER CATCH		65.9	58.6	62.3
PART. LOAD-PTL,STD CN	GR/DSCF	0.00450	0.00529	0.00490
PART. LOAD-TTL,STD CN	GR/DSCF	0.01322	0.01280	0.01301
PART. LOAD-PTL,STD CN @ 12% CO2	GR/DSCF	0.03179	0.03738	0.03458
PART. LOAD-TTL,STD CN @ 12% CO2	GR/DSCF	0.09331	0.09036	0.09184
PART. LOAD-PTL,STK CN	GR/ACF	0.00378	0.00447	0.00412
PART. LOAD-TTL,STK CN	GR/ACF	0.01111	0.01080	0.01095
PARTIC EMIS-PARTIAL	LB/HR	0.74	0.93	0.83
PARTIC EMIS-TOTAL	LB/HR	2.17	2.25	2.21
PART EMIS/WT PRD FD PTL	LB/TON	7.41506	9.35736	8.38621
PART EMIS/WT PRD FD TTL	LB/TON	21.76898	22.62215	22.19556
PERCENT EXCESS AIR		712.1	712.1	712.1

PLANT: D1MPB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		03-27-73	03-27-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	29.86	29.86	
AVG ORIFICE PRES DROP	IN.H2O	2.100	2.158	
VOL DRY GAS-METER COND	DCF	48.59	48.16	
AVG GAS METER TEMP	DEG.F	83.3	84.7	
VOL DRY GAS-STD COND	DSCF	47.53	47.00	
TOTAL H2O COLLECTED	ML	81.0	79.0	
VOL H2O VAPOR-STD COND	SCF	3.84	3.74	
PERCENT MOISTURE BY VOL		7.5	7.4	
MOLE FRACTION DRY GAS		0.925	0.926	
PERCENT CO2 BY VOL, DRY		7.0	7.0	
PERCENT O2 BY VOL, DRY		10.7	10.7	
PERCENT CO BY VOL, DRY		0.5	0.5	
PERCENT N2 BY VOL, DRY		81.8	81.8	
MOLECULAR WT-DRY STK GAS		29.55	29.55	
MOLECULAR WT-STK GAS		28.68	28.70	
AVG STACK TEMPERATURE	DEG.F	310.0	312.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.86	29.86	
AVG STACK GAS VELOCITY	FPS	25.727	25.100	25.414
STK FLOWRATE, DRY,STD CN	DSCFM	981.	955.	968.
ACTUAL STACK FLOWRATE	ACFM	1544.	1506.	1525.
PERCENT ISOKINETIC		105.3	106.9	106.1
PARTICULATE WT-PARTIAL	MG	50.20	45.50	47.85
PARTICULATE WT-TOTAL	MG	85.30	95.30	90.30
PERC IMPINGER CATCH		41.1	52.3	46.7
PART. LOAD-PTL,STD CN	GR/DSCF	0.01626	0.01491	0.01559
PART. LOAD-TTL,STD CN	GR/DSCF	0.02764	0.03123	0.02943
PART. LOAD-PTL,STD CN @ 12% CO2		0.02788	0.02556	0.02672
PART. LOAD-TTL,STD CN @ 12% CO2		0.04738	0.05353	0.05045
PART. LOAD-PTL,STK CN	GR/ACF	0.01033	0.00945	0.00989
PART. LOAD-TTL,STK CN	GR/ACF	0.01755	0.01980	0.01868
PARTIC EMIS-PARTIAL	LB/HR	0.14	0.12	0.13
PARTIC EMIS-TOTAL	LB/HR	0.23	0.26	0.24
PART EMIS/WT PRD FD PTL	LB/TON	8.54670	7.63137	8.08903
PART EMIS/WT PRD FD TTL	LB/TON	14.52258	15.98394	15.25326
PERCENT EXCESS AIR		93.8	93.8	93.8

PLANT: D2MPB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		03-23-73	03-23-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	30.04	30.04	
AVG ORIFICE PRES DROP	IN.H2O	1.043	1.012	
VOL DRY GAS-METER COND	DCF	33.64	33.96	
AVG GAS METER TEMP	DEG.F	74.5	68.3	
VOL DRY GAS-STD COND	DSCF	33.56	34.28	
TOTAL H2O COLLECTED	ML	46.0	52.0	
VOL H2O VAPOR-STD COND	SCF	2.18	2.46	
PERCENT MOISTURE BY VOL		6.1	6.7	
MOLE FRACTION DRY GAS		0.939	0.933	
PERCENT CO2 BY VOL, DRY		5.8	5.8	
PERCENT O2 BY VOL, DRY		13.7	13.7	
PERCENT CO BY VOL, DRY		0.5	0.5	
PERCENT N2 BY VOL, DRY		80.0	80.0	
MOLECULAR WT-DRY STK GAS		29.48	29.48	
MOLECULAR WT-STK GAS		28.78	28.71	
AVG STACK TEMPERATURE	DEG.F	227.0	227.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.04	30.04	
AVG STACK GAS VELOCITY	FPS	36.308	34.924	35.616
STK FLOWRATE, DRY, STD CN	DSCFM	1584.	1514.	1549.
ACTUAL STACK FLOWRATE	ACFM	2178.	2095.	2137.
PERCENT ISOKINETIC		103.6	110.7	107.2
PARTICULATE WT-PARTIAL	MG	900.90	645.70	773.30
PARTICULATE WT-TOTAL	MG	935.10	668.80	801.95
PERC IMPINGER CATCH		3.7	3.5	3.6
PART. LOAD-PTL,STD CN	GR/DSCF	0.41339	0.29007	0.35173
PART. LOAD-TTL,STD CN	GR/DSCF	0.42908	0.30044	0.36476
PART. LOAD-PTL,STD CN @ 12% CO2	GR/DSCF	0.85528	0.60014	0.72771
PART. LOAD-TTL,STD CN @ 12% CO2	GR/DSCF	0.88775	0.62161	0.75468
PART. LOAD-PTL,STK CN	GR/ACF	0.30042	0.20944	0.25493
PART. LOAD-TTL,STK CN	GR/ACF	0.31183	0.21693	0.26438
PARTIC EMIS-PARTIAL	LB/HR	5.61	3.76	4.69
PARTIC EMIS-TOTAL	LB/HR	5.83	3.90	4.86
PART EMIS/WT PRD FD PTL	LB/TON	*****	114.40437	142.50484
PART EMIS/WT PRD FD TTL	LB/TON	*****	118.49724	147.78955
PERCENT EXCESS AIR		175.4	175.4	175.4

PLANT: D3MPB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		04-04-73	04-04-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN.	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	29.71	29.71	
AVG ORIFICE PRES DROP	IN.H2O	0.915	0.840	
VOL DRY GAS-METER COND	DCF	32.36	30.20	
AVG GAS METER TEMP	DEG.F	86.3	81.8	
VOL DRY GAS-STD COND	DSCF	31.24	29.39	
TOTAL H2O COLLECTED	ML	49.7	40.0	
VOL H2O VAPOR-STD COND	SCF	2.36	1.90	
PERCENT MOISTURE BY VOL		7.0	6.1	
MOLE FRACTION DRY GAS		0.930	0.939	
PERCENT CO2 BY VOL, DRY		5.6	5.6	
PERCENT O2 BY VOL, DRY		13.1	13.0	
PERCENT CO BY VOL, DRY		0.2	0.2	
PERCENT N2 BY VOL, DRY		81.1	81.2	
MOLECULAR WT-DRY STK GAS		29.42	29.42	
MOLECULAR WT-STK GAS		28.62	28.72	
AVG STACK TEMPERATURE	DEG.F	280.0	279.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.71	29.71	
AVG STACK GAS VELOCITY	FPS	36.155	35.308	35.732
STK FLOWRATE, DRY, STD CN	DSCFM	1434.	1417.	1426.
ACTUAL STACK FLOWRATE	ACFM	2169.	2118.	2144.
PERCENT ISOKINETIC		106.5	101.4	104.0
PARTICULATE WT-PARTIAL	MG	35.20	65.00	50.10
PARTICULATE WT-TOTAL	MG	125.60	112.70	119.15
PERC IMPINGER CATCH		72.0	42.3	57.1
PART. LOAD-PTL,STD CN	GR/DSCF	0.01735	0.03406	0.02571
PART. LOAD-TTL,STD CN	GR/DSCF	0.06192	0.05905	0.06049
PART. LOAD-PTL,STD CN @ 12% CO2	GR/DSCF	0.03718	0.07299	0.05508
PART. LOAD-TTL,STD CN @ 12% CO2	GR/DSCF	0.13268	0.12655	0.12961
PART. LOAD-PTL,STK CN	GR/ACF	0.01147	0.02277	0.01712
PART. LOAD-TTL,STK CN	GR/ACF	0.04091	0.03948	0.04019
PARTIC EMIS-PARTIAL	LB/HR	0.21	0.41	0.31
PARTIC EMIS-TOTAL	LB/HR	0.76	0.72	0.74
PART EMIS/WT PRO FD PTL	LB/TON	5.25436	10.08946	7.67191
PART EMIS/WT PRO FD TTL	LB/TON	18.74850	17.49356	18.12103
PERCENT EXCESS AIR		154.6	151.1	152.8

PLANT: D4B PB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		05-05-73	05-05-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	30.35	30.30	
AVG ORIFICE PRES DROP	IN.H2O	0.990	1.038	
VOL DRY GAS-METER COND	DCF	32.66	31.71	
AVG GAS METER TEMP	DEG.F	58.2	61.3	
VOL DRY GAS-STD COND	DSCF	33.95	32.72	
TOTAL H2O COLLECTED	ML	44.0	43.8	
VOL H2O VAPOR-STD COND	SCF	2.09	2.08	
PERCENT MOISTURE BY VOL		5.8	6.0	
MOLE FRACTION DRY GAS		0.942	0.940	
PERCENT CO2 BY VOL, DRY		4.8	4.8	
PERCENT O2 BY VOL, DRY		13.5	13.5	
PERCENT CO BY VOL, DRY		1.0	1.0	
PERCENT N2 BY VOL, DRY		80.7	80.7	
MOLECULAR WT-DRY STK GAS		29.31	29.31	
MOLECULAR WT-STK GAS		28.65	28.63	
AVG STACK TEMPERATURE	DEG.F	278.0	278.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.35	30.30	
AVG STACK GAS VELOCITY	FPS	37.579	38.040	37.809
STK FLOWRATE, DRY,STD CN	DSCFM	1547.	1561.	1554.
ACTUAL STACK FLOWRATE	ACFM	2255.	2282.	2269.
PERCENT ISOKINETIC		107.3	102.5	104.9
PARTICULATE WT-PARTIAL	MG	289.20	179.20	234.20
PARTICULATE WT-TOTAL	MG	335.30	266.50	300.90
PERC IMPINGER CATCH		13.7	32.8	23.3
PART. LOAD-PTL,STD CN	GR/DSCF	0.13117	0.08434	0.10776
PART. LOAD-TTL,STD CN	GR/DSCF	0.15208	0.12543	0.13876
PART. LOAD-PTL,STD CN @ 12% CO2		0.32794	0.21085	0.26939
PART. LOAD-TTL,STD CN @ 12% CO2		0.38021	0.31357	0.34689
PART. LOAD-PTL,STK CN	GR/ACF	0.08996	0.05763	0.07380
PART. LOAD-TTL,STK CN	GR/ACF	0.10430	0.08571	0.09500
PARTIC EMIS-PARTIAL	LB/HR	1.74	1.13	1.43
PARTIC EMIS-TOTAL	LB/HR	2.02	1.68	1.85
PART EMIS/WT PRD FD PTL	LB/TON	41.41705	26.86107	34.13905
PART EMIS/WT PRD FD TTL	LB/TON	48.01915	39.94684	43.98299
PERCENT EXCESS AIR		156.5	156.5	156.5

PLANT: U1BPP  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		05-22-73	05-22-73	
STACK AREA	FT <sup>2</sup>	1.000	1.000	
NET TIME OF RUN	MIN	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	29.64	29.64	
AVG ORIFICE PRES DROP	IN.H2O	1.054	0.959	
VOL DRY GAS-METER COND	DCF	33.36	31.82	
AVG GAS METER TEMP	DEG.F	86.1	78.9	
VOL DRY GAS-STD COND	DSCF	32.14	31.07	
TOTAL H2O COLLECTED	ML	48.2	43.9	
VOL H2O VAPOR-STD COND	SCF	2.28	2.08	
PERCENT MOISTURE BY VOL		6.6	6.3	
MOLE FRACTION DRY GAS		0.934	0.937	
PERCENT CO <sub>2</sub> BY VOL, DRY		1.5	1.5	
PERCENT O <sub>2</sub> BY VOL, DRY		18.9	18.9	
PERCENT CO BY VOL, DRY		0.2	0.2	
PERCENT N <sub>2</sub> BY VOL, DRY		79.4	79.4	
MOLECULAR WT-DRY STK GAS		29.00	29.00	
MOLECULAR WT-STK GAS		28.27	28.31	
AVG STACK TEMPERATURE	DEG.F	305.0	305.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.64	29.64	
AVG STACK GAS VELOCITY	FPS	40.181	38.349	39.265
STK FLOWRATE, DRY, STD CN	DSCFM	1544.	1480.	1512.
ACTUAL STACK FLOWRATE	ACFM	2411.	2301.	2356.
PERCENT ISOKINETIC		101.8	102.7	102.2
PARTICULATE WT-PARTIAL	MG	230.90	87.20	159.05
PARTICULATE WT-TOTAL	MG	286.10	115.50	200.80
PERC IMPINGER CATCH		19.3	24.5	21.9
PART. LOAD-PTL, STD CN	GR/DSCF	0.11062	0.04323	0.07692
PART. LOAD-TTL, STD CN	GR/DSCF	0.13707	0.05725	0.09716
PART. LOAD-PTL, STD CN @ 12% CO <sub>2</sub>		0.88497	0.34580	0.61538
PART. LOAD-TTL, STD CN @ 12% CO <sub>2</sub>		1.09653	0.45803	0.77728
PART. LOAD-PTL, STK CN	GR/ACF	0.07083	0.02778	0.04931
PART. LOAD-TTL, STK CN	GR/ACF	0.08776	0.03680	0.06228
PARTIC EMIS-PARTIAL	LB/HR	1.46	0.55	1.01
PARTIC EMIS-TOTAL	LB/HR	1.81	0.73	1.27
PART EMIS/WT PRD FD PTL	LB/TON	49.81177	18.64821	34.22998
PART EMIS/WT PRD FD TTL	LB/TON	61.72005	24.70033	43.21017
PERCENT EXCESS AIR		869.7	869.7	869.7

OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		04-20-73	04-20-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	30.40	30.40	
AVG ORIFICE PRES DROP	IN.H2O	3.640	3.199	
VOL DRY GAS-METER COND	DCF	57.47	62.46	
AVG GAS METER TEMP	DEG.F	76.0	76.4	
VOL DRY GAS-STD COND	DSCF	58.24	63.17	
TOTAL H2O COLLECTED	ML	65.2	63.0	
VOL H2O VAPOR-STD COND	SCF	3.09	2.99	
PERCENT MOISTURE BY VOL		5.0	4.5	
MOLE FRACTION DRY GAS		0.950	0.955	
PERCENT CO2 BY VOL, DRY		5.5	5.5	
PERCENT O2 BY VOL, DRY		11.8	11.8	
PERCENT CO BY VOL, DRY		0.5	0.5	
PERCENT N2 BY VOL, DRY		82.2	82.2	
MOLECULAR WT-DRY STK GAS		29.35	29.35	
MOLECULAR WT-STK GAS		28.78	28.84	
AVG STACK TEMPERATURE	DEG.F	210.0	210.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.40	30.40	
AVG STACK GAS VELOCITY	FPS	28.033	28.038	28.035
STK FLOWRATE, DRY,STD CN	DSCFM	1283.	1291.	1287.
ACTUAL STACK FLOWRATE	ACFM	1682.	1682.	1682.
PERCENT ISOKINETIC		98.6	106.4	102.5
PARTICULATE WT-PARTIAL	MG	84.60	31.60	58.10
PARTICULATE WT-TOTAL	MG	114.30	73.60	93.95
PERC IMPINGER CATCH		26.0	57.1	41.5
PART. LOAD-PTL,STD CN	GR/DSCF	0.02237	0.00770	0.01504
PART. LOAD-TTL,STD CN	GR/DSCF	0.03023	0.01794	0.02408
PART. LOAD-PTL,STD CN @ 12% CO2		0.04881	0.01681	0.03281
PART. LOAD-TTL,STD CN @ 12% CO2		0.06595	0.03915	0.05255
PART. LOAD-PTL,STK CN	GR/ACF	0.01706	0.00591	0.01148
PART. LOAD-TTL,STK CN	GR/ACF	0.02305	0.01376	0.01841
PARTIC EMIS-PARTIAL	LB/HR	0.25	0.09	0.17
PARTIC EMIS-TOTAL	LB/HR	0.33	0.20	0.27
PART EMIS/WT PRD FD PTL	LB/TON	8.09577	2.80365	5.44971
PART EMIS/WT PRD FD TTL	LB/TON	10.93790	6.53003	8.73396
PERCENT EXCESS AIR		113.8	113.8	113.8

PLANT: U2MPB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		04-20-73	04-20-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	30.40	30.40	
AVG ORIFICE PRES DROP	IN.H2O	3.640	3.199	
VOL DRY GAS-METER COND	DCF	57.47	62.46	
AVG GAS METER TEMP	DEG. F	76.0	76.4	
VOL DRY GAS-STD COND	DSCF	58.24	63.17	
TOTAL H2O COLLECTED	ML	65.2	63.0	
VOL H2O VAPOR-STD COND	SCF	3.09	2.99	
PERCENT MOISTURE BY VOL		5.0	4.5	
MOLE FRACTION DRY GAS		0.950	0.955	
PERCENT CO2 BY VOL, DRY		5.5	5.5	
PERCENT O2 BY VOL, DRY		11.8	11.8	
PERCENT CO BY VOL, DRY		0.5	0.5	
PERCENT N2 BY VOL, DRY		82.2	82.2	
MOLECULAR WT-DRY STK GAS		29.35	29.35	
MOLECULAR WT-STK GAS		28.78	28.84	
AVG STACK TEMPERATURE	DEG. F	210.0	210.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.40	30.40	
AVG STACK GAS VELOCITY	FPS	28.033	28.038	28.035
STK FLOWRATE, DRY,STD CN	DSCFM	1283.	1291.	1287.
ACTUAL STACK FLOWRATE	ACFM	1682.	1682.	1682.
PERCENT ISOKINETIC		98.6	106.4	102.5
PARTICULATE WT-PARTIAL	MG	84.60	31.60	58.10
PARTICULATE WT-TOTAL	MG	114.30	73.60	93.95
PERC IMPINGER CATCH		26.0	57.1	41.5
PART. LOAD-PTL,STD CN	GR/DSCF	0.02237	0.00770	0.01504
PART. LOAD-TTL,STD CN	GR/DSCF	0.03023	0.01794	0.02408
PART. LOAD-PTL,STD CN @ 12% CO2	GR/DSCF	0.04881	0.01681	0.03281
PART. LOAD-TTL,STD CN @ 12% CO2	GR/DSCF	0.06595	0.03915	0.05255
PART. LOAD-PTL,STK CN	GR/ACF	0.01706	0.00591	0.01148
PART. LOAD-TTL,STK CN	GR/ACF	0.02305	0.01376	0.01841
PARTIC EMIS-PARTIAL	LB/HR	0.25	0.09	0.17
PARTIC EMIS-TOTAL	LB/HR	0.33	0.20	0.27
PART EMIS/WT PRD FD PTL	LB/TON	8.09577	2.80365	5.44971
PART EMIS/WT PRD FD TTL	LB/TON	10.93790	6.53003	8.73396
PERCENT EXCESS AIR		113.8	113.8	113.8

PLANT: U3MPB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		04-18-73	04-18-73	
STACK AREA	FT2	3.140	3.140	
NET TIME OF RUN	MIN	96.0	96.0	
BAROMETRIC PRESSURE	IN.HG	30.24	30.24	
AVG ORIFICE PRES DROP	IN.H2O	2.414	1.764	
VOL DRY GAS-METER COND	DCF	85.05	68.01	
AVG GAS METER TEMP	DEG.F	94.8	90.8	
VOL DRY GAS-STD COND	DSCF	82.58	66.41	
TOTAL H2O COLLECTED	ML	58.7	43.9	
VOL H2O VAPOR-STD COND	SCF	2.78	2.08	
PERCENT MOISTURE BY VOL		3.3	3.0	
MOLE FRACTION DRY GAS		0.967	0.970	
PERCENT CO2 BY VOL, DRY		3.5	3.5	
PERCENT O2 BY VOL, DRY		16.0	16.0	
PERCENT CO BY VOL, DRY		1.0	1.0	
PERCENT N2 BY VOL, DRY		79.5	79.5	
MOLECULAR WT-DRY STK GAS		29.20	29.20	
MOLECULAR WT-STK GAS		28.83	28.86	
AVG STACK TEMPERATURE	DEG.F	205.0	207.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.24	30.24	
AVG STACK GAS VELOCITY	FPS	20.701	16.434	18.568
STK FLOWRATE, DRY, STD CN	DSCFM	3039.	2411.	2725.
ACTUAL STACK FLOWRATE	ACFM	3900.	3096.	3498.
PERCENT ISOKINETIC		78.4	79.5	78.9
PARTICULATE WT-PARTIAL	MG	48.80	52.60	50.70
PARTICULATE WT-TOTAL	MG	98.50	84.00	91.25
PERC IMPINGER CATCH		50.5	37.4	43.9
PART. LOAD-PTL,STD CN	GR/DSCF	0.00910	0.01220	0.01065
PART. LOAD-TTL,STD CN	GR/DSCF	0.01837	0.01948	0.01892
PART. LOAD-PTL,STD CN @ 12% CO2		0.03120	0.04182	0.03651
PART. LOAD-TTL,STD CN @ 12% CO2		0.06298	0.06678	0.06488
PART. LOAD-PTL,STK CN	GR/ACF	0.00709	0.00949	0.00829
PART. LOAD-TTL,STK CN	GR/ACF	0.01430	0.01516	0.01473
PARTIC EMIS-PARTIAL	LB/HR	0.24	0.25	0.24
PARTIC EMIS-TOTAL	LB/HR	0.48	0.40	0.44
PART EMIS/WT PRD FD PTL	LB/TON	11.73411	12.47600	12.10506
PART EMIS/WT PRD FD TTL	LB/TON	23.68462	19.92363	21.80412
PERCENT EXCESS AIR		282.4	282.4	282.4

PLANT: U4MPB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		05-11-73	05-11-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	30.06	30.06	
AVG ORIFICE PRES DROP	IN.H2O	1.180	1.139	
VOL DRY GAS-METER COND	DCF	32.88	33.74	
AVG GAS METER TEMP	DEG.F	81.6	82.3	
VOL DRY GAS-STD COND	DSCF	32.41	33.21	
TOTAL H2O COLLECTED	ML	47.1	50.0	
VOL H2O VAPOR-STD COND	SCF	2.23	2.37	
PERCENT MOISTURE BY VOL		6.4	6.7	
MOLE FRACTION DRY GAS		0.936	0.933	
PERCENT CO2 BY VOL, DRY		5.4	5.4	
PERCENT O2 BY VOL, DRY		13.4	13.4	
PERCENT CO BY VOL, DRY		0.5	0.5	
PERCENT N2 BY VOL, DRY		80.7	80.7	
MOLECULAR WT-DRY STK GAS		29.40	29.40	
MOLECULAR WT-STK GAS		28.67	28.64	
AVG STACK TEMPERATURE	DEG.F	283.0	289.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.06	30.06	
AVG STACK GAS VELOCITY	FPS	38.712	38.830	38.771
STK FLOWRATE, DRY, STD CN	DSCFM	1557.	1546.	1551.
ACTUAL STACK FLOWRATE	ACFM	2323.	2330.	2326.
PERCENT ISOKINETIC		101.8	105.1	103.4
PARTICULATE WT-PARTIAL	MG	71.60	79.10	75.35
PARTICULATE WT-TOTAL	MG	106.90	110.90	108.90
PERC IMPINGER CATCH		33.0	28.7	30.8
PART. LOAD-PTL,STD CN	GR/DSCF	0.03402	0.03668	0.03535
PART. LOAD-TTL,STD CN	GR/DSCF	0.05080	0.05143	0.05111
PART. LOAD-PTL,STD CN @ 12% CO2		0.07560	0.08151	0.07856
PART. LOAD-TTL,STD CN @ 12% CO2		0.11288	0.11428	0.11358
PART. LOAD-PTL,STK CN	GR/ACF	0.02279	0.02432	0.02356
PART. LOAD-TTL,STK CN	GR/ACF	0.03403	0.03410	0.03406
PARTIC EMIS-PARTIAL	LB/HR	0.45	0.49	0.47
PARTIC EMIS-TOTAL	LB/HR	0.68	0.68	0.68
PART EMIS/WT PRD FD PTL	LB/TON	17.19870	18.40782	17.80325
PART EMIS/WT PRD FD TTL	LB/TON	25.67795	25.80818	25.74306
PERCENT EXCESS AIR		161.3	161.3	161.3

PLANT: U5BPB  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		05-22-73	05-22-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	60.0	60.0	
BAROMETRIC PRESSURE	IN.HG	29.64	29.64	
AVG ORIFICE PRES DROP	IN.H2O	1.101	1.083	
VOL DRY GAS-METER COND	DCF	33.48	31.82	
AVG GAS METER TEMP	DEG.F	86.6	82.6	
VOL DRY GAS-STD COND	DSCF	32.24	30.87	
TOTAL H2O COLLECTED	ML	51.7	55.5	
VOL H2O VAPOR-STD COND	SCF	2.45	2.63	
PERCENT MOISTURE BY VOL		7.1	7.9	
MOLE FRACTION DRY GAS		0.929	0.921	
PERCENT CO2 BY VOL, DRY		4.4	4.4	
PERCENT O2 BY VOL, DRY		13.4	13.4	
PERCENT CO BY VOL, DRY		0.0	0.0	
PERCENT N2 BY VOL, DRY		82.2	82.2	
MOLECULAR WT-DRY STK GAS		29.24	29.24	
MOLFCULAR WT-STK GAS		28.45	28.36	
AVG STACK TEMPERATURE	DEG.F	262.0	262.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.64	29.64	
AVG STACK GAS VELOCITY	FPS	37.667	37.808	37.737
STK FLOWRATE, DRY, STD CN	DSCFM	1527.	1520.	1523.
ACTUAL STACK FLOWRATE	ACFM	2260.	2268.	2264.
PERCENT ISOKINETIC		103.2	99.3	101.3
PARTICULATE WT-PARTIAL	MG	379.40	437.80	408.60
PARTICULATE WT-TOTAL	MG	408.50	469.10	438.80
PERC IMPINGER CATCH		7.1	6.7	6.9
PART. LOAD-PTL,STD CN	GR/DSCF	0.18121	0.21840	0.19981
PART. LOAD-T L,STD CN	GR/DSCF	0.19511	0.23402	0.21456
PART. LOAD-PTL,STD CN @ 12% CO2	GR/DSCF	0.49422	0.59564	0.54493
PART. LOAD-TTL,STD CN @ 12% CO2	GR/ACF	0.53213	0.63823	0.58518
PART. LOAD-PTL,STK CN	GR/ACF	0.12237	0.14624	0.13431
PART. LOAD-TTL,STK CN	GR/ACF	0.13176	0.15669	0.14423
PARTIC EMIS-PARTIAL	LB/HR	2.37	2.85	2.61
PARTIC EMIS-TOTAL	LB/HR	2.55	3.05	2.80
PART EMIS/WT PRD FD PTL	LB/TON	71.22878	85.43750	78.33313
PART EMIS/WT PRD FD T L	LB/TON	76.69205	91.54576	84.11890
PERCENT EXCESS AIR		161.4	161.4	161.4

PLANT: ALMHI  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	3	AVERAGE
DATE OF RUN		06-08-73	06-08-73	06-08-73	
STACK AREA	FT <sup>2</sup>	1.000	1.000	1.000	
NET TIME OF RUN	MIN	64.0	64.0	64.0	
BAROMETRIC PRESSURE	IN.HG	30.00	30.00	30.00	
AVG ORIFICE PRES DROP	IN.H2O	0.923	2.180	2.920	
VOL DRY GAS-METER COND	DGF	34.11	48.49	57.74	
AVG GAS METER TEMP	DEG.F	102.4	111.3	109.1	
VOL DRY GAS-STD COND	DSCF	32.30	45.33	54.29	
TOTAL H2O COLLECTED	ML	56.4	87.1	72.0	
VOL H2O VAPOR-STD COND	SCF	2.67	4.13	3.41	
PERCENT MOISTURE BY VOL		7.6	8.3	5.9	
MOLE FRACTION DRY GAS		0.924	0.917	0.941	
PERCENT CO <sub>2</sub> BY VOL, DRY		0.8	0.8	0.8	
PERCENT O <sub>2</sub> BY VOL, DRY		14.6	14.6	14.6	
PERCENT CO BY VOL, DRY		0.0	0.0	0.0	
PERCENT N <sub>2</sub> BY VOL, DRY		84.6	84.6	84.6	
MOLECULAR WT-DRY STK GAS		28.71	28.71	28.71	
MOLECULAR WT-STK GAS		27.89	27.82	28.08	
AVG STACK TEMPERATURE	DEG.F	143.0	227.0	296.0	
NET SAMPLING POINTS		1	1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.00	30.00	30.00	
AVG STACK GAS VELOCITY	FPS	14.010	23.700	29.440	22.384
STK FLOWRATE, DRY, STD CN	DSCFM	684.	1008.	1168.	953.
ACTUAL STACK FLOWRATE	ACFM	841.	1422.	1766.	1343.
PERCENT ISOKINETIC		96.2	91.6	94.7	94.2
PARTICULATE WT-PARTIAL	MG	171.10	74.50	194.20	146.60
PARTICULATE WT-TOTAL	MG	266.60	183.20	326.10	258.63
PERC IMPINGER CATCH		35.8	59.3	40.4	45.2
PART. LOAD-PTL,STD CN	GR/DSCF	0.08159	0.02531	0.05509	0.05400
PART. LOAD-TTL,STD CN	GR/DSCF	0.12712	0.06224	0.09251	0.09396
PART. LOAD-PTL,STD CN @ 12% CO <sub>2</sub>		1.22378	0.37963	0.82637	0.80993
PART. LOAD-TTL,STD CN @ 12% CO <sub>2</sub>		1.90684	0.93354	1.38763	1.40934
PART. LOAD-PTL,STK CN	GR/ACF	0.06635	0.01793	0.03641	0.04023
PART. LOAD-TTL,STK CN	GR/ACF	0.10339	0.04409	0.06113	0.06954
PARTIC EMIS-PARTIAL	LB/HR	0.48	0.22	0.55	0.42
PARTIC EMIS-TOTAL	LB/HR	0.75	0.54	0.93	0.74
PART EMIS/WT PRD FD PTL	LB/TON	45.55826	8.25113	8.55092	20.78676
PART EMIS/WT PRD FD TTL	LB/TON	70.98683	20.29004	14.35868	35.21184
PERCENT EXCESS AIR		188.8	188.8	188.8	188.8

