Note: This is a reference cited in *AP 42, Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources.* AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

Source category: Electroplating
Plant name : Naval Air Rework Facility
Process : Electroplating, anodizing

Filename: REF-21.WQ1
Location: Pensacola, FL
Test date: May 5-23, 1980

Date: 04/25/96
Ref. No.: 21
Process rate basis: production

Source	Type of control	Pollutant	Run No.	Test Method	Samp. time, min	Isokinetic, %	Gas volume, DSCF	Volum. flow rate, DSCFM	Mass, ug	Concen., gr/DSCF	Emission rate, lb/hr	Process rate, A-hr	Emission factor mg/A-hr	Emission factor gr/A-hr	Rat.
Cadmium and automatic plating machine	PBS	Total Cr	1	Mod. 8	96	101.6	60.5	20,916	5.50	1.40E-06	0.00025	240	0.76	0.012	
		Total Cr	2		105	101.5	60.28	20,862	1.63	4.17E-07	7.5E-05	263	0.23	0.0035	
		Total Cr	3		105	100.9	59.58	20,738	1.58	4.10E-07	7.3E-05	263	0.22	0.0034	
		Average								7.43E-07	0.00013		0.40	0.0062	NR
		Cadmium	1	Mod. 8	96	101.6	60.5	20,916	2.93	7.48E-07	0.00013	240	0.41	0.0063	
		Cadmium	2		105	101.5	60.3	20,862	7.33	1.88E-06	0.00034	263	1.0	0.016	
		Cadmium	3		105	100.9	59.6	20,738	0.59	1.54E-07	2.7E-05	263	0.083	0.0013	
		Average								9.26E-07	0.00017		0.50	0.0077	C
		Cyanide	1	Mod. 8	96	101.6	60.5	20,916	103	2.62E-05	0.00469	240	14	0.22	
		Cyanide	2		105	101.5	60.3	20,862	297	7.61E-05	0.0136	263	41	0.64	
		Cyanide	3		105	100.9	59.6	20,738	289	7.49E-05	0.0133	263	40	0.62	
		Average								5.91E-05	0.0105		32	0.49	C
		Ammonia	1	Mod. 8	96	101.6	60.5	20,916	191	4.86E-05	0.00872	240	26	0.41	
		Ammonia	2		105	101.5	60.3	20,862	212	5.42E-05	0.00969	263	29	0.45	
		Ammonia	3		105	100.9	59.6	20,738	87.1	2.26E-05	0.00401	263	12	0.19	
		Average								4.18E-05	0.00747		23	0.35	C

Basis for rating: Cr--Runs 2 and 3 BDL; other pollutants rated C because of confusing/conflicting data in report.
Notes: 9 to 12 oz/gal of NaCN, 3 to 4 oz/gal of CdO

NESO 2-095

SOURCE EMISSION TESTS AT BUILDINGS 604 AND 3557

at

Naval Air Rework Facility
Pensacola, FL

September 1980

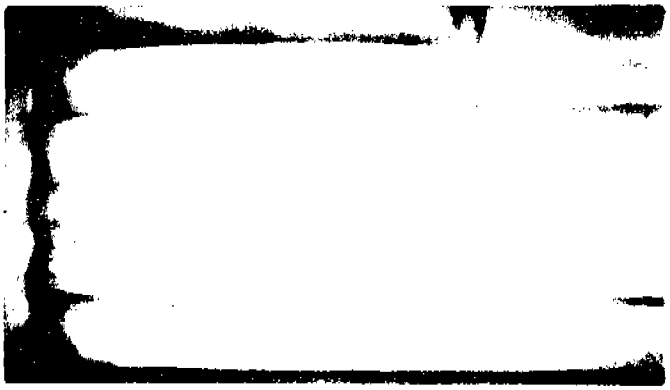
By:

Charles K. Yee
Navy Environmental Support Office
Naval Energy and Environmental Support Activity
Port Hueneme, CA

ABSTRACT

The outlet of the wet scrubbers at the plating facility (bldg. 604) and the exhaust stack at cleaning facility (bldg. 3557) were tested to determine the concentrations of several different organic and inorganic chemical species. Test results indicated that the emissions from both buildings are relatively low. Inorganic emissions from both buildings are below the Occupational Safety and Health Administration (OSHA) standards for an eight-hour exposure.

NAVY ENVIRONMENTAL SUPPORT OFFICE
Naval Construction Battalion Center
Port Hueneme, California 93043



NEPSS

Naval
Environmental
Protection
Support
Service

CONTENTS

		Page
	NOMENCLATURE	vii
	INTRODUCTION	1
	BACKGROUND	1
	TECHNICAL BACKGROUND	2
	CONDITION OF SCRUBBERS	5
	PROCEDURE	6
	CHAIN OF CUSTODY	13
	TEST RESULTS	13
	DISCUSSION	14
	CONCLUSION	17
	REFERENCES	17
	FIGURES	
I	METHOD VIII SAMPLING TRAIN	9
II	PORT LOCATIONS	10
III	PORT LOCATIONS	11
IV	PORT LOCATION ON STACK BLDG. 3557	12
	TABLES	
1A	INORGANIC EMISSIONS	18
1B	INORGANIC EMISSIONS	19
2	ORGANIC EMISSIONS	20
3	ORGANIC EMISSIONS	21
4A	STACK FLOW PROFILE	22
4B	STACK FLOW PROFILE	23
5	OSHA CONCENTRATIONS	24
6	VOLTAGE AND CURRENT READINGS, BLDG. 604	25

TABLES (continued)

		Page
7	CHEMICAL COMPOUNDS USED IN AIRCRAFT PAINT STRIPPING, BLDG. 3557. . . .	26
8	CHEMICAL USAGE FOR VAT AREA IN BLDG. 3557.	27

APPENDICES

A	CALCULATIONS	A-1
B	CALIBRATIONS	B-1
C	CHEMICAL BATHS	C-1
D	FIELD DATA	D-1
E	TEAM RESUMES	E-1

NOMENCLATURE

Symbol	Unit	Description
A_s	in^2	Stack cross sectional area
C_p		Pitot tube calibration factor
D_n	inches	Nozzle diameter
	DSCF	Dry standard cubic feet
	DSCFM	Dry standard cubic feet per minute
	fpm	Feet per minute
G	32.1725 ft/sec^2	Acceleration due to gravity
	g	Gram
	hr	Hour
%I	%	Percent isokinetic
	lb	Pound
	lb/hr	Pounds per hour
%M	%	Percent moisture in stack gas by volume
M^3		Cubic meter
M_d		Mole fraction dry gas
	µg	Microgram (1×10^{-6} grams)
	mg	Milligram (1×10^{-3} grams)
M_w	g	Mass of water in particulate train
MW	lb/lb-mole	Molecular weight of stack gas
MW_{air}	28.9641 lb/lb-mole	Molecular weight of air at standard conditions
MW_d	lb/lb-mole	Molecular weight of dry stack gas
MW_{H_2O}	18.0153 lb/lb-mole	Molecular weight of water
Pb	"Hg absolute	Barometric pressure
Ps	"Hg absolute	Stack pressure

Symbol	Unit	Description
Δ	$"H_2O$	Velocity head of stack gas
P_{std}	29.92126 "Hg	Standard barometric pressure
Qs	DSCFM	Stack gas dry flow rate
R	21.85 in Hg-ft^3/lb-mole-R^o	Universal gas constant
	SCF	Standard cubic feet
t_{amb}	^oF	Ambient temperature
t_m	^oF	Control box meter temperature
T_m	^oR	Absolute control box meter temperature
T_t	min.	Net time of test
t_s	^oF	Stack gas temperature
T_s	^oR	Absolute stack gas temperature
T_{std}	528^oR	Standard temperature
V_m	ft^3	Volume of dry gas sampled @ meter conditions
$V_{m_{std}}$	DSCF	Volume of dry gas sampled @ standard conditions
V_s	fpm	Stack velocity @ stack conditions
V_w	ml	Total water collected in impingers and desiccant
$V_{w_{gas}}$	ft^3	Volume of water vapor collected @ standard conditions
ΔH	$"H_2O$	Orifice pressure drop
η(fuel)	%	Combustion efficiency for fuel being used
ρ_{air}	0.075224 lbs/ft^3	Density of air at standard conditions
ρ_{H_2O}	62.31639 lbs/ft^3	Density of water at standard conditions
ρ_{H_2O}	0.99824 g/ml	Density of water at standard conditions

Standard conditions are 68^oF, 29.92126 "Hg

Symbol	Unit	Description
Cl^-		Chloride
Cd		Cadmium, chemical element
Cr		Chromium, chemical element
Cu		Copper, chemical element
CN^-		Cyanide
F^-		Fluoride
NH_3		Ammonia, chemical compound
NO_3^-		Nitrate, ion
Ni		Nickel, chemical element
PO_4^{-3}		Phosphate, ion
Ag		Silver, chemical element
SO_4^{-2}		Sulfate, ion
Na		Sodium, chemical element
Sn		Tin, chemical element

INTRODUCTION

In response to a request[1] from the Southern Division, Naval Facilities Engineering Command (SOUTHDIV), the Navy Environmental Support Office (NESO) source emission test (SET) team conducted aerosol emission tests from seven scrubber outlets on bldg. 604, one cyanide treatment exhaust from bldg. 604 and an exhaust stack from bldg. 3557 at the Naval Air Rework Facility (NARF), Pensacola, FL, during the period 5-23 May 1980. The tests were performed to determine the quantity of emissions emanating from the plating and cleaning facilities.

BACKGROUND

Bldg 604

The plating facility is divided into seven sections: magnesium dichromate treatment; alodine treatment; hard chrome plating; zincate acid copper line, tin plate, and acid dip; nickel, copper and silver plating; cadmium plating; and automatic cadmium machine sections. Exhaust from each section is ducted through its own low energy water scrubber.

Cyanide wastes produced from some of the treatment sections are stored in cyanide treatment tanks. Once every three or four weeks, these wastes are purged with chlorine gas and sodium hydroxide solution to destroy the cyanide complex. Reaction products from the cyanide treatment are exhausted through an 18-inch stack on the roof.

Bldg. 3557

This building was constructed in 1977 to consolidate the work of several smaller buildings. It has six cells for cleaning and stripping major aircraft

parts; one small parts area (VAT room) for cleaning and stripping of small aluminum, steel and magnesium components; and several small rooms for hand-cleaning of small items.

Ventilation for the cleaning cells is supplied by roof mounted units which supply air inflow through a vented perforated ceiling; air is exhausted from each cell area by exhaust centrifugal fans located in the sub-floor of the VAT room which discharge air and vapor mixture to air ducts leading to a common concrete header and stack for dispersion. Ventilation for the small rooms is similar to the cleaning cells. Ventilation for the VAT room is supplied by roof-mounted units which supply air inflow through the ceiling. Air is extracted through a lip vent system on individual tanks by exhaust centrifugal fans that are an integral part of the tank or one that is floor-mounted adjacent to the tank. Air and vapor mixture are discharged through air ducts leading to a common concrete header and stack.

Because of damages to an underground concrete duct for cell #2, water intrusion causes flooding in the ducts. Standing water impedes the operation of the centrifugal fans. During the last three tests cell #2 was secured.

TECHNICAL BACKGROUND

A. General

Generally, plating and aircraft stripping operations are not subject to specific air pollution control regulations in the State of Florida.

B. Air Emission Sources

1. Cleaning and Plating (bldg. 604)

Most potential air pollution from a plating operation evolves from two processes. First, in the plating preparation process, work pieces are cleaned to remove oil, grease, dirt, scale, and old plating. The cleaning process involves the following steps:

a. Mechanical cleaning to remove dirt and scale by wire brush or wire wheel. Large particles are produced by these mechanical actions. The particulates usually settle around the work area.

b. Precleaning by solvent-soaking or vapor-degreasing is used to clean heavily soiled and painted items. Organic gases and vapor can be generated by the process; but usually are not a major source of air emissions unless precleaning is a major operation.

c. Intermediate cleaning in a strong alkaline bath to remove the remaining greases leaves items relatively clean. Intermittent dipping of items into solutions and agitation or splashing during the cleaning process cause the formation of aerosols.

d. Electrocleaning, one of the two final cleaning steps, is accomplished by passing a current through a strong alkaline bath. Chemical action and mechanical action from gassing during electrolysis removes dirts remaining from the previous steps.

e. The final cleaning process is pickling. This is achieved by soaking items in an acid bath with or without an induced current. Both electrocleaning and pickling create aerosols.

The second and greatest source of generated air emissions is the plating process. Emissions are generated by tank loading and unloading, and by the electrolytic processes.

Air pollutants generated during plating, loading, and unloading processes are similar to the cleaning process. The difference is that the aerosols generated during plating contain plating solution instead of cleaning solution.

Since electrolytic plating is not 100 percent efficient, part of the power is diverted to electrolysis of the water in the plating bath. Hydrogen and oxygen are produced and bubble to the surface, creating a frothing condition known as "gassing." The rate of gassing varies with plating current density. High current density produces high gassing rates.

Most electroplating and cleaning processes do not produce high enough air pollutant concentrations to create an air pollution problem because of the small volume of aerosol generated.[2] Generally, air pollution control equipment is not required for any of these processes except the chromium-plating process.

2. Aircraft Cleaning and Stripping (bldg. 3557)

The purpose of aircraft cleaning and stripping is to remove dirt, grease, and old paints from aircraft and aircraft parts so that they can be repainted. The cleaning and stripping process involves the use of chemical compounds such as methylethylketone (MEK), grease emulsifier, acrylic stripper, expoxy stripper, detergent, and methylene chloride. These chemicals, at various stages of the operation, are sprayed on the aircraft. After a prescribed period, the chemicals are either scrubbed or washed off the surface.

Emissions from the cleaning and stripping come from two different processes: aerosol formation and solvent evaporation. Aerosol formation results from the spraying operation. Aerosols are formed when the chemical solution is forced out of the spraying nozzle and when the solution collides with a surface. Solvent evaporation is a continuous process. The evaporation rate depends on the kind of solvent, ambient temperature, and pressure.

CONDITION OF SCRUBBERS

An inspection was made on the seven scrubbers at bldg. 604. In general, the scrubbers are structually in good condition. Scrubber #3 has small leaks around the window, and scrubbers 6 and 7 have minor leaks between media pad seals and the windows.

There are minor problems with the scrubbers' exhaust system. Small cracks were observed on rubber seal connectors for scrubbers #1, 2, 5 and 6. A number of bolts were loose and lost from the fiberglass stacks due to vibration. A liquid leak was observed at the elbow after the blower on scrubber #6.