PLANT: A2BHI  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		06-18-73	06-18-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	56.0	56.0	
BAROMETRIC PRESSURE	IN.HG	30.00	30.00	
AVG ORIFICE PRES DROP	IN.H2O	1.248	1.319	
VOL DRY GAS-METER COND	DCF	33.21	35.92	
AVG GAS METER TEMP	DEG.F	94.8	84.8	
VOL DRY GAS-STD COND	DSCF	31.90	35.14	
TOTAL H2O COLLECTED	ML	37.3	39.8	
VOL H2O VAPOR-STD COND	SCF	1.77	1.89	
PERCENT MOISTURE BY VOL		5.3	5.1	
MOLE FRACTION DRY GAS		0.947	0.949	
PERCENT CO2 BY VOL, DRY		1.2	1.8	
PERCENT O2 BY VOL, DRY		19.3	18.5	
PERCENT CO BY VOL, DRY		0.1	0.1	
PERCENT N2 BY VOL, DRY		79.4	79.6	
MOLECULAR WT-DRY STK GAS		28.96	29.03	
MOLECULAR WT-STK GAS		28.39	28.47	
AVG STACK TEMPERATURE	DEG.F	239.0	214.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.00	30.00	
AVG STACK GAS VELOCITY	FPS	34.284	40.216	37.250
STK FLOWRATE, DRY,STD CN	DSCFM	1481.	1805.	1643.
ACTUAL STACK FLOWRATE	ACFM	2057.	2413.	2235.
PERCENT ISOKINETIC		112.8	102.0	107.4
PARTICULATE WT-PARTIAL	MG	99.80	156.30	128.05
PARTICULATE WT-TOTAL	MG	213.70	255.40	234.55
PERC IMPINGER CATCH		53.3	38.8	46.1
PART. LOAD-PTL,STD CN	GR/DSCF	0.04819	0.06849	0.05834
PART. LOAD-TTL,STD CN	GR/DSCF	0.10318	0.11192	0.10755
PART. LOAD-PTL,STD CN @ 12% CO2	GR/DSCF	0.48186	0.45661	0.46923
PART. LOAD-TTL,STD CN @ 12% CO2	GR/DSCF	1.03179	0.74612	0.88896
PART. LOAD-PTL,STK CN	GR/ACF	0.03468	0.05121	0.04295
PART. LOAD-TTL,STK CN	GR/ACF	0.07426	0.08368	0.07897
PARTIC EMIS-PARTIAL	LB/HR	0.61	1.06	0.84
PARTIC EMIS-TOTAL	LB/HR	1.31	1.73	1.52
PART EMIS/WT PRD FD PTL	LB/TON	9.41309	13.16512	11.28911
PART EMIS/WT PRD FD TTL	LB/TON	20.15608	21.51230	20.83418
PERCENT EXCESS AIR		1124.7	719.5	922.1

PLANT: B1BHI  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		0F-02-73	06-02-73	
STACK AREA	FT <sup>2</sup>	1.000	1.000	
NET TIME OF RUN	MIN	56.0	56.0	
BAROMETRIC PRESSURE	IN.HG	30.05	30.05	
AVG ORIFICE PRES DROP	IN.H <sub>2</sub> O	1.273	1.480	
VOL DRY GAS-METER COND	DCF	32.11	35.67	
AVG GAS METER TEMP	DEG.F	81.3	92.7	
VOL DRY GAS-STD COND	DSCF	31.67	34.47	
TOTAL H <sub>2</sub> O COLLECTED	ML	36.1	32.0	
VOL H <sub>2</sub> O VAPOR-STD COND	SCF	1.71	1.52	
PERCENT MOISTURE BY VOL		5.1	4.2	
MOLE FRACTION DRY GAS		0.949	0.958	
PERCENT CO <sub>2</sub> BY VOL, DRY		3.2	2.2	
PERCENT O <sub>2</sub> BY VOL, DRY		16.4	17.6	
PERCENT CO BY VOL, DRY		0.0	0.0	
PERCENT N <sub>2</sub> BY VOL, DRY		80.4	80.2	
MOLECULAR WT-DRY STK GAS		29.17	29.06	
MOLECULAR WT-STK GAS		28.60	28.59	
AVG STACK TEMPERATURE	DEG.F	241.0	235.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.05	30.05	
AVG STACK GAS VELOCITY	FPS	16.567	17.042	16.805
STK FLOWRATE, DRY, STD CN	DSCFM	716.	750.	733.
ACTUAL STACK FLOWRATE	ACFM	994.	1023.	1008.
PERCENT ISOKINETIC		103.0	107.0	105.0
PARTICULATE WT-PARTIAL	MG	163.00	293.50	228.25
PARTICULATE WT-TOTAL	MG	282.30	471.40	376.85
PERC IMPINGER CATCH		42.3	37.7	40.0
PART. LOAD-PTL,STD CN	GR/DSCF	0.07925	0.13112	0.10518
PART. LOAD-TTL,STD CN	GR/DSCF	0.13725	0.21059	0.17392
PART. LOAD-PTL,STD CN @ 12% CO <sub>2</sub>		0.29719	0.71518	0.50619
PART. LOAD-TTL,STD CN @ 12% CO <sub>2</sub>		0.51470	1.14868	0.83169
PART. LOAD-PTL,STK CN	GR/ACF	0.05705	0.09612	0.07658
PART. LOAD-TTL,STK CN	GR/ACF	0.09880	0.15437	0.12659
PARTIC EMIS-PARTIAL	LB/HR	0.49	0.84	0.66
PARTIC EMIS-TOTAL	LB/HR	0.84	1.35	1.10
PART EMIS/WT PRD FD PTL	LB/TON	14.09719	27.63571	20.86644
PART EMIS/WT PRD FD TTL	LB/TON	24.41496	44.38663	34.40079
PERCENT EXCESS AIR		339.9	492.6	416.2

PLANT: B2BHI  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	3	AVERAGE
DATE OF RUN		05-31-73	05-31-73	05-31-73	
STACK AREA	FT <sup>2</sup>	1.000	1.000	1.000	
NET TIME OF RUN	MIN	49.0	56.0	56.0	
BAROMETRIC PRESSURE	IN.HG	29.61	29.61	29.61	
AVG ORIFICE PRES DROP	IN.H2O	0.621	2.448	2.020	
VOL DRY GAS-METER COND	DGF	22.28	43.61	42.02	
AVG GAS METER TEMP	DEG.F	86.3	97.2	92.6	
VOL DRY GAS-STD COND	DSCF	21.42	41.29	40.07	
TOTAL H2O COLLECTED	ML	16.9	48.5	48.5	
VOL H2O VAPOR-STD COND	SCF	0.80	2.30	2.30	
PERCENT MOISTURE BY VOL		3.6	5.3	5.4	
MOLE FRACTION DRY GAS		0.964	0.947	0.946	
PERCENT CO <sub>2</sub> BY VOL, DRY		0.7	0.7	0.7	
PERCENT O <sub>2</sub> BY VOL, DRY		18.9	18.9	18.9	
PERCENT CO BY VOL, DRY		0.1	0.1	0.1	
PERCENT N <sub>2</sub> BY VOL, DRY		80.3	80.3	80.3	
MOLECULAR WT-DRY STK GAS		28.87	28.87	28.87	
MOLECULAR WT-STK GAS		28.48	28.29	28.28	
AVG STACK TEMPERATURE	DEG.F	170.0	207.0	194.0	
NET SAMPLING POINTS		1	1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.61	29.61	29.61	
AVG STACK GAS VELOCITY	FPS	24.111	21.437	19.932	21.827
STK FLOWRATE, DRY,STD CN	DSCFM	1161.	958.	907.	1009.
ACTUAL STACK FLOWRATE	ACFM	1447.	1286.	1196.	1310.
PERCENT ISOKINETIC		110.5	100.4	102.9	104.6
PARTICULATE WT-PARTIAL	MG	110.00	314.40	234.80	219.73
PARTICULATE WT-TOTAL	MG	191.90	426.60	402.00	340.17
PERC IMPINGER CATCH		42.7	26.3	41.6	36.9
PART. LOAD-PTL,STD CN	GR/DSCF	0.07908	0.11727	0.09024	0.09553
PART. LOAD-TTL,STD CN	GR/DSCF	0.13796	0.15912	0.15450	0.15053
PART. LOAD-PTL,STD CN @ 12% CO <sub>2</sub>	GR/DSCF	1.35565	2.01031	1.54699	1.63765
PART. LOAD-TTL,STD CN @ 12% CO <sub>2</sub>	GR/DSCF	2.36499	2.72773	2.64860	2.58044
PART. LOAD-PTL,STK CN	GR/ACF	0.06341	0.08728	0.06839	0.07303
PART. LOAD-TTL,STK CN	GR/ACF	0.11063	0.11843	0.11710	0.11539
PARTIC EMIS-PARTIAL	LB/HR	0.79	0.96	0.70	0.82
PARTIC EMIS-TOTAL	LB/HR	1.37	1.31	1.20	1.29
PART EMIS/WT PRD FD PTL	LB/TON	34.96880	28.74149	20.33263	28.01430
PART EMIS/WT PRD FD TTL	LB/TON	61.00462	38.99849	34.81140	44.93816
PERCENT EXCESS AIR		802.4	802.4	802.4	802.4

PLANT: B3MHI  
LOCATION: NYC

OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	3	AVERAGE
DATE OF RUN		06-28-73	06-28-73	06-28-73	
STACK AREA	FT2	1.000	1.000	1.000	
NET TIME OF RUN	MIN	64.0	64.0	64.0	
BAROMETRIC PRESSURE	IN.HG	29.86	29.86	29.82	
AVG ORIFICE PRES DROP	IN.H2O	5.058	2.075	1.510	
VOL DRY GAS-METER COND	DCF	33.95	47.50	43.49	
AVG GAS METER TEMP	DEG.F	100.1	106.5	102.2	
VOL DRY GAS-STD COND	DSCF	32.45	44.57	41.01	
TOTAL H2O COLLECTED	ML	32.0	49.5	33.3	
VOL H2O VAPOR-STD COND	SCF	1.52	2.35	1.58	
PERCENT MOISTURE BY VOL		4.5	5.0	3.7	
MOLE FRACTION DRY GAS		0.955	0.950	0.963	
PERCENT CO2 BY VOL, DRY		1.3	1.7	1.6	
PERCENT O2 BY VOL, DRY		19.5	18.8	18.7	
PERCENT CO BY VOL, DRY		0.1	0.0	0.0	
PERCENT N2 BY VOL, DRY		79.1	79.5	79.7	
MOLECULAR WT-DRY STK GAS		28.99	29.02	29.00	
MOLECULAR WT-STK GAS		28.50	28.47	28.60	
AVG STACK TEMPERATURE	DEG.F	192.0	228.0	187.0	
NET SAMPLING POINTS		1	1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.86	29.86	29.82	
AVG STACK GAS VELOCITY	FPS	15.107	22.676	17.987	18.590
STK FLOWRATE, DRY, STD CN	DSCFM	702.	993.	848.	848.
ACTUAL STACK FLOWRATE	ACFM	906.	1361.	1079.	1115.
PERCENT ISOKINETIC		94.1	91.4	98.5	94.7
PARTICULATE WT-PARTIAL	MG	150.70	198.60	356.20	235.17
PARTICULATE WT-TOTAL	MG	268.80	380.50	492.60	380.63
PERC IMPINGER CATCH		43.9	47.8	27.7	39.8
PART. LOAD-PTL, STD CN	GR/DSCF	0.07151	0.06863	0.13376	0.09130
PART. LOAD-TTL, STD CN	GR/DSCF	0.12755	0.13148	0.18499	0.14801
PART. LOAD-PTL, STD CN @ 12% CO2	GR/DSCF	0.66009	0.48441	1.00324	0.71591
PART. LOAD-TTL, STD CN @ 12% CO2	GR/DSCF	1.17739	0.92809	1.38741	1.16430
PART. LOAD-PTL, STD CN	GR/ACF	0.05538	0.05008	0.10508	0.07018
PART. LOAD-TTL, STD CN	GR/ACF	0.09878	0.09595	0.14532	0.11335
PARTIC EMIS-PARTIAL	LB/HR	0.43	0.58	0.97	0.66
PARTIC EMIS-TOTAL	LB/HR	0.77	1.12	1.35	1.08
PART EMIS/WT PRD FD PTL	LB/TON	11.32873	14.79440	38.14012	21.42108
PART EMIS/WT PRD FD TTL	LB/TON	20.20679	28.34476	52.74518	33.76556
PERCENT EXCESS AIR		1357.9	859.2	798.9	1005.3

PLANT: B4MPI  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	4	AVERAGE
DATE OF RUN		05-30-73	05-30-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	56.0	56.0	
BAROMETRIC PRESSURE	IN.HG	29.60	29.58	
AVG ORIFICE PRES DROP	IN.H2O	6.950	4.250	
VOL DRY GAS-METER COND	DCF	77.39	62.50	
AVG GAS METER TEMP	DEG.F	114.5	113.4	
VOL DRY GAS-STD COND	DSCF	71.83	57.70	
TOTAL H2O COLLECTED	ML	71.0	77.4	
VOL H2O VAPOR-STD COND	SCF	3.37	3.67	
PERCENT MOISTURE BY VOL		4.5	6.0	
MOLE FRACTION DRY GAS		0.955	0.940	
PERCENT CO2 BY VOL, DRY		1.8	1.8	
PERCENT O2 BY VOL, DRY		17.6	17.6	
PERCENT CO BY VOL, DRY		0.1	0.1	
PERCENT N2 BY VOL, DRY		80.5	80.5	
MOLECULAR WT-DRY STK GAS		28.99	28.99	
MOLECULAR WT-STK GAS		28.50	28.33	
AVG STACK TEMPERATURE	DEG.F	132.0	169.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.60	29.58	
AVG STACK GAS VELOCITY	FPS	20.723	28.744	24.733
STK FLOWRATE, DRY, STD CN	DSCFM	1052.	1350.	1201.
ACTUAL STACK FLOWRATE	ACFM	1243.	1725.	1484.
PERCENT ISOKINETIC		89.5	99.5	94.5
PARTICULATE WT-PARTIAL	MG	155.40	74.70	115.05
PARTICULATE WT-TOTAL	MG	230.00	143.00	186.50
PERC IMPINGER CATCH		32.4	47.8	40.1
PART. LOAD-PTL, STD CN	GR/DSCF	0.03332	0.01994	0.02663
PART. LOAD-TTL, STD CN	GR/DSCF	0.04931	0.03816	0.04374
PART. LOAD-PTL, STD CN @ 12% CO2		0.22210	0.13291	0.17750
PART. LOAD-TTL, STD CN @ 12% CO2		0.32872	0.25443	0.29157
PART. LOAD-PTL, STK CN	GR/ACF	0.02816	0.01560	0.02188
PART. LOAD-TTL, STK CN	GR/ACF	0.04168	0.02987	0.03578
PARTIC EMIS-PARTIAL	LB/HR	0.30	0.23	0.27
PARTIC EMIS-TOTAL	LB/HR	0.44	0.44	0.44
PART EMIS/WT PRD FD PTL	LB/TON	8.58102	4.12098	6.35100
PART EMIS/WT PRD FD TTL	LB/TON	12.70035	7.88890	10.29462
PERCENT EXCESS AIR		474.1	474.1	474.1