PROCEDURE

Air samples were extracted from buildings 604 and 3557 by a modified Method VIII sampling procedure. Three tests were performed on each stack.

A. Sampling procedures and equipment coincided with guidance given in Federal Register, Volume 42, No. 160, Part II, of 18 August 1977, except as noted.

B. Locations of sampling sites and number of sampling points were determined using Method I cited in the above Federal Register.

C. A leak check was performed before and after each sampling sequence and after each filter change as described in Method V, section 4.1.4.1 of the above cited Federal Register, except that for a valid test no leak rate was allowed to exceed 0.01 CFM.

D. Standard probe nozzles and a type "S" pitot tube were used for sampling. Probe nozzles used are made of 316 stainless steel. Glass liners were used for tests at bldg. 604; stainless steel liner was used for bldg. 3557.

E. The following EPA methods were used:

Method I - Sample and velocity traverse

Method II - Determination of stack gas velocity and volumetric flow rate

Method III - Gas analysis for carbon dioxide, excess air, and dry molecular weight

Method IV - Determination of moisture in stack gases

Method VIII - Determination of sulfuric acid mist and sulfur dioxide emissions from stationary sources

The following variations from the above methods were made:

1. Polyethylene cubitainers were used to store the sample solutions.

2. 0.1 N KOH was used instead of hydrogen peroxide solution for the no. 1 impinger.

3. An impinger filled with about 100 grams of activated carbon was added between the third and fourth impingers of the modified Method VIII sampling train to collect organic gaseous samples from bldg. 3557.

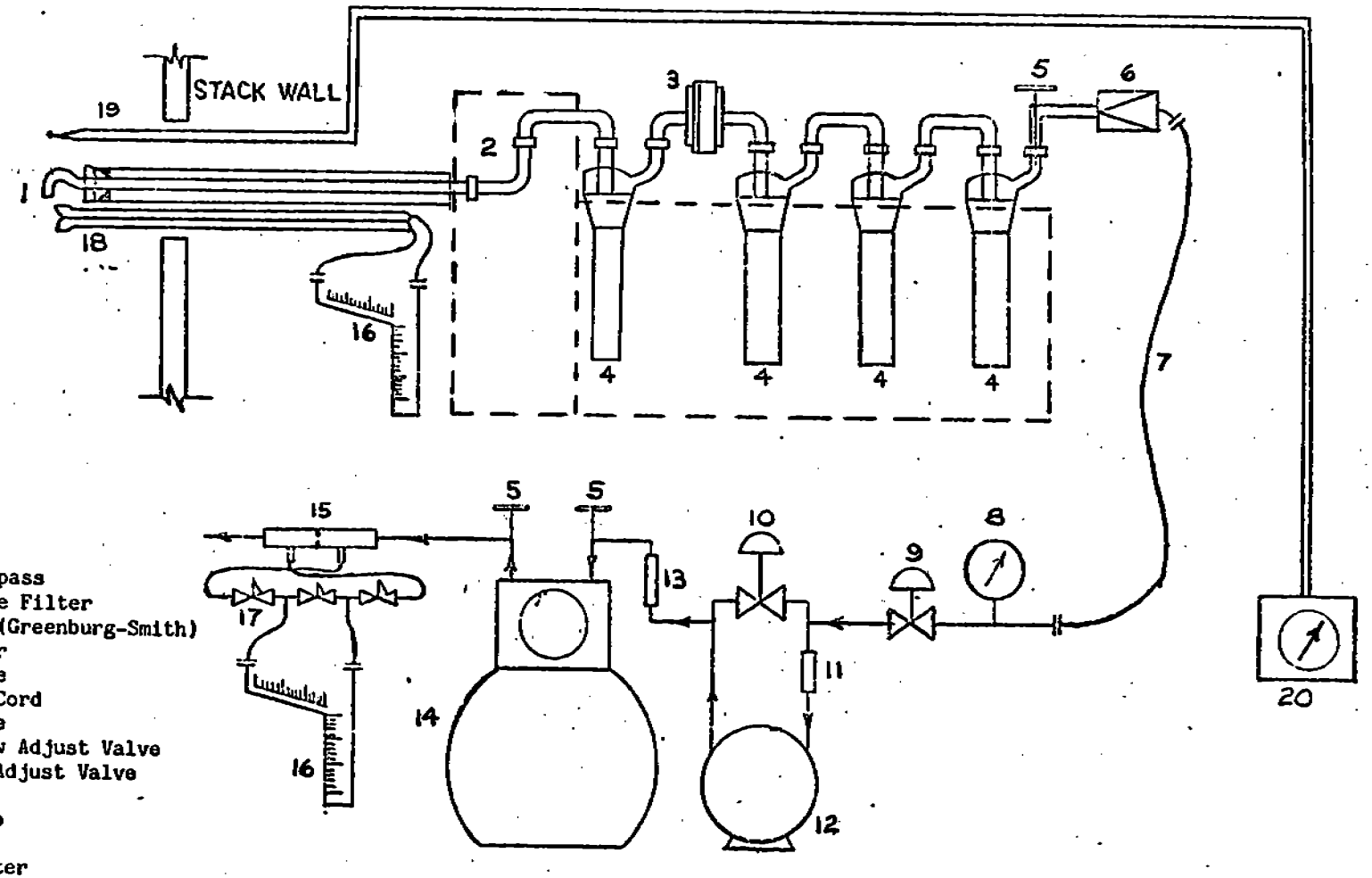
4. Sample solutions along with particulate filters were stored in an ice-filled ice chest prior to shipment to the laboratory.

5. Impingers were tared, weighed with initial water or silica gel, and reweighed after the test to determine water weight gains. This method is both simpler and more accurate than the specified transfer/measure or weigh procedure (Method V, sections 2.2.6 and 4.2), as the samples are handled less and temperature error is eliminated. A Mettler Electronic Balance, calibrated using International Organization for Legal Metrology (IOLM) specification metric weights, was used for all field weighings.

6. The following constants were used, reflecting the change by EPA from 70°F to 68°F for standard temperature in the above Federal Register or to reflect more accurate numerical values.

Symbol	Unit	Description
g	32.1725 ft/sec^2	Acceleration due to gravity
g/lb	453.59237	Conversion factor
K_p	85.39 $\frac{ft}{sec}\left[\frac{(lb/lb\text{-}mole)(in.\ Hg)}{(^\circ R)(in.\ H_2O)}\right]^{\frac{1}{2}}$	Pitot tube constant (Method II)
K_1	0.04710 ft^3/ml	Conversion factor (Method IV)
K_2	0.04718 ft^3/ml	Conversion factor (Method IV)
K_3	17.65 $^\circ R/in.\ Hg$	Standardizes temperature and pressure (Method IV)
K_1	17.65 $^\circ R/in.\ Hg$	Standardizes temperature and pressure (Method V)
K_2	0.04710 ft^3/ml	Conversion factor (Method V)
K_4	0.09444 $\frac{(min)(in.\ Hg)}{(^\circ R)(sec)}$	Constant for standard pressure and temperature (Method V)
MW_{air}	28.9641 lb/lb-mole	Molecular weight of air
MW_{H_2O}	18.01534 lb/lb-mole	Molecular weight of water
P_{std}	29.92126 in. Hg	Absolute standard pressure
P_{air}	0.0752236 lb/ft^3	Density of air at 20°C
P_{H_2O}	0.99824 g/ml	Density of water at 20°C
P_{H_2O}	62.31639 lb/ft^3	Density of water at 20°C

Source emission sampling train used for the tests is illustrated in figure 1. Sampling port locations for bldgs. 604 and 3557 are illustrated in figures 2, 3, and 4.



1) Probe
2) Cyclone Bypass
3) Particulate Filter
4) Impingers (Greenburg-Smith)
5) Thermometer
6) Check Valve
7) Umbilical Cord
8) Vacuum Gage
9) Coarse Flow Adjust Valve
10) Fine Flow Adjust Valve
11) Oiler
12) Vacuum Pump
13) Filter
14) Dry Gas Meter
15) Orifice Tube
16) Incline Manometer
17) Solenoid Valve
18) Pitot
19) Thermocouple
20) Pyrometer

FIGURE I -- Method VIII Sampling Train

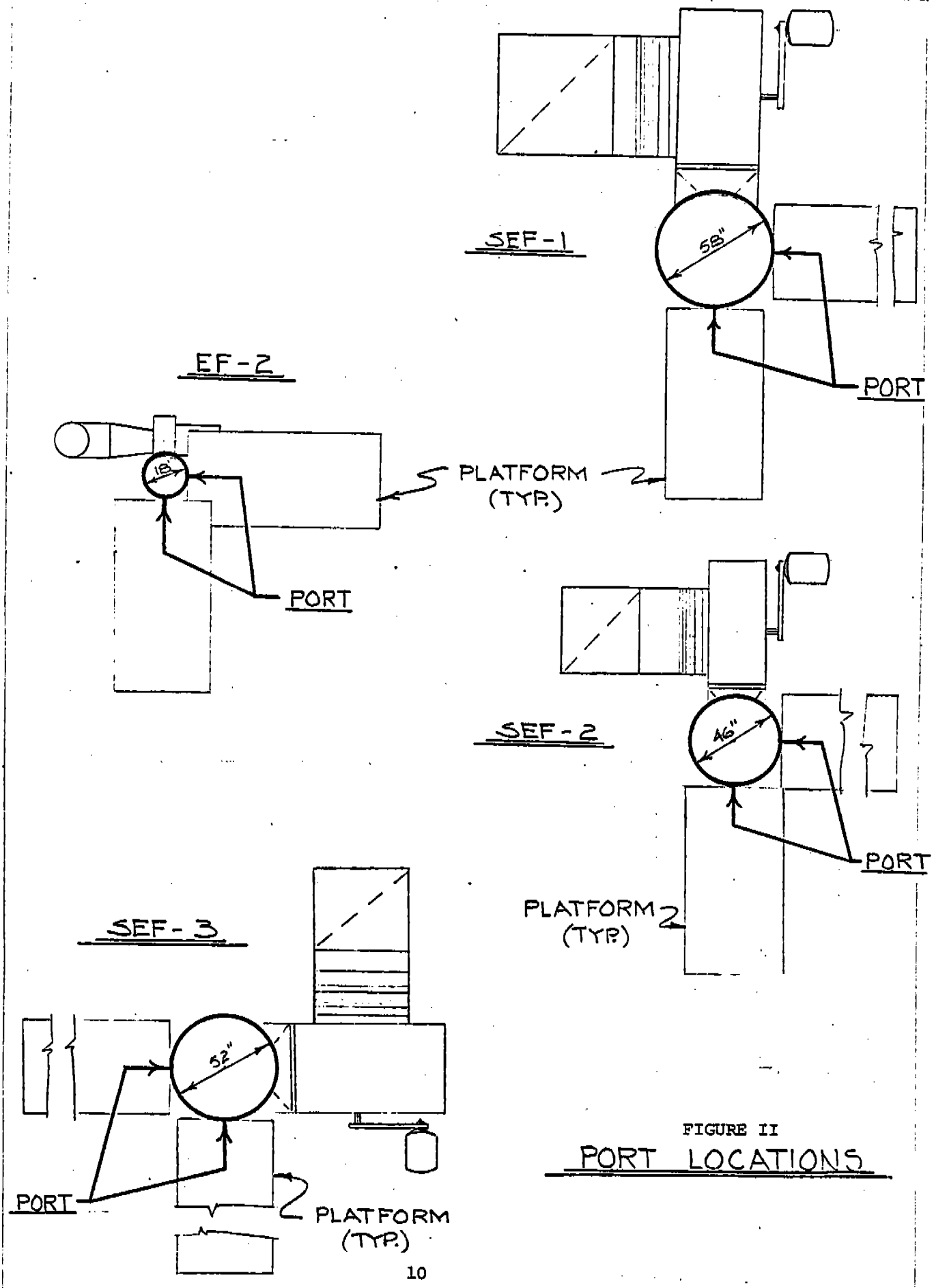


FIGURE II
PORT LOCATIONS

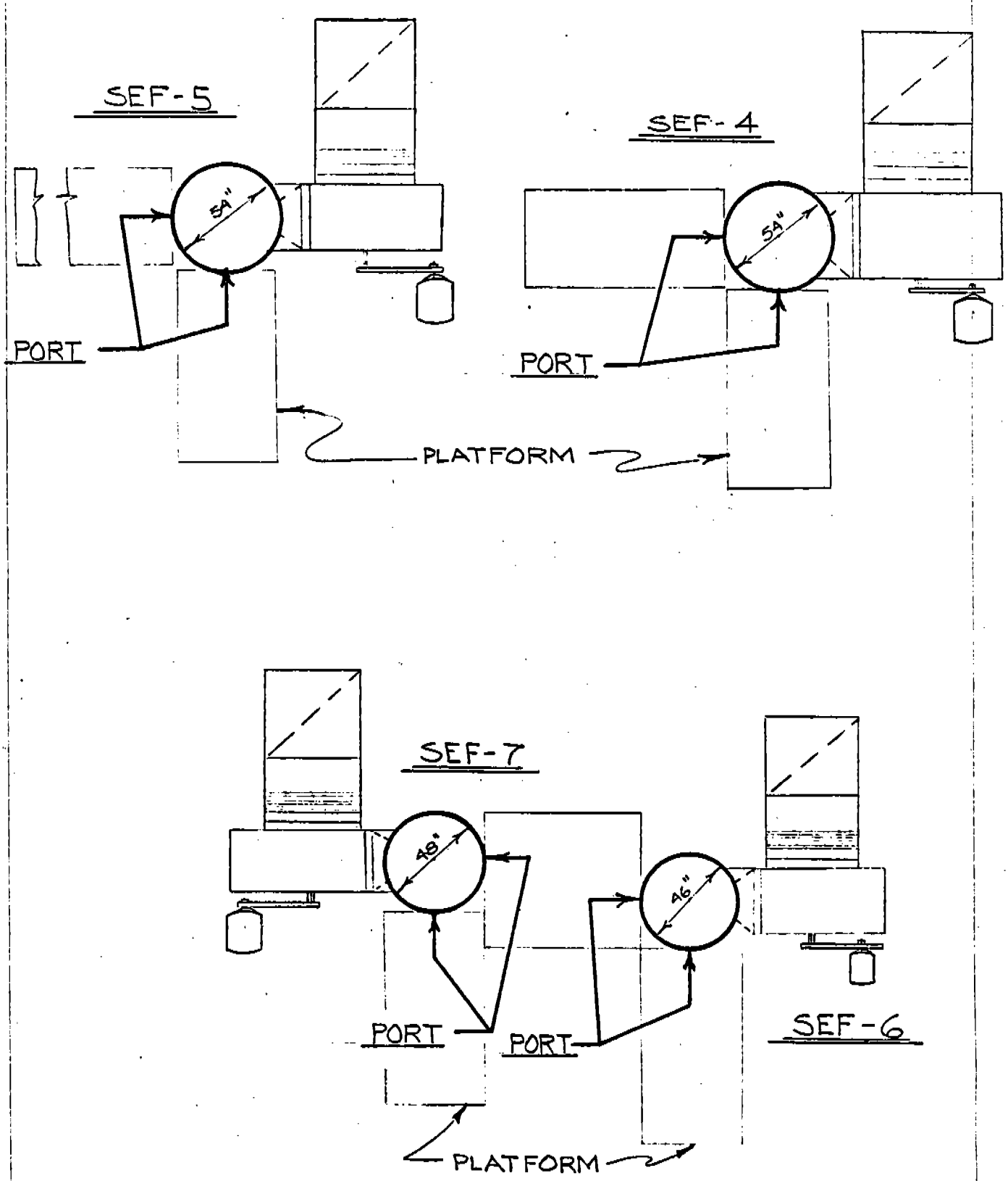


FIGURE III
PORT LOCATIONS

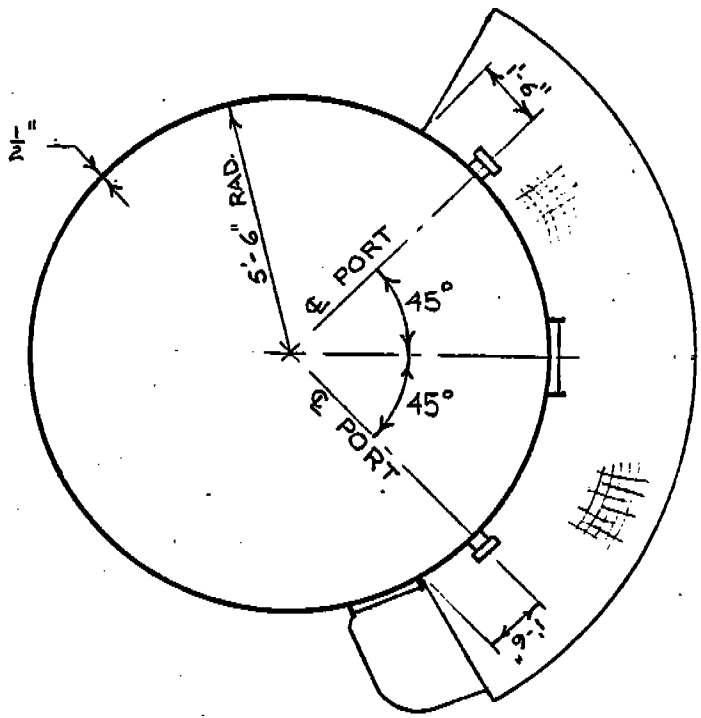


FIGURE IV

PORT LOCATION ON STACK

BLDG 3557

CHAIN OF CUSTODY

A. Source Emission Test (on-site)

Stack-control boxes	David Carpenter
	Barry Hickenbottom
impinger boxes	Edward Cobos
	Gilbert Siqueido
Sampling train set-up and sample recovery	Charles Yee

B. Laboratory Analysis

Reid H. Leonard, PhD, Consulting and Analytical Services, 537 Brent Lane, Pensacola, FL 32503.

TEST RESULTS

Test results are summarized in tables 1A, 1B, 2 and 3. Inorganic pollutants, expressed as micrograms per cubic meters ($\mu g/m^3$) of stack gas, are tabulated in tables 1A and 1B. In tables 2 and 3, organic emissions, expressed in part per million (ppm) and pounds per hour (lbs/hr), are listed. Tables 4A and 4B show the time of each test, stack flow rates, sample volumes and isokineticity of the tests. Table 5 lists the Occupational Safety and Health Administration (OSHA) standards[3] for the chemical species tested. Table 6 lists the current

and voltage values for the plating operations during testing. The amount of chemicals used in paint stripping operation during testing are tabulated in table 7. Table 8 is a list of chemical compounds and volumes used in the VAT room operations during 1 May 1979 to 30 April 1980.

Sample calculations of emission rates, test results and formulae appear in appendix A. Calibration worksheets are enclosed in appendix B. Appendix C contains the listings of all the chemical baths in both buildings 604 and 3557. Appendix D contains the raw field data sheets and the laboratory test results. The teams' resumes are included as appendix E.

DISCUSSION

Bldg. 604

The test results, as displayed in tables 1A, 1B, and 2 show that the emissions from the seven scrubbers and the cyanide treatment stack are quite low. Since there are no emission standards for these chemical species, OSHA standards are used for comparison.

OSHA standards are established for worker exposure, over an 8-hour period. All chemical species detected are below OSHA standards. If the OSHA standard for a chemical specie has not been established, the worst case situation is chosen. For example, chloride ion is compared with the concentration of hydrogen chloride. It is noted that the OSHA standard is expressed in milligram per cubic meter (mg/M^3) while values in tables 1A and 1B are in microgram per cubic meter ($\mu g/M^3$).

During the tests, voltage and amperage readings were recorded to approximate the loads of the plating or cleaning operations. Table 6 shows the voltage and amperage values. Due to insufficient workload, no plating was being performed in the tanks controlled by scrubbers 4 and 5 during the tests SEF-4-8, SEF-4-9 and SEF-5-5. Scrubber no. 1 was tested with no platings load. Scrubber no. 7 was tested with dummy loads to simulate normal production.

It is interesting that when comparing the test results of the "no-load" runs to the "loaded" runs (SEF-4-8 and SEF-4-9 vs SEF-4-7; SEF-5-5 vs SEF-5-4 and SEF-5-6), no significant trend is detected in emission values. The reason for this may be (1) the loads were so low that "gassing" during plating was not a problem, and (2) the scrubbers may have an equalizing effect on the emission concentrations.

All three tests for scrubber #1 were performed under "no-load" conditions. The results for inorganic emissions from this scrubber are comparable with values obtained from other scrubbers for the same parameter, except chloride ions. Chloride values for scrubber 1 are much lower than the others.

Bldg. 3557

Five tests were performed on the stack at this building. Test runs no. 1 and 2 are deleted from this report because of insufficient sample volume collected (less than 30 cubic feet) and wide variation in stack velocities. The variation in stack velocity was due to standing water, in the duct, being sucked into the sub-floor blowers under cleaning cell #2. On subsequent tests, cell #2 was secured. Table 1B presents the results of inorganic emissions from tests 15, 16 and 17, while table 3 shows the organic emissions.

Inorganic emissions from this building are very low. Of all the chemical species detected, phenol had the highest reading. However, this reading, 9.38 mg/M^3, is still below the OSHA concentration of 19 mg/M^3 for phenol. Of all the organic compounds listed in table 3, dichloromethane has the highest reading with a range of 11.72 to 29.04 ppm. The dichloromethane value is at least one order of magnitude higher than others.

The reason for the high dichloromethane reading is that most stripping and cleaning compounds contain high percentages of this chemical in their formulations. In addition, approximately 3,700 gallons of dichloromethane is being consumed annually in the VAT area.

Before and after each test run, the storage tank levels for MEK, grease emulsifier, acrylic stripper and detergent were recorded and the amount of each compound used was computed. By comparing the amount of chemical used to the organic emission results for runs 3, 4 and 5, no definitive trend can be established. Only dichloromethane showed increases in value (run 5) when total chemical usage was higher.

The State of Florida Department of Environmental Regulation (DER) has a regulation, 17-2.16, on emission of volatile organic compounds (VOC). However, it does not have specific provisions on cleaning or paint stripping operations. If this regulation were ruled to apply, the emission from bldg. 3557 would fall below the DER limit of 100 tons of VOC per year, because dichloromethane is exempted as a VOC by the state.

CONCLUSION

Based on test results, the following conclusions can be drawn:

1. Inorganic air pollutants from bldgs. 604 and 3557 are relatively low. All chemical species detected are below OSHA standards.

2. Cyanide emissions from the cyanide treatment tanks are low, 0.011 to 0.022 mg/M^3, compared to the OSHA standard of 5 mg/M^3.

3. Volatile organic compounds emitted from bldg. 3557 are below the state limit of 100 tons per year.

REFERENCES

1. SOUTHNAVFACENGCOM ltr Code 114A of 4 Jan 80.

2. Watson, Michael R., Pollution Control in Metal Finishing, Park Ridge, New Jersey: Noyes Data Corporation, 1973.

3. Occupational Safety and Health Standards for General Industry, (29 CFR Part 1910) Chicago, IL. Commerce Clearing House, Inc., 1979.

TABLE 1A

Inorganic Emissions ($\mu g/M^3$)

Run No.	Cl^-	Cr	Cu	CN^-	NH_3	NO_3^-	Ni	PO_4^{-3}	Ag	SO_4^{-2}	Na	Sn	0.1N KOH (ml)
SEF-1-1, Run 1	10.33	0.86				13.77				<172	293		406.4
SEF-1-2, Run 2	27.43	1.07				4.57				<152	183		348.3
SEF-1-3, Run 3	15.82	6.59				14.50				<132	290		303.7
SEF-2-1, Run 1		1.6											349.4
SEF-2-2, Run 2		1.48											324.3
SEF-2-3, Run 3		1.50											330.9
SEF-3-4, Run 1		<1.18								<148	251		372.4
SEF-3-5, Run 2		<1.12								<168	224		373.1
SEF-3-6, Run 3		<1.23								<154	292		391
SEF-4-7, Run 1	536		<18.5	36.97	25.88	78		<9.24		536	277	<259	370.3
SEF-4-9, Run 2	267		<19	85.76	95.3	112		<9.5		<190	286	<267	379.4
SEF-4-9, Run 3	237		<17	67.59	6.7	106		8.4		<169	287	<236	340.9
SEF-5-4, Run 1	575		<15.1	257			3.03		<0.45		166		335
SEF-5-5, Run 2	513		<17.7	354			3.54		<0.53		318		334.7
SEF-5-6, Run 3	340		<20	400			4.0		<0.6		160		394.2

TABLE 1B

Inorganic Emissions ($\mu g/M^3$)

Run No.	Cl^-	Cr	Cd	CN^-	F^-	Na	NH_3	Phenol	NO_3^-	SO_4^{-2}	0.1N KOH Solution
SEF-6-7, Run 1		3.04	1.62	56.7		486	105		6.1		366.6 ml
SEF-6-8, Run 2		< .18	3.98	161		420	115		95		407.2
SEF-6-9, Run 3		<1.92	<0.72	175		504	52.8		62.4		436
SEF-7-10, Run 1		5.0	9.1	432		545				182	385.9
SEF-7-11, Run 2		2.76	2.1	897		828				172	575.5
SEF-7-12, Run 3		<2.2	2.2	543		652				272	452.9
EF-2-10, Run 1	252			11.22		701					407.6
EF-2-11, Run 2	358			22.4		605					353.4
EF-2-13, Run 4	150			15.0		863					377.8
3557-15, Run 3		31.2			<31	795	<6.12	7830			326.8
3557-16, Run 4		17.2			<37	748	<7.48	5987			383.8
3557-17, Run 5		20.9			<34	856	<6.85	9380			344.8

TABLE 2

Organic Emissions (ppm)

SEF-5 Bldg. 604	Ethyl acetate	Dichloromethane	Dichloroethane	Toluene
Run 1	.33 ppm (.14)	0.11 (.05)	0.07 (.03)	0.01 (.005)
Run 2	.13 (0.05)	0.08 (0.03)	0.03 (.01)	0.01 (.004)
	( ) = lbs/hr			

TABLE 3

Organic Emissions (ppm)

Bldg. 3557	Run 3	Run 4	Run 5
Methylethylketone	1.84 ppm (4.59)	1.05 (2.56)	1.32 (3.08)
Dichloromethane	19.69 ppm (57.84)	11.72 (33.71)	29.04 (79.8)
Dichloroethane	1.70 ppm (5.82)	0.47 (1.57)	0.99 (3.17)
Toluene	1.14 ppm (3.63)	0.11 (0.34)	0.14 (.45)
Trichloroethylene	0.40 ppm (1.82)	<0.23 (1.02)	0.35 (1.49)
M & P - xylene	0.18 ppm (.66)	<0.07 (0.25)	<0.1 <(.43)
O - xylene	2.14 ppm (7.86)	<0.19 (0.68)	0.57 (1.96)
Chlorobenzene	< .22 ppm (.86)	<0.18 (.69)	<0.23 <(.84)
O - cresol	0.11 ppm (.41)	<0.09 (0.33)	<0.11 <(.38)
M & P cresol	0.79 ppm (2.95)	0.09 (0.33)	<0.11 <(.38)

( ) = lbs/hr

Stack Flow Profile

Run No.	Date	Time	Velocity (ft/min)	Volumetric Flow Rate (DSCFM)	Corrected Sample Volume (DSCF)	Isokineticity (%)	Bldg. No.	Sample Volume at Stack Conditions (CF)
SEF-1-1	8 May 80	1322-1414 1436-1528	2425	41813	78.38	101.0	604	83.37
SEF-1-2	9 May 80	0920-1032 1058-1150	2366	42078	76.64	98.1	604	80.71
SEF-1-3	9 May 80	1357-1449 1512-1604	2420	42282	77.52	98.8	604	81.34
SEF-2-1	8 May 80	1320-1408 1428-1516	1933	21142	58.71	101.9	604	61.87
SEF-2-2	9 May 80	1000-1048 1108-1156	1941	21616	58.87	97.6	604	61.75
SEF-2-3	9 May 80	1300-1348 1400-1448	1978	21469	59.60	99.4	604	62.45
SEF-3-4	12 May 80	0900-0952 1020-1112	2665	36913	83.52	95.6	604	88.95
SEF-3-5	12 May 80	1310-1402 1557-1649	2681	36621	87.26	103.2	604	94.04
SEF-3-6	12 May 80	1300-1352 1414-1506	2673	36615	83.87	96.8	604	89.83
SEF-4-7	13 May 80	1115-1207 1230-1322	2043	30761	66.97	99.2	604	70.73
SEF-4-8	14 May 80	0830-0922 0942-1034	1997	29924	66.41	101.1	604	70.30
SEF-4-9	14 May 80	1100-1152 1213-1305	1999	29377	65.86	102.2	604	71.24
SEF-5-4	13 May 80	1155-1247 1307-1359	2218	33220	73.66	103.5	604	78.18
SEF-5-5	13 May 80	1515-1607 1630-1722	1817	27108	62.60	107.8	604	66.86
SEF-5-6	14 May 80	0943-1035 1056-1048	2038	30345	65.56	100.9	604	69.68