PLANT: B5BHI  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	3	AVERAGE
DATE OF RUN		06-07-73	06-07-73	06-07-73	
STACK AREA	FT2	1.000	1.000	1.000	
NET TIME OF RUN	MIN	64.0	64.0	64.0	
BAROMETRIC PRESSURE	IN.HG	29.90	29.90	29.90	
AVG ORIFICE PRES DROP	IN.H2O	3.225	4.108	5.844	
VOL DRY GAS-METER COND	DCF	59.10	65.72	77.85	
AVG GAS METER TEMP	DEG.F	95.5	100.2	103.6	
VOL DRY GAS-STD COND	DSCF	56.79	62.75	74.19	
TOTAL H2O COLLECTED	ML	52.5	89.7	92.0	
VOL H2O VAPOR-STD COND	SCF	2.49	4.25	4.36	
PERCENT MOISTURE BY VOL		4.2	6.3	5.6	
MOLE FRACTION DRY GAS		0.958	0.937	0.944	
PERCENT CO2 BY VOL, DRY		1.4	2.4	1.5	
PERCENT O2 BY VOL, DRY		18.7	17.4	18.2	
PERCENT CO BY VOL, DRY		0.2	0.2	0.2	
PERCENT N2 BY VOL, DRY		79.7	80.0	80.1	
MOLECULAR WT-DRY STK GAS		28.97	29.08	28.97	
MOLECULAR WT-STK GAS		28.51	28.38	28.36	
AVG STACK TEMPERATURE	DEG.F	281.0	331.0	370.0	
NET SAMPLING POINTS		1	1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.90	29.90	29.90	
AVG STACK GAS VELOCITY	FPS	30.011	34.976	44.339	36.442
STK FLOWRATE, DRY, STD CN	DSCFM	1233.	1316.	1603.	1384.
ACTUAL STACK FLOWRATE	ACFM	1801.	2099.	2660.	2187.
PERCENT ISOKINETIC		93.9	97.2	94.3	95.1
PARTICULATE WT-PARTIAL	MG	173.80	207.30	413.30	264.80
PARTICULATE WT-TOTAL	MG	358.50	511.20	824.90	564.87
PERC IMPINGER CATCH		51.5	59.4	49.9	53.6
PART. LOAD-PTL, STD CN	GR/DSCF	0.04713	0.05088	0.08579	0.06127
PART. LOAD-TTL, STD CN	GR/DSCF	0.09722	0.12546	0.17123	0.13131
PART. LOAD-PTL, STD CN @ 12% CO2		0.40400	0.25438	0.68634	0.44824
PART. LOAD-TTL, STD CN @ 12% CO2		0.83333	0.62731	1.36986	0.94350
PART. LOAD-PTL, STK CN	GR/ACF	0.03225	0.03188	0.05167	0.03860
PART. LOAD-TTL, STK CN	GR/ACF	0.06652	0.07861	0.10312	0.08275
PARTIC EMIS-PARTIAL	LB/HR	0.50	0.57	1.18	0.75
PARTIC EMIS-TOTAL	LB/HR	1.03	1.41	2.35	1.60
PART EMIS/WT PRD FD PTL	LB/TON	30.18433	10.62546	22.03433	20.94803
PART EMIS/WT PRD FD TTL	LB/TON	62.26169	26.20227	43.97803	44.14731
PERCENT EXCESS AIR		762.0	452.9	594.1	603.0

PLANT: CIMP  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	3	AVERAGE
DATE OF RUN		05-23-73	05-23-73	05-23-73	
STACK AREA	FT2	1.000	1.000	1.000	
NET TIME OF RUN	MIN	48.0	48.0	48.0	
BAROMETRIC PRESSURE	IN.HG	29.66	29.66	29.66	
AVG ORIFICE PRES DROP	IN.H2O	3.362	1.868	1.848	
VOL DRY GAS-METER COND	DCF	44.11	31.28	39.91	
AVG GAS METER TEMP	DEG.F	98.0	99.3	103.8	
VOL DRY GAS-STD COND	DSCF	41.87	29.52	37.35	
TOTAL H2O COLLECTED	ML	30.0	39.0	23.2	
VOL H2O VAPOR-STD COND	SCF	1.42	1.85	1.10	
PERCENT MOISTURE BY VOL		3.3	5.9	2.9	
MOLE FRACTION DRY GAS		0.967	0.941	0.971	
PERCENT CO2 BY VOL, DRY		1.4	1.4	1.4	
PERCENT O2 BY VOL, DRY		19.2	19.2	19.2	
PERCENT CO BY VOL, DRY		0.0	0.0	0.0	
PERCENT N2 BY VOL, DRY		79.4	79.4	79.4	
MOLECULAR WT-DRY STK GAS		28.99	28.99	28.99	
MOLECULAR WT-STK GAS		28.63	28.34	28.68	
AVG STACK TEMPERATURE	DEG.F	218.0	188.0	197.0	
NET SAMPLING POINTS		1	1	1	
STACK PRESSURE, ABSOLUTE	TN.HG	29.66	29.66	29.66	
AVG STACK GAS VELOCITY	FPS	14.900	10.673	11.430	12.334
STK FLOWRATE, DRY, STD CN	DSCFM	670.	488.	533.	564.
ACTUAL STACK FLOWRATE	ACFM	894.	640.	686.	740.
PERCENT ISOKINETIC		95.5	92.3	107.2	98.3
PARTICULATE WT-PARTIAL	MG	323.80	161.80	119.50	201.70
PARTICULATE WT-TOTAL	MG	488.90	369.00	204.40	354.10
PERC IMPINGER CATCH		33.8	56.2	41.5	43.8
PART. LOAD-PTL, STD CN	GR/DSCF	0.11911	0.08442	0.04927	0.08427
PART. LOAD-TTL, STD CN	GR/DSCF	0.17984	0.19253	0.08427	0.15221
PART. LOAD-PTL, STD CN @ 12% CO2		1.02092	0.72360	0.42229	0.72227
PART. LOAD-TTL, STD CN @ 12% CO2		1.54148	1.65024	0.72232	1.30468
PART. LOAD-PTL, STK CN	GR/ACF	0.08920	0.06436	0.03824	0.06393
PART. LOAD-TTL, STK CN	GR/ACF	0.13468	0.14678	0.06541	0.11562
PARTIC EMIS-PARTIAL	LB/HR	0.68	0.35	0.22	0.42
PARTIC EMIS-TOTAL	LB/HR	1.03	0.81	0.38	0.74
PART EMIS/WT PRD FD PTL	LB/TON	32.56665	13.33874	9.99677	18.63405
PART EMIS/WT PRD FD TTL	LB/TON	49.17180	30.42023	17.09906	32.23035
PERCENT EXCESS AIR		1089.9	1089.9	1089.9	1089.9

PLANT: B5BHI  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	3	AVERAGE
DATE OF RUN		06-07-73	06-07-73	06-07-73	
STACK AREA	FT2	1.000	1.000	1.000	
NET TIME OF RUN	MIN	64.0	64.0	64.0	
BAROMETRIC PRESSURE	IN.HG	29.90	29.90	29.90	
AVG ORIFICE PRES DROP	IN.H2O	3.225	4.108	5.844	
VOL DRY GAS-METER COND	DCF	59.10	65.72	77.85	
AVG GAS METER TEMP	DEG.F	95.5	100.2	103.6	
VOL DRY GAS-STD COND	DSCF	56.79	62.75	74.19	
TOTAL H2O COLLECTED	ML	52.5	89.7	92.0	
VOL H2O VAPOR-STD COND	SCF	2.49	4.25	4.36	
PERCENT MOISTURE BY VOL		4.2	6.3	5.6	
MOLE FRACTION DRY GAS		0.958	0.937	0.944	
PERCENT CO2 BY VOL, DRY		1.4	2.4	1.5	
PERCENT O2 BY VOL, DRY		18.7	17.4	18.2	
PERCENT CO BY VOL, DRY		0.2	0.2	0.2	
PERCENT N2 BY VOL, DRY		79.7	80.0	80.1	
MOLECULAR WT-DRY STK GAS		28.97	29.08	28.97	
MOLECULAR WT-STK GAS		28.51	28.38	28.36	
AVG STACK TEMPERATURE	DEG.F	281.0	331.0	370.0	
NET SAMPLING POINTS		1	1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.90	29.90	29.90	
AVG STACK GAS VELOCITY	FPS	30.011	34.976	44.339	36.442
STK FLOWRATE, DRY, STD CN	DSCFM	1233.	1316.	1603.	1384.
ACTUAL STACK FLOWRATE	ACFM	1801.	2099.	2660.	2187.
PERCENT ISOKINETIC		93.9	97.2	94.3	95.1
PARTICULATE WT-PARTIAL	MG	173.80	207.30	413.30	264.80
PARTICULATE WT-TOTAL	MG	358.50	511.20	824.90	564.87
PERC IMPINGER CATCH		51.5	59.4	49.9	53.6
PART. LOAD-PTL, STD CN	GR/DSCF	0.04713	0.05088	0.08579	0.06127
PART. LOAD-TTL, STD CN	GR/DSCF	0.09722	0.12546	0.17123	0.13131
PART. LOAD-PTL, STD CN @ 12% CO2		0.40400	0.25438	0.68634	0.44824
PART. LOAD-TTL, STD CN @ 12% CO2		0.83333	0.62731	1.36986	0.94350
PART. LOAD-PTL, STK CN	GR/ACF	0.03225	0.03188	0.05167	0.03860
PART. LOAD-TTL, STK CN	GR/ACF	0.06652	0.07861	0.10312	0.08275
PARTIC EMIS-PARTIAL	LB/HR	0.50	0.57	1.18	0.75
PARTIC EMIS-TOTAL	LB/HR	1.03	1.41	2.35	1.60
PART EMIS/WT PRD FD PTL	LB/TON	30.18433	10.62546	22.03433	20.94803
PART EMIS/WT PRD FD TTL	LB/TON	62.26169	26.20227	43.97803	44.14731
PERCENT EXCESS AIR		762.0	452.9	594.1	603.0

PLANT: C3MPI  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	3	AVERAGE
DATE OF RUN		05-24-73	05-24-73	05-24-73	
STACK AREA	FT2	1.000	1.000	1.000	
NET TIME OF RUN	MIN	56.0	56.0	56.0	
BAROMETRIC PRESSURE	IN.HG	29.63	29.63	29.63	
AVG ORIFICE PRES DROP	IN.H2O	2.493	1.640	1.601	
VOL DRY GAS-METER COND	DCF	44.48	34.85	36.57	
AVG GAS METER TEMP	DEG.F	86.3	85.7	90.5	
VOL DRY GAS-STD COND	DSCF	42.99	33.65	35.00	
TOTAL H2O COLLECTED	ML	22.4	21.3	45.5	
VOL H2O VAPOR-STD COND	SCF	1.06	1.01	2.16	
PERCENT MOISTURE BY VOL		2.4	2.9	5.8	
MOLE FRACTION DRY GAS		0.976	0.971	0.942	
PERCENT CO2 BY VOL, DRY		0.1	0.0	0.0	
PERCENT O2 BY VOL, DRY		20.2	20.3	20.3	
PERCENT CO BY VOL, DRY		0.0	0.0	0.0	
PERCENT N2 BY VOL, DRY		79.7	79.7	79.7	
MOLECULAR WT-DRY STK GAS		28.82	28.81	28.81	
MOLECULAR WT-STK GAS		28.56	28.50	28.18	
AVG STACK TEMPERATURE	DEG.F	100.0	157.0	173.0	
NET SAMPLING POINTS		1	1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.63	29.63	29.63	
AVG STACK GAS VELOCITY	FPS	11.107	16.370	17.273	14.917
STK FLOWRATE, DRY, STD CN	DSCFM	609.	811.	809.	743.
ACTUAL STACK FLOWRATE	ACFM	666.	982.	1036.	895.
PERCENT ISOKINETIC		92.4	96.6	100.7	96.6
PARTICULATE WT-PARTIAL	MG	179.80	193.90	339.90	237.87
PARTICULATE WT-TOTAL	MG	363.90	293.50	513.60	390.33
PERC IMPINGER CATCH		50.6	33.9	33.8	39.4
PART. LOAD-PTL, STD CN	GR/DSCF	0.06441	0.08875	0.14955	0.10090
PART. LOAD-TTL, STD CN	GR/DSCF	0.13037	0.13433	0.22598	0.16356
PART. LOAD-PTL, STD CN @ 12% CO2		7.72969*****	*****	*****	*****
PART. LOAD-TTL, STD CN @ 12% CO2		15.64423*****	*****	*****	*****
PART. LOAD-PTL, STK CN	GR/ACF	0.05887	0.07324	0.11672	0.08294
PART. LOAD-TTL, STK CN	GR/ACF	0.11915	0.11086	0.17636	0.13546
PARTIC EMIS-PARTIAL	LB/HR	0.34	0.62	1.04	0.66
PARTIC EMIS-TOTAL	LB/HR	0.68	0.93	1.57	1.06
PART EMIS/WT PRD FD PTL	LB/TON	19.22636	17.62706	24.70020	20.51787
PART EMIS/WT PRD FD TTL	LB/TON	38.91255	26.68150	37.32286	34.30562
PERCENT EXCESS AIR		2402.5*****	*****	*****	*****

PLANT: C4BPI  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		06-19-73	06-19-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	64.0	64.0	
BAROMETRIC PRESSURE	IN.HG	29.86	29.84	
AVG ORIFICE PRES DROP	IN.H2O	0.595	0.618	
VOL DRY GAS-METER COND	DCF	27.16	28.06	
AVG GAS METER TEMP	DEG.F	83.8	86.4	
VOL DRY GAS-STD COND	DSCF	26.45	27.18	
TOTAL H2O COLLECTED	ML	33.0	22.9	
VOL H2O VAPOR-STD COND	SCF	1.56	1.08	
PERCENT MOISTURE BY VOL		5.6	3.8	
MOLE FRACTION DRY GAS		0.944	0.962	
PERCENT CO2 BY VOL, DRY		1.3	1.3	
PERCENT O2 BY VOL, DRY		19.4	19.4	
PERCENT CO BY VOL, DRY		0.1	0.1	
PERCENT N2 BY VOL, DRY		79.2	79.2	
MOLECULAR WT-DRY STK GAS		28.98	28.98	
MOLECULAR WT-STK GAS		28.37	28.56	
AVG STACK TEMPERATURE	DEG.F	185.0	139.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.86	29.84	
AVG STACK GAS VELOCITY	FPS	12.764	10.582	11.673
STK FLOWRATE, DRY, STD CN	DSCFM	593.	539.	566.
ACTUAL STACK FLOWRATE	ACFM	766.	635.	700.
PERCENT ISOKINETIC		90.9	102.8	96.9
PARTICULATE WT-PARTIAL	MG	252.10	241.20	246.65
PARTICULATE WT-TOTAL	MG	344.10	324.10	334.10
PERC IMPINGER CATCH		26.7	25.6	26.2
PART. LOAD-PTL, STD CN	GR/DSCF	0.14678	0.13667	0.14173
PART. LOAD-TTL, STD CN	GR/DSCF	0.20035	0.18364	0.19200
PART. LOAD-PTL, STD CN @ 12% CO2		1.35491	1.26156	1.30824
PART. LOAD-TTL, STD CN @ 12% CO2		1.84937	1.69516	1.77227
PART. LOAD-PTL, STK CN	GR/ACF	0.11356	0.11588	0.11472
PART. LOAD-TTL, STK CN	GR/ACF	0.15500	0.15571	0.15536
PARTIC EMIS-PARTIAL	LB/HR	0.75	0.63	0.69
PARTIC EMIS-TOTAL	LB/HR	1.02	0.85	0.93
PART EMIS/WT PRD FP PTL	LB/TON	64.85725	33.21208	49.03465
PART EMIS/WT PRD FD TTL	LB/TON	88.52592	44.62704	66.57648
PERCENT EXCESS AIR		1241.3	1241.3	1241.3