TABLE 4B

Stack Flow Profile

Run No.	Date	Time	Velocity (ft/min)	Volumetric Flow Rate (DSCFM)	Corrected Sample Volume (DSCF)	Isokineticity (%)	Bldg. No.	Sample Volume at Stack Conditions (CF)
SEF-6-7	15 May 80	0935-1023 1044-1132	1998	20916	60.50	101.6	604	63.90
SEF-6-8	15 May 80	1311-1408 1424-1512	2040	20862	60.28	101.5	604	65.03
SEF-6-9	16 May 80	0757-0854 0859-0947	2021	20738	59.58	100.9	604	64.11
SEF-7-10	15 May 80	1000-1048 1110-1158	1822	21344	56.54	103.3	604	59.99
SEF-7-11	15 May 80	1325-1413 1433-1521	1799	20880	55.24	103.2	604	58.92
SEF-7-12	16 May 80	0800-0848 0910-0958	1792	21039	55.05	102.1	604	58.88
CN-8-11	19 May 80	1310-1350 1400-1440	831	1370	48.16	101.7	604	51.32
CN-8-10	20 May 80	0814-0854 0911-0951	916	1526	52.42	99.4	604	55.72
CN-9-13	21 May 80	0818-0848 0904-0934	766	1263	33.21	101.4	604	35.56
3557-15	20 May 80	1300-1412 1433-1545	2566	230184	35.56	108.9	3557	37.64
3557-16	21 May 80	0840-0952 1012-1124	2503	226168	34.47	107.4	3557	36.22
3557-17	21 May 80	1300-1412 1420-1532	2412	216153	33.56	109.4	3557	35.57

TABLE 5

OSHA Concentrations
(Time Weighed Averages)

Chemical Specie	ppm	mg/M^3
Ammonia	50	35
Cadmium oxide fume		0.1
Chlorobenzene	75	350
Chromium		0.5
Copper dust		1.0
Copper fume		0.1
Cresol	5	22
Cyanide		5
Dichloromethane	500	1740
Ethyl acetate	400	1400
Fluoride		2.5
Hydrogen Chloride	5	7
Methy ethyl ketone	200	590
Nickel		1.0
Nitric acid	2	5
Phenol	5	19
Phosphoric acid		1
Silver		0.1
Sodium hydroxide		2
Sulfuric acid		1
Tin		2
Toluene	200	750
Trichloroethylene	100	535
Xylene	5	25

TABLE 6

Voltage and Current Readings, Bldg. 604

Date	Time	Volts	Amps	Location	Test
8 May 1980	1300-1350	40	400	Anodize	SEF-2-1
	1355-1455	40	700	Anodize	
9 May 1980	0910-1000	40	300	Anodize	SEF-2-2
	1035-1135	40	125	Anodize	SEF-2-2
	1355-1450	40	400	Anodize	SEF-2-3
12 May 1980	0700-1344	5	150	Tank 367	SEF-3-4
		6	1400	Tank 355	SEF-3-4
		6.5	17	Tank 351	SEF-3-4
		6.8	110	Tank 503, Bay #1	SEF-3-4
		5.8	72	Tank 503, Bay #2	SEF-3-4
		8.5	700	Tank 353, Bay #1	SEF-3-4
		6	300	Tank 353, Bay #2	SEF-3-4
	0700-0800	9	200	Tank 366, Bay #1	SEF-3-4
	0700-1100	5	300	Tank 366, Bay #2	SEF-3-4
	1434-1650	6	1400	Tank 355	SEF-3-5 and
	1454-1650	5	150	Tank 367	SEF-3-6
		6.5	17	Tank 351	SEF-3-6
		6.8	110	Tank 503, Bay #1	SEF-3-6
		5.8	72	Tank 503, Bay #2	SEF-3-6
		8.5	700	Tank 353, Bay #1	SEF-3-6
		6	300	Tank 353, Bay #2	SEF-3-6
	1500-1650	6	160	Tank 366, Bay #2	SEF-3-6
13 May 1980	1147-1156	8	2.5	Selective area	SEF-4-7
	1206-1209	8	2.5	Selective area	SEF-4-7
	1217-1218	14	1.0	Selective area	SEF-4-7
	1226-1310	8	2.5	Selective area	SEF-4-7
	0700-1200	3.5	25	Tank 506	SEF-5-4
		2.75	4.3	Tank 430	SEF-5-4
		3.2	48	Tank 430	SEF-5-4
14 May 1980	0840-1130	6.75	112	Tank 506	SEF-5-6
		5.75	56	Tank 430	SEF-5-6
	0800-1425	2	9	Tank 435	SEF-5-6
15 May 1980	0900-1520	3.2	100	Still tank	SEF-6-7 & 8
	1130-1520	3	50	Auto. cad. machine	SEF-6-9
16 May 1980	0810-1200	3	60	Still tank	SEF-6-9
		3	50	Auto. cad. machine	SEF-7-12

TABLE 7

Chemical Compounds Used in Aircraft Paint Stripping, Bldg. 3557

Time/Compounds	1250-1545 20 May 80 (Run 3)	0845-1200 21 May 80 (Run 4)	1250-1530 21 May 80 (Run 5)
MEK	0	0	0
Grease emulsifier	0	0	20 gal
Acrylic stripper	50 gal	0	50 gal
Expoxy stripper	20 gal	70 gal	150 gal
Detergent	0	0	100 gal

TABLE 8

Chemical Usage for VAT Area in Bldg. 3557
Between 1 May 1979 to 30 April 1980

Chemical	Amount Used (gal)
B & B 7219 T	1595
Orthodichlorobenzene	300
MIL-R-81903 (thin)	3575
MIL-D-26549	2585
MIL-R-81835	5445
Trichloroethylene	825
MIL-C-19853	3795
Dichloromethane	3740
1,1,1 - Trichloroethane (estimated)	1100
Sodium hydroxide	2400 pounds
Chromic acid	2000

APPENDIX A

CALCULATIONS

Calculation

from mg/l in KOH solution to $\mu g/M^3$ in stack

mg/l for inorganic pollutant, obtained from lab. analysis

1 mg = 1000 µg

$1\ M^3 = 35.3147\ ft^3$

$$\text{mg/l} \times (\text{volume of KOH solution}) \times \frac{1000\ \mu g}{mg} \times \frac{35.3147\ ft^3}{M^3} \times \frac{1}{\text{volume of stack gas}}$$

$= \mu g/M^3$

Example Run 1, SEF 1 Na

for lab. result Na = 1.7 mg/l

$$1.7\ \text{mg/l}\ (.4064\ 1) \times \frac{1000\ \mu g}{mg} \times \frac{35.3147\ ft^3}{M^3} \times \frac{1}{83.37\ ft^3} = 292.7\ \mu g/M^3$$

Calculation

from ppm of MEK as reported in lab analysis to ppm in stack

ppm (lab analysis) $\simeq 1\ \mu l_\ell / l_\ell$

For MEK in Run Run 3557-15

$$\text{Total } \mu l_\ell \text{ of MEK} = 60 \text{ ppm} \times \frac{0.001\ l}{\text{grams of carbon}} \times 110.9 \text{ grams of carbon} = 6.65\ \mu l_\ell$$

Convert l_ℓ to l_g

$$6.65\ \mu l_\ell \times \frac{0.805\ g}{10^3\ l_\ell} \times \frac{\text{mole}}{72.1\ g} \times \frac{22.4\ l_g}{\text{mole}} \left(\frac{542\ ^\circ K}{460\ ^\circ K}\right)$$

Vol of MEK = 1959.62 μl_g at stack conditions

$$\frac{\text{Vol of MEK}}{\text{Vol of stack gas sampled}} = \text{ppm at stack for MEK}$$

$$\frac{1959.62\ \mu l_g}{37.64\ ft^3 \times \frac{l_g}{0.0353\ ft^3}} = 1.84 \text{ ppm MEK}$$

TABLE 1: INPUT DATA

RUN # 1 , SEP 1

PT.NO.	DELTA P ('')H20)	TS ('F)	TM ('F)	DELTA H ('')H20)
1	0.670	83	83	2.786
2	0.680	83	83	2.827
3	0.650	81	86	2.728
4	0.620	80	91	2.631
5	0.600	81	95	2.559
6	0.570	81	100	2.453
7	0.540	82	104	2.336
8	0.500	82	108	2.179
9	0.480	88	111	2.080
10	0.470	90	114	2.040
11	0.460	91	116	1.999
12	0.460	90	117	2.007
13	0.470	88	118	2.061
14	0.430	90	121	1.889
15	0.420	90	123	1.851
16	0.420	89	123	1.855
17	0.430	84	123	1.916
18	0.390	81	123	1.748
19	0.370	82	122	1.652
20	0.340	82	122	1.518
21	0.320	82	122	1.429
22	0.285	82	122	1.273
23	0.270	82	122	1.206
24	0.240	81	121	1.072
25	0.230	82	120	1.023
26	0.230	83	119	1.020
27	0.700	88	93	2.937
28	0.700	88	92	2.932
29	0.750	89	96	3.158
30	0.780	89	101	3.314
31	0.790	89	106	3.387
32	0.750	89	110	3.238
33	0.700	89	112	3.033
34	0.650	89	114	2.826
35	0.580	89	116	2.530
36	0.530	89	116	2.312
37	0.480	89	117	2.098
38	0.450	90	118	1.966
39	0.400	89	117	1.748
40	0.440	89	118	1.926
41	0.470	87	117	2.061
42	0.500	87	118	2.197
43	0.510	87	119	2.245
44	0.510	87	120	2.249
45	0.520	87	109	2.249
46	0.520	86	111	2.261
47	0.520	86	114	2.273
48	0.520	86	116	2.281
49	0.520	86	117	2.285
50	0.530	85	118	2.337
51	0.460	85	118	2.029
52	0.470	85	119	2.0760
AVE	0.506	86	112	2.1940

TABLE 1: INPUT DATA

RUN # 2 , SEF 1

PT.NO.	DELTA P ('' H20)	TS ('F)	TM ('F)	DELTA H ('' H20)
1	0.715	75	70	2.912
2	0.700	76	71	2.851
3	0.715	76	77	2.945
4	0.765	77	84	3.186
5	0.775	77	89	3.257
6	0.740	78	95	3.138
7	0.690	77	100	2.958
8	0.645	77	105	2.790
9	0.540	78	108	2.344
10	0.490	77	110	2.138
11	0.450	77	111	1.967
12	0.410	78	85	1.707
13	0.400	78	86	1.669
14	0.450	78	91	1.895
15	0.495	79	95	2.095
16	0.525	78	100	2.246
17	0.545	78	105	2.353
18	0.570	78	109	2.478
19	0.570	78	112	2.491
20	0.560	79	114	2.452
21	0.575	79	116	2.526
22	0.530	79	118	2.336
23	0.515	81	120	2.270
24	0.515	81	121	2.274
25	0.515	79	122	2.286
26	0.500	75	124	2.244
27	0.595	71	93	2.543
28	0.605	73	95	2.576
29	0.585	74	95	2.498
30	0.555	74	102	2.401
31	0.540	71	108	2.375
32	0.525	72	112	2.320
33	0.475	71	116	2.118
34	0.445	70	120	2.002
35	0.425	70	123	1.918
36	0.410	68	123	1.861
37	0.400	68	123	1.816
38	0.410	66	124	1.871
39	0.400	65	125	1.832
40	0.360	64	127	1.658
41	0.420	64	128	1.937
42	0.420	63	130	1.948
43	0.385	66	130	1.775
44	0.385	69	130	1.765
45	0.350	69	131	1.607
46	0.330	70	132	1.515
47	0.325	71	132	1.489
48	0.325	69	132	1.495
49	0.290	70	132	1.332
50	0.290	72	133	1.329
51	0.250	71	133	1.148
52	0.250	70	133	1.1500
AVE	0.493	74	111	2.1560

TABLE 1: INPUT DATA

RUN # 3, SEF 1

PT.NO.	DELTA P ("H2O)	TS (°F)	TM (°F)	DELTA H ("H2O)
1	0.645	79	83	2.715
2	0.640	78	86	2.714
3	0.625	78	92	2.679
4	0.600	78	97	2.596
5	0.575	78	101	2.505
6	0.540	79	107	2.374
7	0.520	79	111	2.302
8	0.480	77	113	2.140
9	0.450	77	116	2.017
10	0.440	76	117	1.979
11	0.445	76	118	2.005
12	0.455	77	120	2.053
13	0.450	78	122	2.034
14	0.440	80	124	1.988
15	0.400	80	125	1.811
16	0.400	79	125	1.814
17	0.410	80	126	1.859
18	0.400	82	128	1.813
19	0.400	78	129	1.830
20	0.370	76	130	1.702
21	0.340	75	131	1.569
22	0.320	73	130	1.480
23	0.315	74	131	1.457
24	0.300	72	130	1.390
25	0.290	72	130	1.344
26	0.260	72	130	1.205
27	0.750	85	97	3.203
28	0.770	85	99	3.300
29	0.780	86	105	3.372
30	0.790	87	111	3.446
31	0.790	86	118	3.494
32	0.750	87	123	3.340
33	0.670	88	124	2.983
34	0.610	88	127	2.730
35	0.540	88	129	2.425
36	0.490	89	132	2.208
37	0.440	90	131	1.976
38	0.400	90	129	1.790
39	0.390	89	128	1.745
40	0.450	89	127	2.010
41	0.500	88	126	2.234
42	0.530	87	126	2.372
43	0.550	88	127	2.462
44	0.550	87	129	2.475
45	0.565	85	131	2.560
46	0.560	84	132	2.546
47	0.540	83	135	2.472
48	0.530	84	136	2.426
49	0.535	85	135	2.440
50	0.510	86	136	2.326
51	0.430	86	137	1.964
52	0.430	86	137	1.9640
AVE	0.507	82	122	2.2620

TABLE 1: INPUT DATA

RUN # 1, SEF 2

PT.NO.	DELTA P ('')H2O)	TS ('F)	TM ('F)	DELTA H ('')H2O)
1	0.390	80	87	1.585
2	0.390	80	87	1.585
3	0.380	78	99	1.584
4	0.370	76	99	1.548
5	0.350	78	103	1.469
6	0.340	81	108	1.432
7	0.340	83	112	1.437
8	0.340	85	116	1.442
9	0.330	85	120	1.409
10	0.320	84	123	1.376
11	0.300	85	126	1.294
12	0.280	86	128	1.205
13	0.260	86	128	1.119
14	0.270	86	129	1.164
15	0.280	83	127	1.214
16	0.290	80	125	1.260
17	0.310	80	124	1.345
18	0.310	80	125	1.342
19	0.310	80	127	1.344
20	0.310	85	127	1.339
21	0.280	85	129	1.214
22	0.250	85	129	1.084
23	0.180	85	127	0.778
24	0.180	84	123	0.774
25	0.330	84	95	1.351
26	0.330	84	95	1.351
27	0.320	84	99	1.319
28	0.310	84	105	1.292
29	0.290	85	108	1.212
30	0.290	85	112	1.221
31	0.270	85	114	1.141
32	0.260	85	115	1.100
33	0.260	85	115	1.100
34	0.250	83	115	1.062
35	0.260	82	115	1.107
36	0.260	80	114	1.109
37	0.280	79	114	1.196
38	0.280	78	113	1.196
39	0.310	78	114	1.327
40	0.340	77	114	1.458
41	0.370	76	114	1.590
42	0.390	76	114	1.675
43	0.410	76	115	1.764
44	0.450	76	117	1.943
45	0.450	77	118	1.943
46	0.470	78	119	2.029
47	0.440	78	119	1.900
48	0.410	78	119	1.770
AVE	0.321	82	115	1.365

TABLE 1: INPUT DATA

RUN # 2 , SEF 2

PT.NO.	DELTA P (" H2O)	TS (°F)	TM (°F)	DELTA H (" H2O)
1	0.380	75	71	1.588
2	0.380	78	74	1.589
3	0.400	79	86	1.707
4	0.390	78	91	1.682
5	0.370	79	96	1.607
6	0.350	81	101	1.529
7	0.350	81	105	1.539
8	0.320	81	108	1.415
9	0.310	81	111	1.378
10	0.310	82	113	1.380
11	0.300	83	115	1.338
12	0.300	84	117	1.340
13	0.300	85	117	1.338
14	0.330	86	120	1.476
15	0.360	86	121	1.613
16	0.380	86	123	1.709
17	0.420	85	124	1.896
18	0.440	86	126	1.989
19	0.440	87	129	1.995
20	0.440	87	130	1.999
21	0.410	87	132	1.869
22	0.410	86	133	1.875
23	0.200	85	133	0.917
24	0.190	85	133	0.871
25	0.380	77	109	1.696
26	0.380	78	113	1.705
27	0.380	77	116	1.717
28	0.370	77	119	1.680
29	0.350	77	123	1.600
30	0.340	78	126	1.560
31	0.320	76	128	1.479
32	0.320	77	129	1.478
33	0.320	80	131	1.475
34	0.310	77	131	1.437
35	0.300	77	132	1.393
36	0.300	79	133	1.390
37	0.270	80	134	1.251
38	0.280	85	134	1.285
39	0.270	86	134	1.237
40	0.260	87	135	1.191
41	0.260	89	136	1.189
42	0.250	89	136	1.143
43	0.260	88	136	1.191
44	0.260	86	136	1.195
45	0.260	87	137	1.195
46	0.180	87	137	0.827
47	0.100	86	137	0.461
48	0.100	85	136	0.461
AVE	0.319	82	121	1.435

TABLE 1: INPUT DATA

RUN # 3 , SEF 2

PT.NO.	DELTA P ('' H2O)	TS ('F)	TM ('F)	DELTA H ('' H2O)
1	0.350	76	89	1.510
2	0.350	77	93	1.515
3	0.340	78	98	1.485
4	0.330	78	103	1.454
5	0.330	77	107	1.468
6	0.330	78	112	1.478
7	0.330	79	116	1.485
8	0.320	79	119	1.448
9	0.310	79	121	1.407
10	0.310	78	124	1.417
11	0.280	80	126	1.280
12	0.270	81	128	1.236
13	0.270	81	130	1.240
14	0.260	84	132	1.192
15	0.250	82	133	1.152
16	0.250	82	134	1.154
17	0.290	80	134	1.344
18	0.290	78	134	1.349
19	0.330	79	136	1.490
20	0.330	79	136	1.490
21	0.330	81	138	1.536
22	0.330	81	139	1.539
23	0.300	84	140	1.394
24	0.290	84	141	1.349
25	0.320	94	118	1.406
26	0.330	98	120	1.445
27	0.330	98	123	1.452
28	0.330	126	125	1.341
29	0.290	126	128	1.226
30	0.270	97	130	1.205
31	0.250	97	131	1.117
32	0.230	96	133	1.033
33	0.230	96	135	1.037
34	0.240	96	136	1.084
35	0.250	96	137	1.131
36	0.260	99	138	1.171
37	0.280	98	138	1.264
38	0.290	97	138	1.311
39	0.350	94	139	1.594
40	0.380	95	140	1.730
41	0.390	94	141	1.782
42	0.420	94	142	1.922
43	0.430	94	142	1.968
44	0.460	93	145	2.120
45	0.470	94	145	2.162
46	0.470	96	147	2.161
47	0.420	149	147	1.763
48	0.410	97	150	1.891
AVE	0.322	90	130	1.453

TABLE 1: INPUT DATA

RUN # 4 , SEF 3

PT.NO.	DELTA P ('')H2O)	TS ('F)	TM ('F)	DELTA H ('')H2O)
1	0.780	86	83	3.271
2	0.780	87	87	3.289
3	0.800	87	92	3.404
4	0.780	87	99	3.361
5	0.770	88	106	3.353
6	0.770	88	112	3.389
7	0.760	88	117	3.374
8	0.730	88	121	3.263
9	0.720	88	124	3.235
10	0.690	88	127	3.116
11	0.670	88	129	3.036
12	0.630	88	132	2.870
13	0.630	88	133	2.875
14	0.580	88	133	2.646
15	0.550	90	134	2.505
16	0.520	90	135	2.372
17	0.510	90	136	2.330
18	0.500	90	137	2.288
19	0.490	91	137	2.239
20	0.490	91	138	2.242
21	0.470	91	138	2.151
22	0.470	91	139	2.154
23	0.440	92	139	2.013
24	0.430	92	140	1.971
25	0.430	92	140	1.971
26	0.410	92	141	1.882
27	0.540	90	115	2.380
28	0.520	90	117	2.300
29	0.530	90	121	2.361
30	0.570	89	126	2.565
31	0.610	89	130	2.764
32	0.650	90	133	2.955
33	0.690	90	135	3.147
34	0.770	90	139	3.536
35	0.780	90	141	3.594
36	0.840	90	144	3.890
37	0.860	90	146	3.995
38	0.880	90	149	4.109
39	0.780	90	149	3.642
40	0.580	89	153	2.731
41	0.540	89	153	2.542
42	0.530	89	152	2.491
43	0.530	90	150	2.479
44	0.510	89	149	2.385
45	0.500	89	149	2.339
46	0.450	90	149	2.101
47	0.400	90	148	1.864
48	0.360	91	147	1.672
49	0.300	91	146	1.391
50	0.260	90	146	1.208
51	0.230	90	145	1.067
52	0.190	90	143	0.8780
AVE	0.581	90	133	2.630

TABLE 1: INPUT DATA

RUN # 6 , SEF 3

PT.NO.	DELTA P ("H20)	TS ('F)	TM ('F)	DELTA H ("H20)
1	0.580	91	90	.437
2	0.540	91	93	.281
3	0.530	91	102	.276
4	0.570	91	108	.474
5	0.600	91	114	.631
6	0.680	93	120	.002
7	0.710	93	120	.135
8	0.780	94	127	.479
9	0.850	93	130	.818
10	0.870	94	133	.920
11	0.900	93	136	4.083
12	0.890	93	139	4.058
13	0.810	93	90	.397
14	0.580	93	96	.459
15	0.530	93	103	.271
16	0.540	93	106	.331
17	0.520	93	109	.358
18	0.510	93	112	.321
19	0.510	93	114	.332
20	0.460	93	117	.024
21	0.460	93	119	.027
22	0.410	93	121	1.8113
23	0.400	90	122	1.782
24	0.360	90	123	1.606
25	0.280	89	124	1.254
26	0.270	89	125	1.211
27	0.750	92	97	.186
28	0.750	93	102	.209
29	0.770	93	109	.341
30	0.760	93	115	.327
31	0.750	93	119	.306
32	0.740	93	123	.284
33	0.730	93	126	.256
34	0.710	93	128	.178
35	0.690	93	129	.094
36	0.640	93	131	.879
37	0.620	93	132	.794
38	0.600	93	133	.708
39	0.570	93	133	.578
40	0.560	93	133	.533
41	0.510	93	133	.306
42	0.500	93	134	.265
43	0.480	91	134	.178
44	0.470	91	134	.133
45	0.460	93	135	.087
46	0.460	93	135	.087
47	0.460	93	136	.091
48	0.420	93	135	1.906
49	0.440	93	135	1.997
50	0.410	93	134	1.857
51	0.410	93	135	1.860
52	0.350	91	134	1.5880
AVE	0.580	92	121	2.570

TABLE 1: INPUT DATA

RUN # 7 , SEF 4

PT.NO.	DELTA P ('' H2O)	TS ('F)	TM ('F)	DELTA H ('' H2O)
1	0.470	88	89	1.983
2	0.480	88	91	2.033
3	0.480	88	96	2.051
4	0.440	88	103	1.904
5	0.420	88	106	1.827
6	0.400	88	110	1.752
7	0.360	88	112	1.583
8	0.340	88	113	1.497
9	0.320	88	114	1.412
10	0.310	88	116	1.372
11	0.290	89	116	1.281
12	0.280	88	117	1.242
13	0.260	88	118	1.155
14	0.220	88	117	0.976
15	0.230	88	117	1.020
16	0.240	88	116	1.062
17	0.220	88	116	0.974
18	0.210	88	118	0.933
19	0.200	88	118	0.888
20	0.180	88	118	0.800
21	0.170	88	117	0.754
22	0.160	88	116	0.708
23	0.160	88	117	0.710
24	0.150	88	116	0.664
25	0.150	88	117	0.665
26	0.130	87	118	0.579
27	0.530	88	98	2.373
28	0.520	87	98	2.334
29	0.550	87	104	2.388
30	0.550	87	111	2.418
31	0.560	87	114	2.475
32	0.560	87	117	2.488
33	0.550	87	119	2.452
34	0.540	87	120	2.411
35	0.500	87	121	2.237
36	0.460	87	122	2.061
37	0.410	87	122	1.837
38	0.340	87	120	1.518
39	0.280	87	120	1.250
40	0.240	87	120	1.072
41	0.260	87	119	1.159
42	0.280	87	118	1.246
43	0.360	87	118	1.602
44	0.400	87	118	1.780
45	0.440	87	118	1.958
46	0.480	87	119	2.140
47	0.480	87	120	2.143
48	0.460	86	121	2.061
49	0.430	86	121	1.927
50	0.380	86	123	1.709
51	0.360	86	123	1.619
52	0.320	86	122	1.437
AVE	0.356	87	115	1.572

TABLE 1: INPUT DATA

RUN # 8 , SEF 4

PT.NO.	DELTA P ('' H20)	TS ('F)	TM ('F)	DELTA H ('' H20)
1	0.500	87	84	2.094
2	0.500	87	92	2.125
3	0.490	87	97	2.101
4	0.460	87	102	1.990
5	0.440	87	107	1.921
6	0.410	87	110	1.799
7	0.380	87	113	1.676
8	0.350	87	115	1.549
9	0.320	87	117	1.422
10	0.320	87	118	1.424
11	0.300	87	119	1.337
12	0.290	86	119	1.295
13	0.260	86	119	1.161
14	0.230	86	119	1.027
15	0.230	87	118	1.024
16	0.230	87	118	1.024
17	0.230	88	118	1.022
18	0.200	88	118	0.888
19	0.180	88	118	0.800
20	0.170	89	119	0.755
21	0.160	89	119	0.711
22	0.160	90	120	0.711
23	0.150	88	120	0.669
24	0.150	90	120	0.666
25	0.120	90	120	0.533
26	0.120	89	120	0.534
27	0.500	89	99	2.144
28	0.500	89	102	2.156
29	0.520	89	107	2.262
30	0.550	88	112	2.418
31	0.560	89	116	2.474
32	0.560	88	118	2.488
33	0.550	88	121	2.456
34	0.530	88	122	2.371
35	0.480	88	122	2.147
36	0.430	87	122	1.927
37	0.400	87	122	1.792
38	0.340	87	122	1.524
39	0.280	88	122	1.252
40	0.220	88	121	0.982
41	0.250	88	120	1.114
42	0.300	87	120	1.340
43	0.350	87	121	1.566
44	0.390	88	121	1.741
45	0.410	88	122	1.834
46	0.440	88	123	1.971
47	0.440	88	124	1.975
48	0.420	88	125	1.888
49	0.400	88	126	1.801
50	0.330	88	126	1.486
51	0.330	89	125	1.481
52	0.330	89	125	1.481
AVE	0.349	88	117	1.545

TABLE 1: INPUT DATA

RUN # 9 , SEF 4

PT.NO.	DELTA P ("H2O)	TS (°F)	TM (°F)	DELTA H ("H2O)
1	0.540	90	89	2.270
2	0.540	90	95	2.295
3	0.560	90	99	2.397
4	0.560	90	105	2.423
5	0.590	90	110	2.575
6	0.580	90	113	2.545
7	0.560	90	117	2.474
8	0.550	90	119	2.438
9	0.510	90	119	2.261
10	0.460	90	122	2.050
11	0.400	90	123	1.786
12	0.350	90	124	1.565
13	0.290	90	122	1.292
14	0.220	90	122	0.980
15	0.250	90	121	1.112
16	0.280	90	121	1.246
17	0.350	90	121	1.557
18	0.390	90	122	1.738
19	0.420	90	123	1.875
20	0.420	90	125	1.881
21	0.410	90	126	1.840
22	0.380	90	126	1.705
23	0.350	90	127	1.573
24	0.270	90	127	1.214
25	0.270	90	128	1.216
26	0.270	90	128	1.216
27	0.470	91	102	2.019
28	0.470	91	105	2.030
29	0.470	91	108	2.040
30	0.450	91	113	1.971
31	0.430	92	116	1.890
32	0.380	92	118	1.676
33	0.360	92	118	1.588
34	0.330	92	122	1.465
35	0.330	92	123	1.468
36	0.310	92	123	1.379
37	0.310	91	124	1.384
38	0.300	92	125	1.339
39	0.260	92	125	1.160
40	0.230	93	125	1.025
41	0.230	92	125	1.027
42	0.240	92	124	1.069
43	0.220	93	123	0.977
44	0.200	93	123	0.888
45	0.190	94	122	0.841
46	0.170	94	121	0.751
47	0.160	94	120	0.705
48	0.160	93	120	0.707
49	0.150	93	120	0.663
50	0.140	92	120	0.620
51	0.140	92	120	0.620
52	0.140	92	120	0.620
AVE	0.346	91	119	1.528