PLANT: C4BPI...CONTINUED

LOCATION: NYC

OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	3	4	AVERAGE
DATE OF RUN		06-19-73	06-19-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	80.0	80.0	
BAROMETRIC PRESSURE	IN.HG	29.67	29.67	
AVG ORIFICE PRES DROP	IN.H2O	0.794	0.930	
VOL DRY GAS-METER COND	DCF	38.41	41.40	
AVG GAS METER TEMP	DEG.F	91.8	93.1	
VOL DRY GAS-STD COND	DSCF	36.64	39.42	
TOTAL H2O COLLECTED	ML	33.5	40.9	
VOL H2O VAPOR-STD COND	SCF	1.59	1.94	
PERCENT MOISTURE BY VOL		4.2	4.7	
MOLE FRACTION DRY GAS		0.958	0.953	
PERCENT CO2 BY VOL, DRY		1.3	1.2	
PERCENT O2 BY VOL, DRY		19.4	19.6	
PERCENT CO BY VOL, DRY		0.1	0.0	
PERCENT N2 BY VOL, DRY		79.2	79.2	
MOLECULAR WT-DRY STK GAS		28.98	28.98	
MOLECULAR WT-STK GAS		28.53	28.46	
AVG STACK TEMPERATURE	DEG.F	185.0	212.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.67	29.67	
AVG STACK GAS VELOCITY	FPS	12.769	14.552	13.661
STK FLOWRATE, DRY, STD CN	DSCFM	598.	651.	624.
ACTUAL STACK FLOWRATE	ACFM	766.	873.	820.
PERCENT ISOKINETIC		99.8	98.7	99.3
PARTICULATE WT-PARTIAL	MG	138.10	143.20	140.65
PARTICULATE WT-TOTAL	MG	226.30	268.40	247.35
PERC IMPINGER CATCH		39.0	46.6	42.8
PART. LOAD-PTL, STD CN	GR/DSCF	0.05804	0.05595	0.05699
PART. LOAD-TTL, STD CN	GR/DSCF	0.09510	0.10486	0.09998
PART. LOAD-PTL, STD CN @ 12% CO2	GR/DSCF	0.53573	0.55948	0.54760
PART. LOAD-TTL, STD CN @ 12% CO2	GR/DSCF	0.87788	1.04863	0.96326
PART. LOAD-PTL, STK CN	GR/ACF	0.04529	0.04167	0.04348
PART. LOAD-TTL, STK CN	GR/ACF	0.07422	0.07811	0.07616
PARTIC FMIS-PARTIAL	LB/HR	0.30	0.31	0.30
PARTIC EMIS-TOTAL	LB/HR	0.49	0.58	0.54
PART EMIS/WT PRD FD PTL	LB/TON	10.44212	10.26482	10.35347
PART EMIS/WT PRD FD TTL	LB/TON	17.11116	19.23935	18.17525
PERCENT EXCESS AIR		1241.3	1497.6	1369.5

PLANT: C5MPI  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	3	AVERAGE
DATE OF RUN		05-18-73	05-18-73	05-18-73	
STACK AREA	FT2	1.000	1.000	1.000	
NET TIME OF RUN	MIN	48.0	48.0	48.0	
BAROMETRIC PRESSURE	IN.HG	29.54	29.57	29.59	
AVG ORIFICE PRES DROP	IN.H2O	2.080	2.385	2.250	
VOL DRY GAS-METER COND	DCF	38.53	37.30	37.49	
AVG GAS METER TEMP	DEG.F	94.9	97.3	93.9	
VOL DRY GAS-STD COND	DSCF	36.51	35.26	35.67	
TOTAL H2O COLLECTED	ML	133.0	12.6.	12.0	
VOL H2O VAPOR-STD COND	SCF	6.30	0.60	0.57	
PERCENT MOISTURE BY VOL		14.7	1.7	1.6	
MOLE FRACTION DRY GAS		0.853	0.983	0.984	
PERCENT CO2 BY VOL, DRY		1.2	1.1	1.1	
PERCENT O2 BY VOL, DRY		19.2	19.1	19.2	
PERCENT CO BY VOL, DRY		0.1	0.1	0.1	
PERCENT N2 BY VOL, DRY		79.5	79.7	79.6	
MOLECULAR WT-DRY STK GAS		28.96	28.94	28.94	
MOLECULAR WT-STK GAS		27.35	28.76	28.77	
AVG STACK TEMPERATURE	DEG.F	115.0	118.0	112.0	
NET SAMPLING POINTS		1	1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.54	29.57	29.59	
AVG STACK GAS VELOCITY	FPS	19.562	18.181	16.400	18.048
STK FLOWRATE, DRY, STD CN	DSCFM	911.	972.	887.	923.
ACTUAL STACK FLOWRATE	ACFM	1174.	1091.	984.	1083.
PERCENT ISOKINETIC		108.9	98.6	109.2	105.6
PARTICULATE WT-PARTIAL	MG	49.10	56.30	71.90	59.10
PARTICULATE WT-TOTAL	MG	150.50	143.30	177.60	157.13
PERC IMPINGER CATCH		67.4	60.7	59.5	62.5
PART. LOAD-PTL, STD CN	GR/DSCF	0.02071	0.02459	0.03104	0.02545
PART. LOAD-TTL, STD CN	CR/DSCF	0.06348	0.06259	0.07668	0.06758
PART. LOAD-PTL, STD CN @ 12% CO2		0.20710	0.26825	0.33865	0.27133
PART. LOAD-TTL, STD CN @ 12% CO2		0.63480	0.68278	0.83649	0.71802
PART. LOAD-PTL, STK CN	GR/ACF	0.01606	0.02190	0.02798	0.02198
PART. LOAD-TTL, STK CN	GR/ACF	0.04922	0.05573	0.06911	0.05802
PARTIC EMIS-PARTIAL	LB/HR	0.16	0.20	0.24	0.20
PARTIC EMIS-TOTAL	LB/HR	0.50	0.52	0.58	0.53
PART EMIS/WT PRD FD PTL	LB/TON	11.14846	9.31128	9.44426	9.96800
PART EMIS/WT PRD FD TTL	LB/TON	34.17192	23.69992	23.32823	27.06668
PERCENT EXCESS AIR		1041.9	956.9	1027.1	1008.6

PLANT: CGBPI  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	3	AVERAGE
DATE OF RUN		06-21-73	06-21-73	06-21-73	
STACK AREA	FT <sup>2</sup>	1.000	1.000	1.000	
NET TIME OF RUN	MIN	64.0	64.0	64.0	
BAROMETRIC PRESSURE	IN.HG	29.56	29.54	29.50	
AVG ORIFICE PRES DROP	IN.H2O	1.001	0.880	0.860	
VOL DRY GAS-METER COND	DCF	35.32	33.59	32.59	
AVG GAS METER TEMP	DEG.F	97.7	100.6	92.3	
VOL DRY GAS-STD COND	DSCF	33.24	31.41	30.90	
TOTAL H2O COLLECTED	ML	32.0	32.0	36.0	
VOL H2O VAPOR-STD COND	SCF	1.52	1.52	1.71	
PERCENT MOISTURE BY VOL		4.4	4.6	5.2	
MOLE FRACTION DRY GAS		0.956	0.954	0.948	
PERCENT CO <sub>2</sub> BY VOL, DRY		1.9	1.6	1.7	
PERCENT O <sub>2</sub> BY VOL, DRY		18.3	18.0	18.5	
PERCENT CO BY VOL, DRY		0.1	0.1	0.1	
PERCENT N <sub>2</sub> BY VOL, DRY		79.7	80.3	79.7	
MOLECULAR WT-DRY STK GAS		29.04	28.98	29.01	
MOLECULAR WT-STK GAS		28.55	28.47	28.44	
AVG STACK TEMPERATURE	DEG.F	235.0	294.0	304.0	
NET SAMPLING POINTS		1	1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.56	29.54	29.50	
AVG STACK GAS VELOCITY	FPS	15.080	15.724	15.604	15.469
STK FLOWRATE, DRY, STD CN	DSCFM	652.	624.	607.	628.
ACTUAL STACK FLOWRATE	ACFM	905.	943.	936.	928.
PERCENT ISOKINETIC		103.9	102.5	103.7	103.4
PARTICULATE WT-PARTIAL	MG	239.00	184.40	176.40	199.93
PARTICULATE WT-TOTAL	MG	358.70	264.60	689.50	437.60
PERC IMPINGER CATCH		33.4	30.3	74.4	46.0
PART. LOAD-PTL, STD CN	GR/DSCF	0.11073	0.09040	0.08793	0.09635
PART. LOAD-TTL, STD CN	GR/DSCF	0.16619	0.12971	0.34369	0.21320
PART. LOAD-PTL, STD CN @ 12% CO <sub>2</sub>		0.69938	0.67796	0.62067	0.66600
PART. LOAD-TTL, STD CN @ 12% CO <sub>2</sub>		1.04965	0.97283	2.42602	1.48283
PART. LOAD-PTL, STK CN	GR/ACF	0.07973	0.05980	0.05695	0.06549
PART. LOAD-TTL, STK CN	GR/ACF	0.11965	0.08580	0.22259	0.14268
PARTIC EMIS-PARTIAL	LB/HR	0.62	0.48	0.46	0.52
PARTIC EMIS-TOTAL	LB/HR	0.93	0.69	1.79	1.14
PART EMIS/WT PRD FD PTL	LB/TON	15.86343	11.65863	13.85639	13.79282
PART EMIS/WT PRD FD TTL	LB/TON	23.80841	16.72925	54.16089	31.56616
PERCENT EXCESS AIR		653.9	552.4	712.1	639.5

PLANT: C7BPI  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	3	AVERAGE
DATE OF RUN		06-06-73	06-06-73	06-06-73	
STACK AREA	FT2	1.000	1.000	1.000	
NET TIME OF RUN	MIN	56.0	64.0	56.0	
BAROMETRIC PRESSURE	IN.HG	29.96	29.96	29.96	
AVG ORIFICE PRES DROP	IN.H2O	2.570	2.860	2.160	
VOL DRY GAS-METER COND	DCF	45.35	50.95	32.97	
AVG GAS METER TEMP	DEG.F	82.8	95.1	92.3	
VOL DRY GAS-STD COND	DSCF	44.62	49.04	31.85	
TOTAL H2O COLLECTED	ML	58.5	44.0	34.3	
VOL H2O VAPOR-STD COND	SCF	2.77	2.09	1.63	
PERCENT MOISTURE BY VOL		5.9	4.1	4.9	
MOLE FRACTION DRY GAS		0.941	0.959	0.951	
PERCENT CO2 BY VOL, DRY		1.4	1.0	1.0	
PERCENT O2 BY VOL, DRY		16.4	17.6	18.4	
PERCENT CO BY VOL, DRY		0.0	0.4	0.0	
PERCENT N2 BY VOL, DRY		82.2	81.0	80.6	
MOLECULAR WT-DRY STK GAS		28.88	28.86	28.90	
MOLECULAR WT-STK GAS		28.24	28.42	28.37	
AVG STACK TEMPERATURE	DEG.F	216.0	172.0	198.0	
NET SAMPLING POINTS		1	1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.96	29.96	29.96	
AVG STACK GAS VELOCITY	FPS	23.537	22.743	21.140	22.473
STK FLOWRATE, DRY, STD CN	DSCFM	1044.	1099.	973.	1039.
ACTUAL STACK FLOWRATE	ACFM	1412.	1365.	1268.	1348.
PERCENT ISOKINETIC		99.5	90.9	76.2	88.9
PARTICULATE WT-PARTIAL	MG	885.00	299.90	161.00	448.63
PARTICULATE WT-TOTAL	MG	1389.10	743.30	438.50	856.97
PERC IMPINGER CATCH		36.3	59.7	63.3	53.1
PART. LOAD-PTL, STD CN	GR/DSCF	0.30547	0.09417	0.07786	0.15917
PART. LOAD-TTL, STD CN	GR/DSCF	0.47947	0.23340	0.21205	0.30831
PART. LOAD-PTL, STD CN @ 12% CO2		2.61831	1.13006	0.93428	1.56088
PART. LOAD-TTL, STD CN @ 12% CO2		4.10970	2.80085	2.54460	3.15172
PART. LOAD-PTL, STK CN	GR/ACF	0.22561	0.07579	0.05970	0.12037
PART. LOAD-TTL, STK CN	GR/ACF	0.35411	0.18785	0.16259	0.23485
PARTIC FMIS-PARTIAL	LB/HR	2.73	0.89	0.65	1.42
PARTIC FMIS-TOTAL	LB/HR	4.29	2.20	1.77	2.75
PART FMIS/WT PRO FD PTL	LB/TON	58.13638	20.02868	20.61612	33.12704
PART FMIS/WT PRO FD TTL	LB/TON	91.25113	51.12805	56.15016	66.17644
PERCENT EXCESS AIR		309.4	436.7	639.2	461.8

PLANT: C8RPI  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	3	AVERAGE
DATE OF RUN		06-19-73	06-19-73	06-19-73	
STACK AREA	FT <sup>2</sup>	1.000	1.000	1.000	
NET TIME OF RUN	MIN	56.0	56.0	56.0	
BAROMETRIC PRESSURE	IN.HG	29.84	29.84	29.84	
AVG ORIFICE PRES DROP	IN.H2O	1.820	2.800	1.875	
VOL DRY GAS-METER COND	DCF	35.50	32.50	32.50	
AVG GAS METER TEMP	DEG.F	104.4	104.3	102.1	
VOL DRY GAS-STD COND	DSCF	33.39	30.65	30.69	
TOTAL H2O COLLECTED	ML	22.7	24.0	23.8	
VOL H2O VAPOR-STD COND	SCF	1.08	1.14	1.13	
PERCENT MOISTURE BY VOL		3.1	3.6	3.5	
MOLE FRACTION DRY GAS		0.969	0.964	0.965	
PERCENT CO <sub>2</sub> BY VOL, DRY		1.3	0.4	1.5	
PERCENT O <sub>2</sub> BY VOL, DRY		19.4	20.3	19.0	
PERCENT CO BY VOL, DRY		0.0	0.0	0.0	
PERCENT N <sub>2</sub> BY VOL, DRY		79.3	79.3	79.5	
MOLECULAR WT-DRY STK GAS		28.98	28.88	29.00	
MOLECULAR WT-STK GAS		28.64	28.49	28.61	
AVG STACK TEMPERATURE	DEG.F	184.0	177.0	153.0	
NET SAMPLING POINTS		1	1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.84	29.84	29.84	
AVG STACK GAS VELOCITY	FPS	15.178	15.326	12.406	14.304
STK FLOWRATE, DRY, STD CN	DSCFM	724.	736.	619.	693.
ACTUAL STACK FLOWRATE	ACFM	911.	920.	744.	858.
PERCENT ISOKINETIC		107.4	97.0	115.5	106.6
PARTICULATE WT-PARTIAL	MG	118.50	147.00	154.60	140.03
PARTICULATE WT-TOTAL	MG	214.90	233.00	256.70	234.87
PERC IMPINGER CATCH		44.9	36.9	39.8	40.5
PART. LOAD-PTL,STD CN	GR/DSCF	0.05466	0.07386	0.07757	0.06870
PART. LOAD-TTL,STD CN	GR/DSCF	0.09912	0.11707	0.12879	0.11500
PART. LOAD-PTL,STD CN @ 12% CO <sub>2</sub>		0.50452	2.21587	0.62054	1.11364
PART. LOAD-TTL,STD CN @ 12% CO <sub>2</sub>		0.91494	3.51223	1.03035	1.81917
PART. LOAD-PTL,STK CN	GR/ACF	0.04343	0.05905	0.06446	0.05565
PART. LOAD-TTL,STK CN	GR/ACF	0.07875	0.09360	0.10704	0.09313
PARTIC EMIS-PARTIAL	LB/HR	0.34	0.47	0.41	0.41
PARTIC EMIS-TOTAL	LB/HR	0.62	0.74	0.68	0.68
PART EMIS/WT PRD FD PTL	LB/TON	10.76733	22.71767	20.57674	18.02057
PART EMIS/WT PRD FD TTL	LB/TON	19.52657	36.00829	34.16591	29.90024
PERCENT EXCESS AIR		1263.7	3195.9	955.7	1805.1