TABLE 1: INPUT DATA

RUN # 4 , SEF 5

PT.NO.	DELTA P ("H2O)	TS ('F)	TM ('F)	DELTA H ("H2O)
1	0.450	87	91	2.024
2	0.440	88	88	1.965
3	0.430	86	97	1.959
4	0.430	86	104	1.983
5	0.420	86	97	1.913
6	0.420	86	100	1.923
7	0.400	86	105	1.848
8	0.370	87	111	1.725
9	0.370	86	114	1.737
10	0.350	87	116	1.646
11	0.310	87	117	1.460
12	0.290	87	117	1.366
13	0.230	87	118	1.085
14	0.200	87	119	0.945
15	0.180	87	119	0.851
16	0.210	87	118	0.991
17	0.230	87	118	1.085
18	0.240	87	119	1.134
19	0.270	86	120	1.281
20	0.265	86	121	1.259
21	0.280	86	122	1.333
22	0.300	86	121	1.425
23	0.310	86	120	1.470
24	0.315	86	121	1.497
25	0.280	86	122	1.333
26	0.280	85	123	1.337
27	0.580	86	96	.637
28	0.570	86	97	.596
29	0.575	86	101	.638
30	0.560	86	107	.597
31	0.560	86	113	.624
32	0.570	86	113	.671
33	0.570	86	116	.685
34	0.565	86	118	.671
35	0.565	86	119	.675
36	0.565	86	120	.680
37	0.560	86	121	.661
38	0.555	86	123	.646
39	0.555	86	124	.507
40	0.555	87	126	.511
41	0.555	87	126	.511
42	0.520	87	126	.487
43	0.515	87	126	.463
44	0.515	87	126	.463
45	0.515	87	126	.463
46	0.505	87	126	.416
47	0.505	86	127	.424
48	0.505	86	129	.432
49	0.500	86	129	.408
50	0.500	86	130	.412
51	0.460	83	131	2.235
52	0.460	81	133	2.251
AVE	0.426	86	117	2.007

TABLE 1: INPUT DATA

RUN # 5, SEFS

PT.NO.	DELTA P (")H2O)	TS (°F)	TM (°F)	DELTA H (")H2O)
1	0.250	87	93	1.115
2	0.250	87	97	1.123
3	0.250	86	99	1.129
4	0.250	86	105	1.141
5	0.245	87	110	1.126
6	0.240	87	114	1.111
7	0.240	87	117	1.117
8	0.230	88	119	1.072
9	0.230	88	121	1.075
10	0.230	88	121	1.075
11	0.225	88	122	1.054
12	0.215	88	123	1.009
13	0.200	88	125	0.942
14	0.205	88	125	0.965
15	0.200	87	125	0.943
16	0.190	87	125	0.896
17	0.190	87	126	0.898
18	0.185	87	127	0.876
19	0.180	87	127	0.852
20	0.175	87	127	0.828
21	0.170	87	127	0.805
22	0.165	87	127	0.781
23	0.160	87	125	0.755
24	0.160	85	125	0.757
25	0.160	85	125	0.757
26	0.155	84	126	0.736
27	0.450	88	102	2.035
28	0.450	87	99	2.028
29	0.440	88	105	2.001
30	0.430	87	112	1.983
31	0.415	87	118	1.934
32	0.410	87	121	1.921
33	0.400	87	124	1.884
34	0.395	87	126	1.866
35	0.390	87	126	1.843
36	0.390	87	128	1.849
37	0.385	87	131	1.835
38	0.380	87	133	1.817
39	0.380	87	134	1.820
40	0.370	87	134	1.772
41	0.370	87	134	1.772
42	0.370	87	134	1.772
43	0.365	87	134	1.748
44	0.360	87	135	1.727
45	0.360	87	135	1.727
46	0.355	87	135	1.703
47	0.355	87	136	1.706
48	0.295	87	136	1.418
49	0.250	86	136	1.204
50	0.250	86	135	1.202
51	0.250	85	135	1.204
52	0.250	85	135	1.204
AVE	0.286	87	123	1.344

TABLE 1: INPUT DATA

RUN # 6 , SEF 5

PT.NO.	DELTA P ('' H20)	TS ('F)	TM ('F)	DELTA H ('' H20)
1	0.460	84	85	1.840
2	0.455	84	88	1.830
3	0.455	85	92	1.840
4	0.440	84	99	1.805
5	0.435	84	102	1.794
6	0.420	84	105	1.742
7	0.395	85	109	1.647
8	0.385	85	110	1.608
9	0.360	85	112	1.509
10	0.345	86	113	1.446
11	0.315	86	114	1.322
12	0.285	88	113	1.190
13	0.250	88	112	1.042
14	0.200	88	112	0.833
15	0.180	89	112	0.749
16	0.210	88	111	0.874
17	0.240	87	111	1.000
18	0.255	86	111	1.065
19	0.265	86	112	1.108
20	0.275	86	113	1.152
21	0.295	85	113	1.236
22	0.305	87	113	1.276
23	0.310	86	113	1.299
24	0.325	86	113	1.362
25	0.325	86	113	1.362
26	0.320	85	113	1.343
27	0.285	86	90	1.353
28	0.290	86	90	1.373
29	0.275	86	94	1.229
30	0.275	86	103	1.367
31	0.270	86	106	1.359
32	0.270	86	110	1.376
33	0.250	86	111	1.296
34	0.245	87	113	1.279
35	0.225	86	114	1.204
36	0.190	86	115	1.060
37	0.140	87	116	1.850
38	0.385	86	116	1.622
39	0.280	87	116	1.177
40	0.200	87	116	0.841
41	0.220	87	115	0.923
42	0.240	87	113	1.004
43	0.240	87	113	1.004
44	0.245	87	114	1.026
45	0.240	87	114	1.006
46	0.235	87	115	0.986
47	0.240	87	115	1.007
48	0.240	87	116	1.009
49	0.230	87	117	0.969
50	0.230	86	117	0.970
51	0.230	85	117	0.972
52	0.230	85	117	0.972
AVE	0.350	86	110	1.450

TABLE 1: INPUT DATA

RUN # 7 , SEF 6

PT.NO.	DELTA P ("H20)	TS (°F)	TM (°F)	DELTA H ("H20)
1	0.310	80	80	1.230
2	0.330	80	80	1.309
3	0.350	79	86	1.407
4	0.375	78	94	1.532
5	0.395	79	94	1.611
6	0.400	80	98	1.640
7	0.410	80	101	1.690
8	0.410	80	104	1.699
9	0.410	80	108	1.711
10	0.410	80	111	1.720
11	0.400	80	113	1.684
12	0.395	80	113	1.663
13	0.220	81	100	0.903
14	0.235	81	95	0.956
15	0.235	82	98	0.960
16	0.245	82	103	1.010
17	0.245	82	105	1.013
18	0.275	82	107	1.141
19	0.300	82	107	1.245
20	0.330	82	111	1.379
21	0.365	81	113	1.534
22	0.365	82	115	1.536
23	0.375	82	116	1.581
24	0.370	82	117	1.563
25	0.400	81	97	1.634
26	0.400	80	99	1.643
27	0.390	79	99	1.605
28	0.390	79	105	1.622
29	0.385	79	111	1.618
30	0.380	79	113	1.603
31	0.385	79	115	1.629
32	0.370	79	117	1.571
33	0.370	79	117	1.571
34	0.370	78	118	1.577
35	0.355	78	118	1.513
36	0.350	77	119	1.497
37	0.330	78	120	1.411
38	0.330	78	120	1.411
39	0.320	77	120	1.371
40	0.340	76	121	1.462
41	0.320	77	121	1.374
42	0.325	77	121	1.395
43	0.310	78	121	1.328
44	0.325	77	121	1.395
45	0.315	77	121	1.352
46	0.290	78	122	1.245
47	0.270	78	123	1.161
48	0.255	78	123	1.096
AVE	0.342	79	109	1.433

TABLE 1: INPUT DATA

RUN # 8, SEF 6

PT.NO.	DELTA P ('' H2O)	TS ('F)	TM ('F)	DELTA H ('' H2O)
1	0.320	85	89	1.279
2	0.325	85	90	1.301
3	0.350	85	94	1.412
4	0.410	84	99	1.672
5	0.415	85	104	1.704
6	0.415	87	108	1.710
7	0.415	86	111	1.722
8	0.415	86	114	1.731
9	0.405	86	116	1.695
10	0.405	86	118	1.701
11	0.400	87	120	1.683
12	0.405	87	122	1.710
13	0.230	91	106	0.937
14	0.225	92	107	0.917
15	0.235	92	110	0.963
16	0.240	92	112	0.987
17	0.260	92	114	1.073
18	0.280	92	117	1.161
19	0.310	92	120	1.292
20	0.330	93	122	1.378
21	0.365	94	124	1.527
22	0.370	94	125	1.550
23	0.375	94	127	1.577
24	0.375	94	128	1.579
25	0.380	90	107	1.554
26	0.370	90	109	1.519
27	0.370	91	113	1.527
28	0.370	91	116	1.535
29	0.370	91	120	1.545
30	0.365	91	122	1.530
31	0.365	91	124	1.535
32	0.365	90	125	1.540
33	0.365	90	127	1.546
34	0.360	90	129	1.530
35	0.360	91	129	1.527
36	0.355	91	130	1.508
37	0.350	92	131	1.487
38	0.350	92	132	1.489
39	0.350	93	132	1.487
40	0.345	93	133	1.468
41	0.340	95	133	1.441
42	0.335	96	134	1.420
43	0.330	96	135	1.401
44	0.325	97	135	1.377
45	0.320	98	135	1.354
46	0.320	98	135	1.354
47	0.315	98	135	1.333
48	0.310	97	136	1.316
AVE	0.347	91	120	1.450

TABLE 1: INPUT DATA

RUN # 9 , SEF 6

PT.NO.	DELTA P ("H2O)	TS (°F)	TM (°F)	DELTA H ("H2O)
1	0.315	81	82	1.247
2	0.330	84	83	1.302
3	0.360	84	87	1.430
4	0.410	84	93	1.647
5	0.405	84	96	1.636
6	0.415	84	101	1.691
7	0.405	84	106	1.665
8	0.410	84	109	1.695
9	0.420	84	112	1.745
10	0.420	84	115	1.754
11	0.420	85	116	1.754
12	0.415	85	118	1.739
13	0.225	86	103	0.917
14	0.225	86	107	0.923
15	0.225	86	109	0.927
16	0.230	86	112	0.952
17	0.230	86	113	0.954
18	0.250	86	115	1.040
19	0.270	86	117	1.127
20	0.295	87	120	1.236
21	0.340	87	121	1.427
22	0.340	87	123	1.432
23	0.335	87	125	1.416
24	0.345	89	127	1.458
25	0.450	90	111	1.846
26	0.450	90	116	1.862
27	0.460	90	119	1.914
28	0.455	91	121	1.896
29	0.430	91	124	1.801
30	0.430	91	126	1.807
31	0.430	92	128	1.810
32	0.420	92	128	1.768
33	0.405	92	129	1.708
34	0.380	92	129	1.602
35	0.355	92	130	1.499
36	0.335	92	130	1.415
37	0.315	92	130	1.330
38	0.295	92	130	1.246
39	0.305	93	131	1.288
40	0.295	94	131	1.244
41	0.290	94	131	1.222
42	0.290	95	131	1.220
43	0.290	95	131	1.220
44	0.280	96	131	1.176
45	0.280	96	131	1.176
46	0.265	97	131	1.111
47	0.230	97	131	0.964
48	0.260	97	131	1.090
AVE	0.342	89	118	1.424

TABLE 1: INPUT DATA

RUN #10 , SEF 7

PT.NO.	DELTA P ('')H2O)	TS ('F)	TM ('F)	DELTA H ('')H2O)
1	0.330	84	80	1.380
2	0.330	85	83	1.385
3	0.330	85	87	1.395
4	0.330	85	92	1.408
5	0.330	85	96	1.418
6	0.320	85	96	1.375
7	0.310	85	96	1.332
8	0.300	85	96	1.289
9	0.300	85	110	1.322
10	0.290	85	114	1.287
11	0.280	85	116	1.247
12	0.270	85	118	1.206
13	0.240	85	120	1.076
14	0.240	85	120	1.076
15	0.260	85	122	1.170
16	0.260	85	123	1.172
17	0.260	85	124	1.174
18	0.270	85	125	1.221
19	0.280	85	126	1.268
20	0.270	86	128	1.265
21	0.270	86	128	1.225
22	0.260	86	128	1.180
23	0.250	86	128	1.134
24	0.250	86	128	1.134
25	0.300	86	89	1.271
26	0.290	86	92	1.235
27	0.290	86	97	1.246
28	0.280	87	102	1.212
29	0.270	87	108	1.181
30	0.260	87	112	1.145
31	0.260	87	115	1.151
32	0.250	87	117	1.111
33	0.250	87	120	1.117
34	0.240	87	122	1.076
35	0.240	88	111	1.053
36	0.240	88	111	1.053
37	0.250	88	118	1.111
38	0.260	88	121	1.161
39	0.270	88	123	1.210
40	0.280	88	125	1.259
41	0.280	88	127	1.263
42	0.280	88	129	1.268
43	0.280	88	131	1.272
44	0.280	90	132	1.270
45	0.280	89	133	1.274
46	0.280	89	134	1.276
47	0.280	90	135	1.276
48	0.280	89	136	1.280
AVE	0.277	86	115	1.226

TABLE 1: INPUT DATA

RUN #11, SEF 7

PT.NO.	DELTA P ("H20)	TS ('F)	TM ('F)	DELTA H ("H20)
1	0.320	90	97	1.365
2	0.320	90	103	1.380
3	0.330	90	109	1.438
4	0.330	90	114	1.451
5	0.320	90	120	1.422
6	0.310	90	124	1.387
7	0.310	91	128	1.394
8	0.300	91	131	1.356
9	0.290	91	134	1.317
10	0.290	91	137	1.324
11	0.280	91	140	1.284
12	0.260	91	141	1.195
13	0.230	91	143	1.060
14	0.240	91	143	1.106
15	0.250	91	143	1.153
16	0.260	91	145	1.203
17	0.270	90	145	1.251
18	0.270	90	146	1.253
19	0.270	91	147	1.253
20	0.260	91	148	1.209
21	0.260	91	149	1.211
22	0.250	91	149	1.164
23	0.250	91	150	1.166
24	0.250	91	150	1.166
25	0.290	91	127	1.301
26	0.290	91	130	1.308
27	0.280	91	133	1.269
28	0.270	91	137	1.232
29	0.270	91	141	1.241
30	0.270	91	143	1.245
31	0.250	91	143	1.153
32	0.250	91	147	1.160
33	0.250	91	147	1.160
34	0.240	91	148	1.116
35	0.240	91	148	1.116
36	0.240	91	136	1.094
37	0.240	91	139	1.099
38	0.240	91	140	1.101
39	0.260	91	142	1.197
40	0.260	91	144	1.201
41	0.260	91	145	1.203
42	0.270	91	147	1.253
43	0.260	91	148	1.209
44	0.260	91	149	1.211
45	0.260	91	150	1.213
46	0.270	91	150	1.259
47	0.260	91	151	1.215
48	0.270	91	152	1.263
AVE	0.270	91	139	1.236

TABLE 1: INPUT DATA

RUN #12 , SEF 7

PT.NO.	DELTA P ('')H20)	TS ('F)	TM ('F)	DELTA H ('')H20)
1	0.310	85	83	1.274
2	0.330	85	87	1.367
3	0.340	85	91	1.418
4	0.340	85	91	1.418
5	0.330	85	101	1.402
6	0.330	86	106	1.411
7	0.310	86	106	1.326
8	0.300	86	112	1.297
9	0.290	85	115	1.262
10	0.270	86	117	1.177
11	0.260	86	119	1.138
12	0.240	85	121	1.056
13	0.230	86	123	1.012
14	0.250	86	123	1.101
15	0.260	86	125	1.149
16	0.290	86	127	1.286
17	0.290	86	128	1.289
18	0.290	86	128	1.289
19	0.280	86	131	1.250
20	0.270	87	132	1.206
21	0.260	87	133	1.163
22	0.240	87	133	1.074
23	0.240	86	134	1.077
24	0.240	87	134	1.075
25	0.290	88	111	1.247
26	0.280	87	113	1.210
27	0.270	87	118	1.177
28	0.250	87	122	1.098
29	0.240	87	125	1.059
30	0.240	88	128	1.063
31	0.230	88	130	1.022
32	0.230	88	132	1.025
33	0.240	89	134	1.070
34	0.240	89	135	1.073
35	0.250	89	123	1.095
36	0.240	89	127	1.059
37	0.240	89	129	1.062
38	0.260	89	131	1.155
39	0.270	89	133	1.203
40	0.270	89	135	1.207
41	0.270	89	137	1.211
42	0.270	89	138	1.213
43	0.270	89	139	1.215
44	0.270	90	139	1.215
45	0.270	90	141	1.217
46	0.270	90	142	1.219
47	0.270	90	143	1.221
48	0.270	90	143	1.221
AVE	0.271	87	124	1.189

TABLE 1: INPUT DATA

RUN #10 , CN(⊖)

PT.NO.	DELTA P ('')H20)	TS ('F)	TM ('F)	DELTA H ('')H20)
1	0.090	85	77	1.911
2	0.090	85	88	1.951
3	0.090	84	97	1.986
4	0.090	84	108	2.025
5	0.085	85	111	1.919
6	0.065	85	118	1.486
7	0.060	85	119	1.374
8	0.075	85	120	1.720
9	0.070	78	124	1.638
10	0.060	75	126	1.416
11	0.090	83	101	2.004
12	0.090	85	112	2.036
13	0.085	85	120	1.950
14	0.080	85	126	1.854
15	0.070	85	129	1.631
16	0.050	85	130	1.167
17	0.055	84	129	1.284
18	0.035	83	129	0.818
19	0.055	80	129	1.293
20	0.055	77	130	1.302
AVE	0.072	83	116	1.638

TABLE 1: INPUT DATA

RUN #11, CN(S)

PT.NO.	DELTA P ('')H2O)	TS ('F)	TM ('F)	DELTA H ('')H2O)
1	0.090	85	89	1.974
2	0.085	90	89	1.848
3	0.085	90	95	1.868
4	0.085	90	98	1.878
5	0.080	90	106	1.793
6	0.080	90	110	1.806
7	0.075	90	114	1.705
8	0.075	90	117	1.713
9	0.065	90	120	1.493
10	0.060	89	122	1.385
11	0.045	88	123	1.043
12	0.045	88	125	1.046
13	0.035	88	125	0.814
14	0.040	88	126	0.931
15	0.025	88	127	0.583
16	0.030	88	127	0.700
17	0.035	88	127	0.816
18	0.035	87	128	0.819
19	0.035	87	129	0.821
20	0.025	87	131	0.588
21	0.080	87	115	1.831
22	0.080	88	121	1.847
23	0.080	88	126	1.863
24	0.080	87	129	1.876
25	0.080	87	133	1.889
26	0.080	88	134	1.888
27	0.080	88	138	1.901
28	0.080	87	138	1.905
29	0.075	88	140	1.788
30	0.070	88	141	1.672
31	0.050	88	141	1.194
32	0.045	88	141	1.075
33	0.045	88	141	1.075
34	0.045	87	141	1.077
35	0.040	88	141	0.955
36	0.050	87	141	1.196
37	0.060	86	141	1.438
38	0.055	86	142	1.321
39	0.045	86	143	1.082
40	0.045	86	143	1.082
AVE	0.060	88	126	1.389

TABLE 1: INPUT DATA

RUN #13 , CN(B)

PT.NO.	DELTA P ("H2O)	TS (°F)	TM (°F)	DELTA H ("H2O)
1	0.075	88	80	1.606
2	0.070	88	86	1.516
3	0.070	88	93	1.535
4	0.060	88	100	1.332
5	0.050	88	105	1.120
6	0.040	88	110	0.904
7	0.035	88	111	0.793
8	0.035	87	113	0.797
9	0.035	87	115	0.800
10	0.040	87	118	0.919
11	0.065	89	102	1.446
12	0.065	89	112	1.472
13	0.065	89	115	1.480
14	0.060	89	121	1.380
15	0.055	89	125	1.274
16	0.035	89	127	0.813
17	0.035	89	127	0.813
18	0.035	89	127	0.813
19	0.040	89	128	0.931
20	0.040	89	130	0.934
AVE	0.050	88	112	1.134

TABLE 1: INPUT DATA

RUN #15 , 3557.

PT.NO.	DELTA P ('' H20)	TS ('F)	TM ('F)	DELTA H ('' H20)
1	0.450	81	82	0.144
2	0.430	81	85	0.138
3	0.430	81	89	0.139
4	0.450	81	91	0.146
5	0.500	84	92	0.162
6	0.590	81	94	0.192
7	0.720	80	95	0.236
8	0.720	80	96	0.236
9	0.690	79	96	0.227
10	0.720	80	97	0.236
11	0.630	80	97	0.207
12	0.630	81	98	0.207
13	0.660	82	84	0.211
14	0.690	82	87	0.222
15	0.690	82	91	0.222
16	0.660	82	95	0.213
17	0.700	82	96	0.229
18	0.640	82	97	0.209
19	0.510	82	97	0.167
20	0.420	84	96	0.137
21	0.390	83	94	0.127
22	0.350	84	93	0.113
23	0.360	84	92	0.116
24	0.360	84	92	0.116
AVE	0.558	82	93	0.181

TABLE 1: INPUT DATA

RUN #16 , 3557

PT.NO.	DELTA P ('')H20)	TS ('F)	TM ('F)	DELTA H ('')H20)
1	0.600	76	87	0.193
2	0.600	76	88	0.194
3	0.650	77	93	0.211
4	0.670	78	97	0.219
5	0.700	79	98	0.229
6	0.610	79	98	0.199
7	0.510	79	98	0.167
8	0.430	79	97	0.140
9	0.370	79	96	0.121
10	0.340	80	96	0.111
11	0.340	81	96	0.110
12	0.340	81	95	0.110
13	0.380	82	87	0.121
14	0.380	82	88	0.121
15	0.380	82	91	0.122
16	0.410	82	93	0.132
17	0.470	82	94	0.152
18	0.560	82	96	0.181
19	0.710	82	97	0.230
20	0.740	82	99	0.241
21	0.690	82	102	0.226
22	0.640	83	103	0.210
23	0.660	83	103	0.216
24	0.660	83	102	0.216
AVE	0.535	80	96	0.174

TABLE 1: INPUT DATA

RUN #17 , 3557

PT.NO.	DELTA P (''H20)	TS (°F)	TM (°F)	DELTA H (''H20)
1	0.380	89	84	0.119
2	0.380	86	86	0.120
3	0.380	86	89	0.121
4	0.360	86	92	0.115
5	0.430	85	94	0.138
6	0.500	84	96	0.162
7	0.640	83	97	0.208
8	0.650	83	99	0.212
9	0.620	84	99	0.202
10	0.580	83	100	0.189
11	0.570	84	102	0.186
12	0.570	84	101	0.186
13	0.610	82	88	0.195
14	0.610	83	93	0.197
15	0.610	84	96	0.197
16	0.680	84	99	0.221
17	0.630	83	100	0.206
18	0.480	81	99	0.157
19	0.390	81	99	0.128
20	0.410	81	98	0.134
21	0.370	82	98	0.121
22	0.330	83	97	0.107
23	0.330	83	96	0.107
24	0.330	83	96	0.107
AVE	0.493	84	96	0.160

FES 3 RUN 5 NOMO TAPE STORED R-5, TAPE 4
12 MAY 80 NARF PENSACOLA BLDG 604

```
EPA METHOD 5
NOMOGRAPH PRGM.

MODIFIED FOR
PRINTER
ENTER THE FOLLOW
ING DATA AS RE-
QUESTED...

PUSH RUN/STOP
AFTER EACH ENTRY


TEST #
             3

RUN #
             5

FILTER #
             0

INITIAL METER
VOLUME
VI      CU.FT.
      768.435

STACK STATIC PRS
HS        ''H20
         -0.38

INITIAL BAROMET-
RIC PRES.
PB        ''HG
         30.02

EST % WATER
           2.0

SAMPLE FLOW RATE
QM        CFM
          0.75

STACK MOL. WT.
MW        LB/LB MOL
         28.80

AVE STACK TEMP.
TS        'F
            90

AVE DELTA P
DP        ''H20
          0.58

AMBIENT TEMP.
TAMB      'F
            83

PITOT TUBE COEF.
CP
         0.840

DELTA H@
DH@       ''H20
        2.1500

AVE STACK
VELOCITY IS
          2615
           FPM

IDEAL NOZZLE
DIAMETER IS
         0.233
INCHES..

ACTUAL NOZZLE
DIAMETER
DN
         0.245
           IN.

FOR EACH PT
ENTER:
 DP--PUSH STO A
 TS--PUSH STO B
 TM--PUSH STO C
     PUSH R/S
AFTER LAST PT
PUSH CFG1, R/S

            PT.NO.
              1

DP (''H20)=
         0.300
TS ('F)=
            80
TM ('F)=
            83
****************
DH (''H20) =
         1.346
****************


            PT.NO.
              2

DP (''H20)=
         0.360
TS ('F)=
            80
TM ('F)=
            84
****************
DH (''H20) =
         1.619
****************


            PT.NO.
              3

DP (''H20)=
         0.395
TS ('F)=
            81
TM ('F)=
            87
****************
DH (''H20) =
         1.783
****************


            PT.NO.
              4

DP (''H20)=
         0.430
TS ('F)=
            84
TM ('F)=
            90
****************
DH (''H20) =
         1.940
****************


            PT.NO.
              5

DP (''H20)=
         0.455
TS ('F)=
            89
TM ('F)=
            94
****************
DH (''H20) =
         2.049
****************
```