PLANT: C9MPI  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	3	AVERAGE
DATE OF RUN		06-20-73	06-20-73	06-20-73	
STACK AREA	FT <sup>2</sup>	1.000	1.000	1.000	
NET TIME OF RUN	MIN	56.0	56.0	56.0	
BAROMETRIC PRESSURE	IN.HG	29.86	29.86	28.86	
AVG ORIFICE PRES DROP	IN.H2O	1.000	1.321	1.632	
VOL DRY GAS-METER COND	DCF	30.42	35.02	39.92	
AVG GAS METER TEMP	DEG.F	83.2	97.6	107.3	
VOL DRY GAS-STD COND	DSCF	29.69	33.31	36.11	
TOTAL H2O COLLECTED	ML	23.0	30.0	34.2	
VOL H2O VAPOR-STD COND	SCF	1.09	1.42	1.62	
PERCENT MOISTURE BY VOL		3.5	4.1	4.3	
MOLE FRACTION DRY GAS		0.965	0.959	0.957	
PERCENT CO <sub>2</sub> BY VOL, DRY		0.5	0.9	1.4	
PERCENT O <sub>2</sub> BY VOL, DRY		20.1	19.8	19.3	
PERCENT CO BY VOL, DRY		0.0	0.0	0.0	
PERCENT N <sub>2</sub> BY VOL, DRY		79.4	79.3	79.3	
MOLECULAR WT-DRY STK GAS		28.88	28.94	29.00	
MOLECULAR WT-STK GAS		28.50	28.49	28.52	
AVG STACK TEMPERATURE	DEG.F	150.0	188.0	205.0	
NET SAMPLING POINTS		1	1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.86	29.86	28.86	
AVG STACK GAS VELOCITY	FPS	13.288	17.488	19.256	16.678
STK FLOWRATE, DRY, STD CN	DSCFM	667.	821.	850.	779.
ACTUAL STACK FLOWRATE	ACFM	797.	1049.	1155.	1001.
PERCENT ISOKINETIC		103.7	94.5	98.9	99.0
PARTICULATE WT-PARTIAL	MG	245.50	109.60	85.40	146.83
PARTICULATE WT-TOTAL	MG	399.50	204.10	206.90	270.17
PERC IMPINGER CATCH		38.5	46.3	58.7	47.9
PART. LOAD-PTL,STD CN	GR/DSCF	0.12734	0.05066	0.03642	0.07147
PART. LOAD-TTL,STD CN	GR/DSCF	0.20722	0.09435	0.08823	0.12993
PART. LOAD-PTL,STD CN @ 12% CO <sub>2</sub>	GR/DSCF	3.05620	0.67552	0.31214	1.34795
PART. LOAD-TTL,STD CN @ 12% CO <sub>2</sub>	GR/DSCF	4.97332	1.25797	0.75622	2.32917
PART. LOAD-PTL,STK CN	GR/ACF	0.10642	0.03963	0.02677	0.05761
PART. LOAD-TTL,STK CN	GR/ACF	0.17318	0.07380	0.06486	0.10395
PARTIC EMIS-PARTIAL	LB/HR	0.73	0.36	0.27	0.45
PARTIC EMIS-TOTAL	LB/HR	1.18	0.66	0.64	0.83
PART EMIS/WT PRD FD PTL	LB/TON	31.63945	11.14498	7.26787	16.68410
PART EMIS/WT PRD FD TTL	LB/TON	51.48659	20.75447	17.60797	29.94964
PERCENT EXCESS AIR		2332.9	1744.2	1180.3	1752.5

PLANT: C10MPI  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		05-21-73	05-21-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	40.0	40.0	
BAROMETRIC PRESSURE	IN.HG	29.50	29.50	
AVG ORIFICE PRES DROP	IN.H2O	3.700	2.750	
VOL DRY GAS-METER COND	DCF	41.13	34.78	
AVG GAS METER TEMP	DEG.F	92.0	95.8	
VOL DRY GAS-STD COND	DSCF	39.29	32.92	
TOTAL H2O COLLECTED	ML	40.0	36.0	
VOL H2O VAPOR-STD COND	SCF	1.90	1.71	
PERCENT MOISTURE BY VOL		4.6	4.9	
MOLE FRACTION DRY GAS		0.954	0.951	
PERCENT CO2 BY VOL, DRY		1.0	1.0	
PERCENT O2 BY VOL, DRY		19.6	19.6	
PERCENT CO BY VOL, DRY		0.1	0.1	
PERCENT N2 BY VOL, DRY		79.3	79.3	
MOLECULAR WT-DRY STK GAS		28.94	28.94	
MOLECULAR WT-STK GAS		28.44	28.40	
AVG STACK TEMPERATURE	DEG.F	199.0	187.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HC	29.50	29.50	
AVG STACK GAS VELOCITY	FPS	16.970	14.480	15.725
STK FLOWRATE, DRY, STD CN	DSCFM	770.	667.	719.
ACTUAL STACK FLOWRATE	ACFM	1018.	869.	944.
PERCENT ISOKINETIC		93.6	90.5	92.0
PARTICULATE WT-PARTIAL	MG	129.60	330.00	229.80
PARTICULATE WT-TOTAL	MG	241.40	481.70	361.55
PERC IMPINGER CATCH		46.3	31.5	38.9
PART. LOAD-PTL, STD CN	GR/DSCF	0.05080	0.15438	0.10259
PART. LOAD-TTL, STD CN	GR/DSCF	0.09463	0.22535	0.15999
PART. LOAD-PTL, STD CN @ 12% CO2		0.60962	1.85261	1.23111
PART. LOAD-TTL, STD CN @ 12% CO2		1.13551	2.70424	1.91988
PART. LOAD-PTL, STK CN	GR/ACF	0.03840	0.11845	0.07843
PART. LOAD-TTL, STK CN	GR/ACF	0.07152	0.17290	0.12221
PARTIC EMIS-PARTIAL	LB/HR	0.34	0.88	0.61
PARTIC EMIS-TOTAL	LB/HR	0.62	1.29	0.96
PART EMIS/WT PRD FD PTL	LB/TON	11.17695	27.15761	19.16727
PART EMIS/WT PRD FD TTL	LB/TON	20.81879	39.64186	30.23032
PERCENT EXCESS AIR		1411.4	1411.4	1411.4

PLANT: U1BPI  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	3	AVERAGE
DATE OF RUN		05-26-73	05-26-73	05-26-73	
STACK AREA	FT2	1.000	1.000	1.000	
NET TIME OF RUN	MIN	60.0	56.0	62.0	
BAROMETRIC PRESSURE	IN.HG	30.10	30.10	30.10	
AVG ORIFICE PRES DROP	IN.H2O	21.870	2.731	2.525	
VOL DRY GAS-METER COND	DCF	43.97	46.98	46.85	
AVG GAS METER TEMP	DEG.F	74.9	81.9	79.8	
VOL DRY GAS-STD COND	DSCF	46.16	46.52	46.54	
TOTAL H2O COLLECTED	ML	47.2	33.7	35.5	
VOL H2O VAPOR-STD COND	SCF	2.24	1.60	1.68	
PERCENT MOISTURE BY VOL		4.6	3.3	3.5	
MOLE FRACTION DRY GAS		0.954	0.967	0.965	
PERCENT CO2 BY VOL, DRY		1.8	1.8	1.8	
PERCENT O2 BY VOL, DRY		18.2	18.2	18.2	
PERCENT CO BY VOL, DRY		0.1	0.1	0.1	
PERCENT N2 BY VOL, DRY		79.9	79.9	79.9	
MOLECULAR WT-DRY STK GAS		29.02	29.02	29.02	
MOLECULAR WT-STK GAS		28.51	28.65	28.63	
AVG STACK TEMPERATURE	DEG.F	199.0	187.0	225.0	
NET SAMPLING POINTS		1	1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.10	30.10	30.10	
AVG STACK GAS VELOCITY	FPS	20.015	23.327	22.191	21.844
STK FLOWRATE, DRY, STD CN	DSCFM	926.	1115.	1000.	1014.
ACTUAL STACK FLOWRATE	ACFM	1201.	1400.	1331.	1311.
PERCENT ISOKINETIC		108.3	97.2	97.9	101.1
PARTICULATE WT-PARTIAL	MG	557.60	134.00	178.20	289.93
PARTICULATE WT-TOTAL	MG	859.60	344.50	312.70	505.60
PERC IMPINGER CATCH		35.1	61.1	43.0	46.4
PART. LOAD-PTL, STD CN	GR/DSCF	0.18603	0.04436	0.05896	0.09645
PART. LOAD-TTL, STD CN	GR/FSCF	0.28678	0.11404	0.10346	0.10809
PART. LOAD-PTL, STD CN @ 12% CO2		1.24017	0.29572	0.39308	0.64299
PART. LOAD-TTL, STD CN @ 12% CO2		1.91185	0.76026	0.68976	1.12063
PART. LOAD-PTL, STK CN	GR/ACF	0.14344	0.03531	0.04426	0.07434
PART. LOAD-TTL, STK CN	GR/ACF	0.22113	0.09079	0.07766	0.12980
PARTIC EMIS-PARTIAL	LB/HR	1.48	0.42	0.51	0.80
PARTIC EMIS-TOTAL	LB/HR	2.28	1.09	0.89	1.42
PART EMIS/WT PRD FP PTL	LB/TON	41.03618	9.11591	9.90958	20.02055
PART EMIS/WT PRD FD TTL	LB/TON	63.26166	23.43604	17.38901	34.69556
PERCENT EXCESS AIR		616.6	616.6	616.6	616.6

PLANT: U2MPI  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		06-26-73	06-26-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	56.0	64.0	
BAROMETRIC PRESSURE	IN.HG	30.10	30.10	
AVG ORIFICE PRFS DROP	IN.H2O	1.590	0.826	
VOL DRY GAS-METER COND	DCF	37.61	33.49	
AVG GAS METER TEMP	DEG.F	96.9	97.0	
VOL DRY GAS-STD COND	DSCF	36.14	32.12	
TOTAL H2O COLLECTED	ML	37.1	36.8	
VOL H2O VAPOR-STD COND	SCF	1.76	1.74	
PERCENT MOISTURE BY VOL		4.6	5.2	
MOLE FRACTION DRY GAS		0.954	0.948	
PERCENT CO2 BY VOL, DRY		1.5	1.5	
PERCENT O2 BY VOL, DRY		19.0	19.0	
PERCENT CO BY VOL, DRY		0.1	0.1	
PERCENT N2 BY VOL, DRY		79.4	79.4	
MOLECULAR WT-DRY STK GAS		29.00	29.00	
MOLECULAR WT-STK GAS		28.49	28.43	
AVG STACK TEMPERATURE	DEG.F	142.0	160.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	30.10	30.10	
AVG STACK GAS VELOCITY	FPS	17.006	11.561	14.284
STK FLOWRATE, DRY, STD CN	DSCFM	862.	566.	714.
ACTUAL STACK FLOWRATE	ACFM	1020.	694.	857.
PERCENT ISOKINETIC		97.7	115.7	106.7
PARTICULATE WT-PARTIAL	MC	134.20	60.80	97.50
PARTICULATE WT-TOTAL	MG	240.20	118.30	179.25
PERC IMPINGER CATCH		44.1	48.6	46.4
PART. LOAD-PTL, STD CN	GR/DSCF	0.05719	0.02915	0.04317
PART. LOAD-TTL, STD CN	GR/DSCF	0.10236	0.05672	0.07954
PART. LOAD-PTL, STD CN @ 12% CO2		0.45753	0.23322	0.34537
PART. LOAD-TTL, STD CN @ 12% CO2		0.81891	0.45379	0.63635
PART. LOAD-PTL, STK CN	GR/ACF	0.04827	0.02376	0.03601
PART. LOAD-TTL, STK CN	GR/ACF	0.08639	0.04623	0.06631
PARTIC EMIS-PARTIAL	LB/HR	0.42	0.14	0.28
PARTIC EMIS-TOTAL	LB/HR	0.76	0.28	0.52
PART EMIS/WT PRD FD PTL	LB/TON	13.84804	5.33422	9.59113
PART EMIS/WT PRD FD TTL	LB/TON	24.78613	10.37892	17.58252
PERCENT EXCESS AIR		942.0	942.0	942.0

PLANT: U3MPI  
 LOCATION: NYC  
 OPERATOR: FRI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	3	2	AVERAGE
DATE OF RUN		05-30-73	05-30-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	56.0	56.0	
BAROMETRIC PRESSURE	IN.HG	29.60	29.60	
AVG ORIFICE PRES DROP	IN.H2O	3.956	3.733	
VOL DRY GAS-METER COND	DGF	60.65	59.00	
AVG GAS METER TEMP	DEG.F	109.0	108.8	
VOL DRY GAS-STD COND	DSCF	56.43	54.88	
TOTAL H2O COLLECTED	ML	79.6	81.4	
VOL H2O VAPOR-STD COND	SCF	3.77	3.86	
PERCENT MOISTURE BY VOL		6.3	6.6	
MOLE FRACTION DRY GAS		0.937	0.934	
PERCENT CO2 BY VOL, DRY		1.8	1.8	
PERCENT O2 BY VOL, DRY		17.6	17.6	
PERCENT CO BY VOL, DRY		0.1	0.1	
PERCENT N2 BY VOL, DRY		80.5	80.5	
MOLECULAR WT-DRY STK GAS		28.99	28.99	
MOLECULAR WT-STK GAS		28.30	28.27	
AVG STACK TEMPERATURE	DEG.F	153.0	144.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.60	29.60	
AVG STACK GAS VELOCITY	FPS	27.964	26.893	27.429
STK FLOWRATE, DRY, STD CN	DSCFM	1345.	1308.	1327.
ACTUAL STACK FLOWRATE	ACFM	1678.	1614.	1646.
PERCENT ISOKINETIC		97.7	97.7	97.7
PARTICULATE WT-PARTIAL	MG	48.40	77.90	63.15
PARTICULATE WT-TOTAL	MG	119.60	153.80	136.70
PERC IMPINGER CATCH		59.5	49.3	54.4
PART. LOAD-PTL,STD CN	GR/DSCF	0.01321	0.02186	0.01753
PART. LOAD-TTL,STD CN	GR/DSCF	0.03264	0.04316	0.03790
PART. LOAD-PTL,STD CN @ 12% CO2		0.08806	0.14574	0.11690
PART. LOAD-TTL,STD CN @ 12% CO2		0.21760	0.28774	0.25267
PART. LOAD-PTL,STK CN	GR/ACF	0.01058	0.01772	0.01415
PART. LOAD-TTL,STK CN	GR/ACF	0.02615	0.03498	0.03056
PARTIC EMIS-PARTIAL	LB/HR	0.15	0.25	0.20
PARTIC EMIS-TOTAL	LB/HR	0.38	0.48	0.43
PART EMIS/WT PRD FD PTL	LB/TON	2.67141	9.25205	5.96173
PART EMIS/WT PRD FP TTL	LB/TON	6.60126	18.26657	12.43391
PERCENT EXCESS AIR		474.1	474.1	474.1

PLANT: U4BHI  
 LOCATION: NYC  
 OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS	1	2	AVERAGE
DATE OF RUN		06-29-73	06-29-73	
STACK AREA	FT2	1.000	1.000	
NET TIME OF RUN	MIN	64.0	64.0	
BAROMETRIC PRESSURE	IN.HG	29.88	29.88	
AVG ORIFICE PRES DROP	IN.H2O	0.940	0.840	
VOL DRY GAS-METER COND	DCF	32.10	30.55	
AVG GAS METER TEMP	DEG.F	102.4	106.4	
VOL DRY GAS-STD COND	DSCF	30.27	28.61	
TOTAL H2O COLLECTED	ML	51.0	52.0	
VOL H2O VAPOR-STD COND	SCF	2.42	2.46	
PERCENT MOISTURE BY VOL		7.4	7.9	
MOLE FRACTION DRY GAS		0.926	0.921	
PERCENT CO2 BY VOL, DRY		1.9	1.9	
PERCENT O2 BY VOL, DRY		18.2	18.2	
PERCENT CO BY VOL, DRY		0.1	0.1	
PERCENT N2 BY VOL, DRY		79.8	79.8	
MOLECULAR WT-DRY STK GAS		29.03	29.03	
MOLECULAR WT-STK GAS		28.22	28.16	
AVG STACK TEMPERATURE	DEG.F	147.0	128.0	
NET SAMPLING POINTS		1	1	
STACK PRESSURE, ABSOLUTE	IN.HG	29.88	29.88	
AVG STACK GAS VELOCITY	FPS	29.865	27.474	28.670
STK FLOWRATE, DRY, STD CN	DSCFM	1447.	1366.	1406.
ACTUAL STACK FLOWRATE	ACFM	1792.	1648.	1720.
PERCENT ISOKINETIC		95.9	96.0	96.0
PARTICULATE WT-PARTIAL	MG	65.20	64.50	64.85
PARTICULATE WT-TOTAL	MG	102.60	98.30	100.45
PERC IMPINGER CATCH		36.5	34.4	35.4
PART. LOAD-PTL, STD CN	GR/DSCF	0.03317	0.03472	0.03395
PART. LOAD-TTL, STD CN	GR/DSCF	0.05220	0.05292	0.05256
PART. LOAD-PTL, STD CN @ 12% CO2		0.20949	0.21931	0.21440
PART. LOAD-TTL, STD CN @ 12% CO2		0.32966	0.33423	0.33194
PART. LOAD-PTL, STK CN	GR/ACF	0.02676	0.02875	0.02776
PART. LOAD-TTL, STK CN	GR/ACF	0.04211	0.04382	0.04297
PARTIC EMIS-PARTIAL	LB/HR	0.41	0.41	0.41
PARTIC EMIS-TOTAL	LB/HR	0.65	0.62	0.63
PART EMIS/WT PRD FD PTL	LB/TON	6.47707	5.56880	6.02293
PART EMIS/WT PRD FD TTL	LB/TON	10.19245	8.48702	9.33973
PERCENT EXCESS AIR		622.2	622.2	622.2

## APPENDIX C

### Stack Testing Personnel

Stack Testing Personnel

Michael Kormanik	Kevin Hafinin
Anthony Cava	David Jones
Ellis Johnson	James McGarry
Carlos Marales	Richard Foley
Kenneth Cabiness	Roger McCabe
Robert Baker	Dominic Buccilli
Kenneth Moore	Marsden Chen
Thomas Card	Neil Isabelle
Theodore Hudson	Burton Pine
Arthur Fossa	Michael Moore
William Hartenstein	Bruce Neddo
Wayne Roberts	Donald Daoust
Charles Wylie	David Wazenkewitz
Jerome Hatch	Henry Moore
David Prosser	Patrick Balogna
Charles Chernoff	

**APPENDIX D**

**Fuel Analysis**

## FUEL ANALYSIS

<u>Identity</u>	<u>API Gravity</u>	<u>Specific Gravity</u>		<u>Viscosity @ 100°F SUS</u>	<u>% Ash</u>	<u>% Sulfur</u>	<u>% Carbon</u>	<u>BTU/Pound</u>
		<u>60/60°F</u>	<u>15/4°C</u>					
A1BHB 5-22-73	25.5	0.9013	0.9008	142.6	0.003	0.24	86.03	19,240
A10BHB	25.2	0.9030	0.9025	186.8	0.002	0.27	*	19,260
C1BHB	25.1	0.9036	0.9031	160.0	0.006	0.29	*	19,220
A3BHB	25.4	0.9018	0.9014	142.8	0.003	0.29	*	19,275
B5BHB	20.6	0.9303	0.9298	378.0	1.03	0.43	85.12	18,890
U4MPB 5-11-73	21.1	0.9273	0.9267	282.0	0.59	0.39	*	18,930
B4MPB 3-30-73 F-73-000-024	25.1	0.9036	0.9031	147.3	0.003	0.30	*	19,290
U3MPB 4-18-73 F-73-000-029	25.2	0.9030	0.9025	113.0	0.003	0.29	85.24	19,245
A8MPB F-73-000-030	24.0	0.9100	0.9095	309.0	0.009	0.36	*	19,200
A9MPB F-73-000-031	24.5	0.9065	0.9060	213.0	0.007	0.39	*	19,220
A2BPB F-73-000-033	25.5	0.9013	0.9008	122.6	0.003	0.32	*	19,185

D-2

<u>Identity</u>	<u>API Gravity</u>	<u>Specific Gravity</u> 60/60°F      15/4°C		<u>Viscosity</u> @ 100°F SUS	<u>% Ash</u>	<u>% Sulfur</u>	<u>% Carbon</u>	<u>BTU/Pound</u>
B4MPB 4-3-73 F-73-000-034	25.2	0.9030	0.9025	147.3	0.003	0.36	*	19,755
D4BPB F-73-000-037	25.0	0.9042	0.9037	139.5	0.001	0.31	*	19,175
U1BPB 5-27-73 F-73-000-039	24.7	0.9059	0.9054	261.0	0.004	0.29	*	19,240
U5BPB 5-22-73 F-73-000-040	24.5	0.9071	0.9065	286.0	0.003	0.26	*	19,100
A6BPB 5-7-73 F-73-000-045	25.3	0.9024	0.9019	110.2	0.005	0.31	*	19,120
U2MPB 4-20-73 F-73-000-046	25.6	0.9007	0.9002	91.1	0.004	0.31	*	19,100
A7MPB 4-13-73 F-73-000-047	25.8	0.8996	0.8991	66.5	0.004	0.32	*	19,135
B2BPB 73 SM 544	N.A.	N.A.	N.A.	169.8	0.004	0.33	*	19,170
B1MPB 73 SM 546	N.A.	N.A.	N.A.	82.5	0.004	0.35	*	19,440

D-3

Identity	API Gravity	Specific Gravity		Viscosity @ 100°F SUS	% Ash	% Sulfur	% Carbon	BTU/ Pound
		60/60°F	15/40°C					
A4MPB 73 SM 548	N.A.	N.A.	N.A.	126.6	0.004	0.35	*	19,100
B3BPB 73 SM 586	24.8	0.9053	0.9048	173.1	0.009	0.29	*	19,230
D3MPB 73 SM 588	26.3	0.8967	0.8962	64.5	0.005	0.34	85.86	19,000
D1MPB 3-27-73	N.A.	N.A.	N.A.	N.A.	N.A.	0.33	*	19,278
D2MPB 3-22-73	N.A.	N.A.	N.A.	N.A.	N.A.	0.33	*	19,256
A5MPB 3-21-73	N.A.	N.A.	N.A.	N.A.	N.A.	0.96	*	19,073

\*The carbon content at these sites is assumed to be 85.4%

APPENDIX E

Sample Forms

BOILER EQUIPMENT CHECKLIST

NYC Certificate of Operation?  Yes  No

Boiler: Mfr. COKEFAIR

Model No. \_\_\_\_\_

Steel or  Cast Iron

Approx. Age 50

Steam or  Hot Water

Steam Pressure 5 PSI Gage

No. of Flue Passes \_\_\_\_\_

Furnace Volume \_\_\_\_\_ cu. ft.

Gross Output \_\_\_\_\_ BTUH \_\_\_\_\_ BHP

Burner: Mfr. PETRO

Model No. G AIT

Operation:  on-off

stepped

modulating

Type:  Horizontal Rotary Cup

Air Atomizer

Steam Atomizer

Other

Max. Firing Rate 35 GPH

Primary Oil Heater:  Yes

No Fire Tube yes  no \_\_\_\_\_

Secondary Oil Heater:  Yes

No Water Tube yes  no \_\_\_\_\_

Combustion Controller:  Yes

No Sectional yes  no \_\_\_\_\_

Sequential Draft Controller:  Yes

No

Barometric Damper:  Yes

No

Windbox:  Yes  No

Ventilation Louvre(s)  Yes  No area \_\_\_\_\_ sq. in.

in boiler room:

open door(s)  Yes  No area \_\_\_\_\_ sq. in.

open window(s)  Yes  No area \_\_\_\_\_ sq. in.

fresh air duct  Yes  No area \_\_\_\_\_ sq. in.

fresh air fan  Yes  No

Chimney Height: 13 ft.

Condition of Equipment - Remarks

Soot Blowing: **NONE**

Method:  Compressed Air  psig.

Steam  psig.

Shot

Frequency  Per Day

Time Duration  minutes

Type of Soot Blower:  Stationary  Rotating

Manual Retracting

Automatic Retracting

Other

No. of Boilers

Total Boiler Firing Rate  gph

Provide rough sketch of internal construction of boiler with overal dimensions:

Access and Services

1. Is there a source of electricity? YES, direct line or general use?  
Is fuse box accessible? YES Amperage: \_\_\_\_\_
2. Are wall plugs available for intercom, roof and boiler room? NO  
Can wired phones be used, roof to boiler room? YES NO
3. How will equipment be raised? Elevator, stairs, roof pulley, dumbwaiter?
4. Is parking generally available? NO
5. How many floors in the building: 6

Remarks \_\_\_\_\_

Boiler Room

1. Is stack used only for boiler? YES  
Other equipment exhaust to stack (other boilers, incinerators, water heaters, etc.) NONE
2. Must one or two oil meters be installed? 2
3. Where and how is burner recycled (started) HEAT TIMER
4. Is serviceman needed to operate boiler? NO
5. What is firing rate (GPM) of burner? 25 Approx.
6. Is breeching accessible? YES Is  $\frac{1}{4}$ " hole available? NO  
Can hole be drilled easily? YES
7. Is soot blowing utilized? NO How many times/day \_\_\_\_\_  
How long is each blowperiod? \_\_\_\_\_ When? \_\_\_\_\_
8. Can stack test be performed in basement? NO ?  
If yes, provide details or sketch.

Remarks \_\_\_\_\_

## BOILER ROOM DATA

CLOCK TIME	OIL METER READING - GAL.		Δ GAL.	BACHARACH	AFTER	OIL SUPPLY TEMP °F	ROOM TEMP
	METER NO.	METER NO.		INSTRUMENT NO.	FIRE BOX		
	SUPPLY	RETURN		SMOKE NO.	TEMP °F		
START	9:42	999 1/2	346 7.15				
	9:47				#1	350	88
	9:52				#1	380	88
	9:59				#1	410	88
	10:04				#1	410	88
	10:09				#1	410	88
	10:15	END	344 8.75	1 <sup>ST</sup> HALF OF TEST	2		
START	10:55	999 1/2	344 9.				
	11:00				#1	390	86
	11:05				#1	400	86
	11:10				#1	405	87
	11:15				#1	410	88
	11:20				#1	410	88
	11:25				#1	415	88
	11:55	END	346 1.	2 <sup>ND</sup> HALF OF TEST	2 (1 <sup>ST</sup> HALF OF TEST 1)		
START	12:00				#1	380	88
	12:05				#1	390	88
	12:10				#1	410	88
	12:05				#1	410	88
	12:20				#1	410	88
	12:25				#1	405	88
	12:30				#1	407	88
	346 1.					140	
	348 3.					140	
	END 2 <sup>ND</sup> HALF OF TEST 1						
TOTAL TIME				TOTAL GAL.	AVERAGE		AVERAGE
					#1		

PARTICULATE FIELD DATA

Plan \_\_\_\_\_  
 Loca: \_\_\_\_\_  
 Run No. 1  
 Date 4/4/73  
 Operator C. MORALES Filter No. START 10:55  
 Meter Box No. 2 Condensate CONDENSATE 8.7 GMS  
 Sample Box No.  41.0 ML  
 Meter  $\Delta H$  1.97 49.7 ML H<sub>2</sub>O  
 C Factor 1.06  
 Ambient Temp  $^{\circ}$ F 56  
 Bar. Press "Hg 29.71  
 Assumed Moisture % 6  
 Heater Box Setting,  $^{\circ}$ F   
 Probe Tip Dia., In. 1/4  
 Probe Length 3'  
 Probe Heater Setting   
 Avg.  $\Delta P$  \_\_\_\_\_ Avg.  $\Delta H$  \_\_\_\_\_

E 6	Start	Point	Sampling Time	Dry Gas Meter CF	Pitot $\Delta P$	Orifice $\Delta H$	Dry Gas Temp		Vacuum "Hg	Impinger Temp $^{\circ}$ F	Stack Temp $^{\circ}$ F	Stack Gas Velocity FPS
							In	Out				
10:55	1	10:55	268.20	.22	.657	78	75	/				
		11:00	270.31	.24	.8	82	76	/			275	
		11:05	273.39	.24	.8	88	78	/			280	
		11:10	275.79	.24	.8	92	78	/			280	
		11:15	278.56	.33	1.1	98	78	/			280	
		11:20	281.45	.33	1.1	102	80	/			280	
2	2	11:25	284.32	.33	1.1	106	92	/			280	
			284.32									
		11:55		.24	.79	80	78				280	
		11:57	285.3	.28	.90						280	
		12:00	287.0	.29	.93	88	78				280	
Total		12:05	289.7	.30	.96	94	78				280	
						Avg.	Avg.					
						Avg.						

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## RESULTS OF ORSAT ANALYSIS

**TEST**

Description of equipment being tested

## Boiler

## Hi-Lo MODULATOR

### Orsat analysis data

Tests made by E.J.

**Remarks:**

CARBON BALANCE

(Basis: One Hour of Actual Burner Operation)

ddress \_\_\_\_\_ Date \_\_\_\_\_

Fuel Analysis

1. Gallons of fuel burned in one hour ≈

40.6 gal.

2. Pounds of fuel burned in one hour ≈

40.8 gals.  $\times$  8.33  $\times$  .8967 lbs =  
gal

303. pounds

3. Amount of carbon burned in one hour =

.854 lb C  $\times$  303. lbs fuel =  
1lb fuel  
259 lbs carbon

Orsat Analysis

4. Volumetric flow rate, Qs = 85444 CFH  
@ standard conditions (dry)

5. CO<sub>2</sub> flow rate =

$$\frac{\% \text{CO}_2}{100} \times Q_s = \frac{.056}{100} \times 85444 \\ = \underline{4785} \text{ CFH}$$

6. CO flow rate =

$$\frac{\% \text{CO}}{100} \times Q_s = \frac{.002}{100} \times 85444 \\ = \underline{171} \text{ CFH}_t$$

7. Total CO<sub>2</sub> + CO flow rate =

$$\underline{4785} + \underline{171} = \underline{4956} \text{ CFH}_t$$

8. Pounds C being emitted =

$$\frac{4956 \text{ CFH}_t}{530} \times \frac{492}{359} \times \frac{12}{359} \\ = \underline{154} \text{ lbs carbon}$$

ODERGALER

CLOCK TIME 0000 00 CLOCK TIME 0000 00

AEGEAN

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				LOCATION			
				OBSERVER			
(Indicate sun, wind direction, stock and distance)							
60	2	60	1		CLOCK TIME	RING #	CLOCK TIME
15	2	15	>1		15 sec	<1	15 sec
30	1	30	1		30	<1	30
45	>1	45	1		45	<1	45
60	3	60	1		60	<1	60
15	>2	15	1		15	<1	15
30	2	30	>1		30	<1	30
45	3	45	1		45	<1	45
60	>1	60	1		60	<1	60
15	>2	15	1		15	<1	15
30	2	30	>1		30	<1	30
45	3	45	>1		45	<1	45
60	>1	60	1		60	<1	60
15	>1	15	1		15	<1	15
30	>1	30	1		30	<1	30
45	>1	45	1		45	<1	45
60	2	60	<1		60	<1	60
15	2	15	<1		60	<1	60
30	2	30	<1		60	<1	60
45	2	45	<1		60	<1	60
60	2	60	<1		60	<1	60
15	>1	15	<1		60	<1	60
30	>1	30	<1		60	<1	60
45	>1	45	<1		60	<1	60
60	2	60	<1		60	<1	60
15	2	15	<1		60	<1	60
30	2	30	<1		60	<1	60
45	2	45	<1		60	<1	60
60	2	60	<1		60	<1	60
15	>1	15	<1		60	<1	60
30	>1	30	<1		60	<1	60
45	>1	45	<1		60	<1	60
60	>1	60	<1		60	<1	60
15	>1	15	<1		60	<1	60
30	>1	30	<1		60	<1	60
45	>1	45	<1		60	<1	60
60	>1	60	<1		60	<1	60
15	>1	15	<1		60	<1	60
30	>1	30	<1		60	<1	60
45	1	45	<1		60	<1	60
60	1	60	<1		60	<1	60

from 10:15 to 10:45 A.M.

# REFUSE CHARGING DATA

## Test 1

Charge 127.5 lbs

NON Combust. 103.5# ASH  
burned refuse 24.0 lbs

## Test 2

Charge 116 lbs

NON combust. 72.5# ASH  
burned refuse 43.5 lbs

## Test 3

Charge 118 lbs

NON combust. 42.0#  
burned refuse 76.0 lbs

## Test 4

Charge 144.5 lbs

NON combust. 63.5  
81.0 lbs

PRETEST INCINERATOR INSPECTION

C

Stack and Roof

\*1. Is chimney structurally sound?

\*2. What is height of stack above roof 15', above penthouse 3 ?\*3. Is there a roof settling chamber? YesHow many stack diameters is available above chamber? 4Can this stack be tested on lower floor or penthouse? No4. Should this site be rejected based on items (\*) above? 25. Inside stack dimensions 24" X 24"6. Outside stack dimensions, 40" X 40"

7. Is chimney top suitable for sealing the insert?

8. Is there a buildup of soot inside stack? ?9. Study site and decide on scaffold, supports, etc., needed for test. No

List below or on separate page with sketch. Demensions as required.

10. Can spark arrestor be removed? SPECIFY METHOD OF REMOVAL WIRE CUTTERSRemarks  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

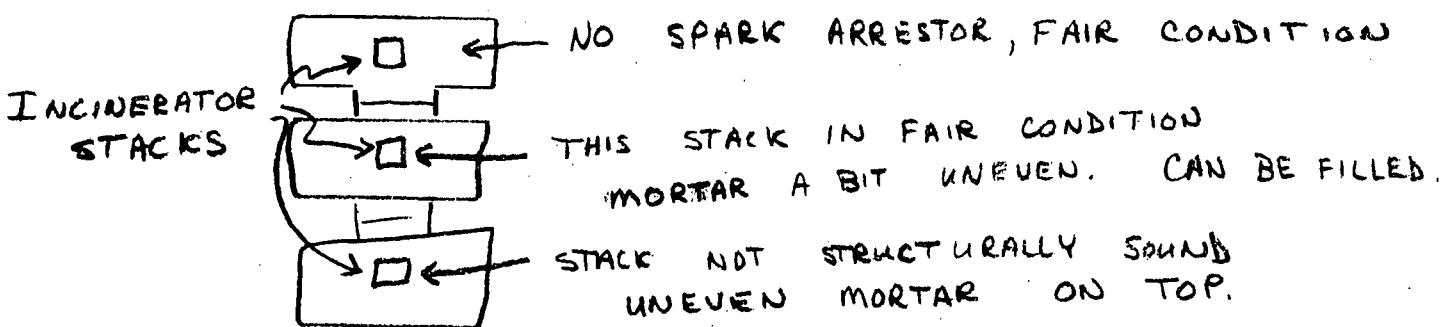
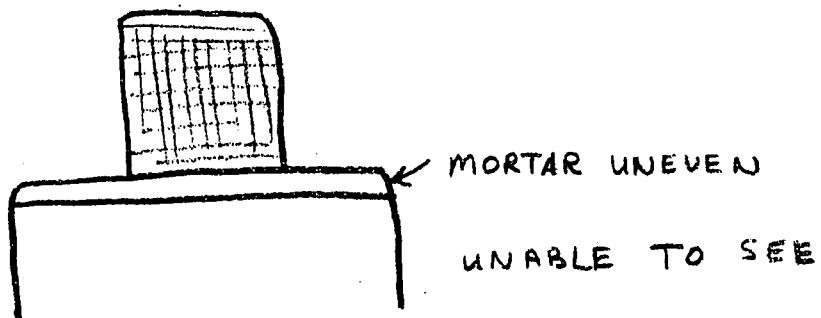
UP #2

DRAW DIAGRAM OF STACK, SHOW HOW SPARK ARRESTOR IS ATTACHED AND NOTE IF THERE WILL BE OBSTRUCTIONS TO SEALING THE INSERTS

I.D. 2' x 2'

O.D. 40" x 40"

HEIGHT 15'



185

MCCLELLAN AVE.

PRETEST INCINERATOR INSPECTIONNYC Certificate of Operation: Yes \_\_\_\_\_ Year \_\_\_\_\_  NoIncinerator Manufacturer: KERNERATOR

Model No.: \_\_\_\_\_

Type:        flue fed      or  direct fed  
 single chamber or        multiple chamber  
       single flue      or        double flue

Volume of Chamber: \_\_\_\_\_ cu. ft.

Grate Area: \_\_\_\_\_ sq. ft. NO GRATECharging Gate:  yes        noPrimary Gas Burner (s):        yes  no Firing Rate: \_\_\_\_\_ CFMGas Auxiliary Burner (s):        yes  no Firing Rate: \_\_\_\_\_ CFMGas Scrubbers:        yes  no; rated capacity \_\_\_\_\_ cfm@1600°FAutomatic By-Pass Damper:        yes  noCycling Clock:        yes  noVentilation: louvre (s):        yes  no area \_\_\_\_\_ sq. in.                        door (s):  yes        no area \_\_\_\_\_ sq. in.                        window (s):        yes  no area \_\_\_\_\_ sq. in.                        fresh air duct:        yes  no area \_\_\_\_\_ sq. in.                        fresh air fan:        yes  nooverfire air fan  
& nozzle system:        yes  noHeight of refuse during normal burn (estimate) 4 ft. above  below  FROM FN  
bottom of door.Can 1/4" hole be drilled in breaching at furnace outlet?        yes  noCan stack test be performed in basement?        yes  noCondition of Equipment: NONE

**APPENDIX F**

**ADDITIONAL BOILER TEST RESULTS**

RETEST OF FOUR APARTMENT HOUSE BOILERS

IN NEW YORK CITY

Introduction

These additional tests were initiated and conducted entirely by the New York State Department of Environmental Conservation and are not considered an official part of an earlier study for the U.S. Environmental Protection Agency. The purpose of these tests was to measure the emissions from four of the same boiler sites tested during the previous study to ascertain if emissions from these sites during colder weather would differ substantially from the earlier results. The testing procedures employed were identical to those in the 1973 series of tests but Bacharach readings, fuel oil temperatures and boiler room temperatures were not recorded. Fuel samples were taken and analyzed for sulfur, ash, and BTU content.

Discussion

These stack tests were conducted during February, 1974. The average ambient temperature recorded by the test personnel was 36°F which is slightly warmer than normal for February in New York City but colder than the ambient temperatures experienced during the 1973 series of tests.

While four tests are insufficient for a statistical determination, a trend is evident in the tabulated emissions which follow. Three of the test results show an increase in pollutant mass rate (lb/hr) which would be expected when oil consumption increases. The measured particulate concentrations (grains/SCF) also show an increase, as does the particulate emissions expressed in pounds per 1000 gallons of fuel. Only one site, A4MPB, revealed a decrease in emissions. At this site, the management has made control panel alterations which have changed the operation of the boiler since it was tested in 1973. The full extent of the work performed is not known but the changes appear to have lowered the particulate emissions.

Summary

The results of only four tests are insufficient data upon which to base conclusions affecting the results of the 1973 series of tests. They do provide sufficient reason to suspect particulate emissions from apartment house boilers in New York City may increase during colder weather. The cause of the increased emissions may be due to decreased combustion efficiency at higher firing rates, increased stack velocities, poor maintenance during the previous year, or a combination of these or other unidentified factors.

Test Personnel

Neil Isabelle  
Burt Pine  
Ellis Johnson  
Donald Daoust

Bruce Neddo  
Carlos Morales  
Harold Avery  
Kenneth Cabiness

SITE CODE	FILTER Gr/SCF @12%CO <sub>2</sub>	FILTER Lb/Hr	TOTAL Lb/Hr	FILTER Lb/10 <sup>6</sup> BTU	FILTER Lb/10 <sup>3</sup> Gal	TOTAL Lb/10 <sup>3</sup> Gal	Gal/Hr Fuel
A4MPB	2-27-74						
1	0.078	0.89	2.40	0.150	21.5	58.0	41
2	0.095	0.82	2.01	0.142	20.5	50.3	40
3	0.091	1.03	2.19	0.171	24.5	52.1	42
Avg.	0.088	0.91	2.20	0.154	22.2	53.5	41
	4-14-73						
Avg.	0.124	1.35	2.12	0.290	42.1	65.8	32.2
C1BHB	2-14-74						
1	0.037	2.75	6.88	0.076	10.9	27.3	252
2	0.028	2.05	7.20	0.057	8.3	29.0	248
Avg.	0.032	2.40	7.04	0.067	9.6	28.2	250
	6-27-73						
Avg.	0.026	0.50	1.92	0.035	5.1	19.6	98
D1MPB	2-12-74						
1	0.113	0.33	0.49	0.138	20.0	30.0	16.4
2	0.123	0.29	0.50	0.114	16.6	28.6	17.5
**3	0.205	0.57	0.78	0.201	29.2	39.7	19.6
Avg.	0.147	0.40	0.59	0.151	21.9	32.8	17.8
	3-27-73						
Avg.	0.027	0.13	0.25	0.056	8.1	14.8	16
U4MPB	2-26-74						
1	0.184	1.28	1.68	0.240	34.7	45.8	36.8
2	Test rejected - Abnormal probe wash					-	
*3	0.190	1.24	-	0.243	35.1	-	35.4
Avg.	0.187	1.26	-	0.242	34.9	-	36.1
	5-11-73						
Avg.	0.079	0.47	0.68	0.123	17.5	25.7	26.4

\*Total catch rejected - Impinger catch contaminated

\*\*Higher Ringelmann readings observed during this test run

Overall averages of these four sites:

-1974-						
0.114	1.13	2.68	0.153	22.1	40.1	74.9
-1973-						
.064	0.61	1.24	0.126	18.2	31.6	43.2

SITE CODE	AVERAGED ORSATS			Average Ringel-mann	Ambient Temp. @10a.m.	FUEL OIL DATA		
	CO <sub>2</sub>	O <sub>2</sub>	CO			Heat Value BTU/Lb	Ash Content %	Sulfur Content %
A4MPB								
2/27/74	2.6	16.5	-	0.5	31	19073	0.05	0.24
4/14/73	3.0	14.5	0.4	0	45	19100	.004	0.29
C1BHB								
2/14/74	3.8	15.5	-	0	39	19125	0.02	0.26
6/27/73	1.6	19.1	0.1	N.A.	69	19220	.006	.29
D1MPB								
2/12/74	4.9	14.0	-	1	30	19256	0.003	0.25
3/27/73	7.0	10.7	0.5	N.A.	46	19278	N.A.	0.33
U4MPB								
2/26/74	5.3	13.3	-	1.5	30	19186	0.02	0.26
5/11/73	5.4	13.4	0.5	0-3	61	18930	0.123	0.39

TECHNICAL REPORT DATA <i>(Please read Instructions on the reverse before completing)</i>		
1. REPORT NO. EPA-450/3-76-008	2.	3. RECIPIENT'S ACCESSION NO.
4. TITLE AND SUBTITLE Determination of Particulate Emission Factors for Boilers and Incinerators Bronx and Manhattan		5. REPORT DATE February 1974
6. PERFORMING ORGANIZATION CODE		
7. AUTHOR(S) E. W. Savoie and M. Kormanik	8. PERFORMING ORGANIZATION REPORT NO.	
9. PERFORMING ORGANIZATION NAME AND ADDRESS Environmental Conservation Research, Inc. 50 Wolf Road Albany, NY 12201		10. PROGRAM ELEMENT NO.
		11. CONTRACT/GANT NO. 68-02-1070
12. SPONSORING AGENCY NAME AND ADDRESS Environmental Protection Agency Office of Air and Waste Management Office of Air Quality Planning and Standards Research Triangle Park, NC 27711		13. TYPE OF REPORT AND PERIOD COVERED Final
		14. SPONSORING AGENCY CODE
15. SUPPLEMENTARY NOTES		
16. ABSTRACT The purpose of this project was to determine particulate emission factors for residual oil-fired boilers and flue-fed incinerators in apartment houses in South Bronx and Upper Manhattan, New York City. Twenty-five boilers were tested ranging in age from new to fifty years old, with maximum burning rates ranging from 14 to 100 gallons of fuel per hour. Twenty-one incinerators were tested with charging rates from 84 to 383 pounds per hour. All installations were tested as found, that is, no adjustment or maintenance other than cleaning the incinerator was performed prior to conducting the tests.		
Tests were conducted utilizing the particulate sampling train developed by EPA. The emission factors on a dry filter basis were determined to be:  a. 24.0 pounds of particulate per 1000 gallons of low sulfur residual fuel oil. b1. 18.9 pounds of particulate per ton of refuse burned. 2. 7.9 pounds of particulate per ton of refuse charged.		
The emission factors on a total (filter plus impinger) basis were found to be:  a. 33.5 pounds of particulate per 1000 gallons of low sulfur residual fuel oil. b1. 32.9 pounds of particulate per ton of refuse burned. 2. 13.9 pounds of particulate per ton of refuse charge.		
17. KEY WORDS AND DOCUMENT ANALYSIS		
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