PT.NO.
6

DP (''H20)=
0.455
TS ('F)=
92
TM ('F)=
85
****
DH (''H20) =
2.005
****

PT.NO.
7

DP (''H20)=
0.480
TS ('F)=
95
TM ('F)=
89
****
DH (''H20) =
2.119
****

PT.NO.
8

DP (''H20)=
0.490
TS ('F)=
96
TM ('F)=
92
****
DH (''H20) =
2.171
****

PT.NO.
9

DP (''H20)=
0.490
TS ('F)=
95
TM ('F)=
96
****
DH (''H20) =
2.191
****

PT.NO.
10

DP (''H20)=
0.505
TS ('F)=
91
TM ('F)=
99
****
DH (''H20) =
2.287
****

PT.NO.
11

DP (''H20)=
0.525
TS ('F)=
92
TM ('F)=
104
****
DH (''H20) =
2.394
****

PT.NO.
12

DP (''H20)=
0.530
TS ('F)=
93
TM ('F)=
108
****
DH (''H20) =
2.430
****

PT.NO.
13

DP (''H20)=
0.540
TS ('F)=
93
TM ('F)=
111
****
DH (''H20) =
2.489
****

PT.NO.
14

DP (''H20)=
0.670
TS ('F)=
93
TM ('F)=
114
****
DH (''H20) =
3.104
****

PT.NO.
15

DP (''H20)=
0.690
TS ('F)=
93
TM ('F)=
117
****
DH (''H20) =
3.213
****

PT.NO.
16

DP (''H20)=
0.700
TS ('F)=
94
TM ('F)=
118
****
DH (''H20) =
3.260
****

PT.NO.
17

DP (''H20)=
0.740
TS ('F)=
97
TM ('F)=
121
****
DH (''H20) =
3.445
****

PT.NO.
18

DP (''H20)=
0.760
TS ('F)=
95
TM ('F)=
123
****
DH (''H20) =
3.563
****

PT.NO.
19

DP (''H20)=
0.790
TS ('F)=
97
TM ('F)=
124
****
DH (''H20) =
3.697
****

PT.NO.
20

DP (''H20)=
0.810
TS ('F)=
97
TM ('F)=
125
****
DH (''H20) =
3.797
****

PT.NO.
21

DP (''H20)=
0.825
TS ('F)=
96
TM ('F)=
126
****
DH (''H20) =
3.881
****

PT.NO.
22

DP (''H20)=
0.835
TS ('F)=
96
TM ('F)=
129
****
DH (''H20) =
3.948
****

PT.NO.
23

DP (''H20)=
0.840
TS ('F)=
96
TM ('F)=
131
****
DH (''H20) =
3.985
****

PT.NO.
24

DP (''H20)=
0.825
TS ('F)=
97
TM ('F)=
132
****
DH (''H20) =
3.914
****

PT.NO.
25

DP (''H20)=
0.800
TS ('F)=
97
TM ('F)=
132
****
DH (''H20) =
3.795
****

PT.NO.
26

DP (''H20)=
0.810
TS ('F)=
98
TM ('F)=
132
****
DH (''H20) =
3.836
****

PT.NO.
27

DP (''H20)=
0.250
TS ('F)=
94
TM ('F)=
111
****
DH (''H20) =
1.150
****

PT.NO.
28

DP (''H20)=
0.260
TS ('F)=
89
TM ('F)=
107
****
DH (''H20) =
1.199
****

PT.NO.
29

DP (''H20)=
0.310
TS ('F)=
90
TM ('F)=
111
****
DH (''H20) =
1.437
****

PT.NO.
30

DP (''H20)=
0.370
TS ('F)=
90
TM ('F)=
112
****
DH (''H20) =
1.718
****

PT.NO.
31

DP (''H20)=
0.430
TS ('F)=
90
TM ('F)=
115
****
DH (''H20) =
2.007
****

PT.NO.
32

DP (''H20)=
0.450
TS ('F)=
94
TM ('F)=
118
****
DH (''H20) =
2.096
****

PT.NO.
33

DP (''H20)=
0.470
TS ('F)=
94
TM ('F)=
120
****
DH (''H20) =
2.196
****

PT.NO.
34

DP (''H20)=
0.500
TS ('F)=
97
TM ('F)=
120
****
DH (''H20) =
2.324
****

PT.NO.
35

DP (''H20)=
0.540
TS ('F)=
96
TM ('F)=
122
****
DH (''H20) =
2.523
****

PT.NO.
36

DP (''H20)=
0.550
TS ('F)=
97
TM ('F)=
124
****
DH (''H20) =
2.574
****

PT.NO.
37

DP (''H20)=
0.545
TS ('F)=
97
TM ('F)=
124
****
DH (''H20) =
2.551
****

PT.NO.
38

DP (''H20)=
0.545
TS ('F)=
96
TM ('F)=
124
****
DH (''H20) =
2.555
****

PT.NO.
39

DP (''H20)=
0.555
TS ('F)=
97
TM ('F)=
124
****
DH (''H20) =
2.597
****

PT.NO.
40

DP (''H20)=
0.825
TS ('F)=
96
TM ('F)=
124
****
DH (''H20) =
3.868
****

PT.NO.
41

DP (''H20)=
0.885
TS ('F)=
97
TM ('F)=
127
****
DH (''H20) =
4.163
****

PT.NO.
42

DP (''H20)=
0.935
TS ('F)=
97
TM ('F)=
129
****
DH (''H20) =
4.413
****

PT.NO.
43

DP (''H20)=
0.930
TS ('F)=
97
TM ('F)=
131
****
DH (''H20) =
4.404
****

PT.NO.
44

DP (''H20)=
0.925
TS ('F)=
96
TM ('F)=
134
****
DH (''H20) =
4.411
****

PT.NO.
45

DP (''H20)=
0.860
TS ('F)=
97
TM ('F)=
134
****
DH (''H20) =
4.094
****

PT.NO.
46

DP (''H20)=
0.810
TS ('F)=
98
TM ('F)=
134
****
DH (''H20) =
3.849
****

PT.NO.
47

DP (''H20)=
0.800
TS ('F)=
98
TM ('F)=
133
****
DH (''H20) =
3.795
****

PT.NO.
48

DP (''H20)=
0.700
TS ('F)=
100
TM ('F)=
132
****
DH (''H20) =
3.303
****

PT.NO.
49

DP (''H20)=
0.640
TS ('F)=
101
TM ('F)=
132
****
DH (''H20) =
3.014
****

PT.NO.
50

DP (''H20)=
0.600
TS ('F)=
100
TM ('F)=
131
****
DH (''H20) =
2.826
****

PT.NO.
51

DP (''H20)=
0.575
TS ('F)=
100
TM ('F)=
130
****
DH (''H20) =
2.704
****

PT.NO.
52

DP (''H20)=
0.575
TS ('F)=
99
TM ('F)=
129
****
DH (''H20) =
2.704
****

THE FOLLOWING IS GIVEN FORTRANSFER TO THE ISOKINETIC PROG II (FILE#4)

VELOCITY PRMTR.
KV=
18.211

AVE METER TEMP.
('F)=
117

AVE DELTA P
(''H2O)=
0.613

AVE DELTA H
(''H2O)=
2.860

AVE STACK TEMP.
('F)=
94

FINAL BAROMETRIC
PRES ''HG
29.97 ~~860.05~~
FIXED IN -5
ABS. STACK PRES
(''HG)=
29.967 ~~[illegible]~~1
FIXED IN -5
INITIAL METER
VOLUME=
768.435

FINAL METER VOL?
VF CF
863.854
TO RECORD DATA
PRESS R/S.
ILLEGAL ADDRESS
TAPE#?

DATE?
DATA STORED ON
TAPE#
4

FILE#
-5

DATE
81280

STANDARD CON
DITIONS ARE
29.92126 ''HG
68.0'F
-END-
EMR 10-25-79

FES I RUN I 8MAY80
ISOKINETIC RUN (KV PROGRAM)
KV - ROOF TAPE #
ΔH - MOTEL TAPE #

```
EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
             1

RUN #
             1

FILTER #
             0

VELOCITY PARA-
METER (KV)
        16.450

AVE METER TEMP.
(TM)   'F
            112
       'R
            572

AVE DELTA H
(''H2O)
         2.194

AVE DELTA P
(''H2O)
         0.506

FINAL METER VOL.
(FT3)
       596.586

INITIAL METER
VOL   (FT3)
       511.924

ABSOLUTE STACK
PRES. (''HG)
         29.85

IS THE % H2O
KNOWN ?
   0=YES
   1=NO

WATER GAIN (G)
         43.50

% CO2
          0.00

% O2
         21.00

% CO
          0.00

PITOT COEF.(CP)
         0.840

SAMPLE TIME, MIN
           104

NOZZLE DIAMETER
(INCHES)
         0.245

ROUND STACK ?
  1=YES
  0=NO

STACK DIA. ('')
         58.0

AVE STACK TEMP.
'F
            86

METER CALIBRA-
TION FACTOR (G)
       1.0000

================

NET METER VOL.
FT3
        84.662

CORECTED SAMPLE
VOLUME (VMSTD)
SCF
        77.962

MOLE FRACTION
DRY GAS (MD)
         0.974

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
        28.562

AVE VELOCITY
FPM
       2424.49

STACK AREA (AS)
SQ. IN.
        2642.1

STACK DRY FLOW
QS        SCFM
     41798.95

          ACFM
     43342.61

EXCESS AIR (%)
    -32307.69

****************
ISOKINETIC    %I
         100.5
****************

CONGRATULATIONS.

STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F

     =END=
```

ISOKINETIC
SEF-1-2
604 NARF PENSACOLA
9 MAY 80

EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
1

RUN #
2

FILTER #
0

VELOCITY PARA-
METER (KV)
16.081

AVE METER TEMP.
(TM) 'F
111
'R
571

AVE DELTA H
(''H20)
2.156

AVE DELTA P
(''H20)
0.493

FINAL METER VOL.
(FT3)
680.559

INITIAL METER
VOL (FT3)
597.329

ABSOLUTE STACK
PRES. (''HG)
29.86

IS THE % H20
KNOWN ?
0=YES
1=NO

WATER GAIN (G)
28.60

% CO2
0.00

% O2
21.00

% CO
0.00

PITOT COEF.(CP)
0.840

SAMPLE TIME, MIN
104

NOZZLE DIAMETER
(INCHES)
0.245

ROUND STACK ?
1=YES
0=NO

STACK DIA. ('')
58.0

AVE STACK TEMP.
'F
74

METER CALIBRA-
TION FACTOR (G)
0.9979

==========

NET METER VOL.
FT3
83.055

CORECTED SAMPLE
VOLUME (VMSTD)
SCF
76.642

MOLE FRACTION
DRY GAS (MD)
0.983

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
28.652

AVE VELOCITY
FPM
2365.97

STACK AREA (AS)
SQ. IN.
2642.1

STACK DRY FLOW
QS SCFM
42078.10

ACFM
42658.84

EXCESS AIR (%)
-32307.69

****
ISOKINETIC %I
98.1
****

CONGRATULATIONS.

STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F

-END-

ISOKINETIC
SEF-1-2
604 NARF PENSACOLA
9 MAY 80

EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
1

RUN #
3

FILTER #
0

VELOCITY PARA-
METER (KV)
16.437

AVE METER TEMP.
(TM) 'F
122
'R
582

AVE DELTA H
(''H20)
2.262

AVE DELTA P
(''H20)
0.507

FINAL METER VOL.
(FT3)
767.315

INITIAL METER
VOL (FT3)
681.453

ABSOLUTE STACK
PRES. (''HG)
29.84

IS THE % H20
KNOWN ?
0=YES
1=NO

WATER GAIN (G)
32.80

% CO2
0.00

% O2
20.95

% CO
0.00

PITOT COEF.(CP)
0.840

SAMPLE TIME, MIN
104

NOZZLE DIAMETER
(INCHES)
0.245

ROUND STACK ?
1=YES
0=NO

STACK DIA. ('')
58.0

AVE STACK TEMP.
'F
82

METER CALIBRA-
TION FACTOR (G)
0.9979

==========

NET METER VOL.
FT3
85.682

CORECTED SAMPLE
VOLUME (VMSTD)
SCF
77.519

MOLE FRACTION
DRY GAS (MD)
0.980

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
28.626

AVE VELOCITY
FPM
2420.28

STACK AREA (AS)
SQ. IN.
2642.1

STACK DRY FLOW
QS SCFM
42282.30

ACFM
43537.19

EXCESS AIR (%)
-1197142.86

****
ISOKINETIC %I
98.8
****

CONGRATULATIONS.

STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F

-END-

SEF 2 RUN 1 8 MAY 80

EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
2

RUN #
1

FILTER #
0

VELOCITY PARA-
METER (KV)
13.111

AVE METER TEMP.
(TM) 'F
115
'R
575

AVE DELTA H
(''H20)
1.365

AVE DELTA P
(''H20)
0.321

FINAL METER VOL.
(FT3)
875.105

INITIAL METER
VOL (FT3)
810.300

ABSOLUTE STACK
PRES. (''HG)
29.82

IS THE % H20
KNOWN ?
0=YES
1=NO

WATER GAIN (G)
29.70

% CO2
0.00

% O2
20.90

% CO
0.00

PITOT COEF.(CP)
0.840

SAMPLE TIME, MIN
96

NOZZLE DIAMETER
(INCHES)
0.245

ROUND STACK ?
1=YES
0=NO

STACK DIA. ('')
46.0

AVE STACK TEMP.
'F
82

METER CALIBRA-
TION FACTOR (G)
0.9900

==========

NET METER VOL.
FT3
64.157

CORECTED SAMPLE
VOLUME (VMSTD)
SCF
58.712

MOLE FRACTION
DRY GAS (MD)
0.977

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
28.583

AVE VELOCITY
FPM
1932.62

STACK AREA (AS)
SQ. IN.
1661.9

STACK DRY FLOW
QS SCFM
21142.13

ACFM
21784.21

EXCESS AIR (%)
33983.74

****
ISOKINETIC %I
101.9
****

CONGRATULATIONS.

STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F

-END-

SEP 2-2 9 MAY 80

EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
2

RUN #
2

FILTER #
0

VELOCITY PARA-
METER (KV)
13.027

AVE METER TEMP.
(TM) 'F
121
'R
581

AVE DELTA H
(''H2O)
1.435

AVE DELTA P
(''H2O)
0.319

FINAL METER VOL.
(FT3)
941.590

INITIAL METER
VOL (FT3)
876.700

ABSOLUTE STACK
PRES. (''HG)
29.87

IS THE % H2O
KNOWN ?
0=YES
1=NO

WATER GAIN (G)
9.40

% CO2
0.00

% O2
0.00

% CO
0.00

PITOT COEF.(CP)
0.840

SAMPLE TIME, MIN
96

NOZZLE DIAMETER
(INCHES)
0.248

ROUND STACK ?
1=YES
0=NO

STACK DIA. (')
46.0

AVE STACK TEMP.
'F
82

METER CALIBRA-
TION FACTOR (G)
1.0001

==========

NET METER VOL.
FT3
64.896

CORRECTED SAMPLE
VOLUME (VMSTD)
SCF
58.874

MOLE FRACTION
DRY GAS (MD)
0.993

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
27.925

AVE VELOCITY
FPM
1941.11

STACK AREA (AS)
SQ. IN.
1661.9

STACK DRY FLOW
QS SCFM
21615.55

ACFM
22234.72

EXCESS AIR (%)
0.00

****
ISOKINETIC %I
97.6
****

CONGRATULATIONS,

STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F

-END-

SEF 2-3 9MAY 80

```
EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
          2

RUN #
          3

FILTER #
          0

VELOCITY PARA-
METER (KV)
      13.247

AVE METER TEMP.
(TM)  'F
         130
      'R
         590

AVE DELTA H
(''H2O)
       1.453

AVE DELTA P
(''H2O)
       0.322

FINAL METER VOL.
(FT3)
    1016.750

INITIAL METER
VOL  (FT3)
     950.000

ABSOLUTE STACK
PRES. (''HG)
       29.85

IS THE % H2O
KNOWN ?
   0=YES
   1=NO

WATER GAIN (G)
       22.80

% CO2
        0.00

% O2
        0.00

% CO
        0.00

PITOT COEF.(CP)
       0.840

SAMPLE TIME, MIN
          96

NOZZLE DIAMETER
(INCHES)
       0.248

ROUND STACK ?
  1=YES
  0=NO

STACK DIA. ('')
        46.0

AVE STACK TEMP.
'F
          90

METER CALIBRA-
TION FACTOR (G)
      1.0001

===============

NET METER VOL.
FT3
      66.757

CORRECTED SAMPLE
VOLUME (VMSTD)
SCF
      59.598

MOLE FRACTION
DRY GAS (MD)
       0.982

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
      27.823

AVE VELOCITY
FPM
     1979.13

STACK AREA (AS)
SQ. IN.
     1661.9

STACK DRY FLOW
QS       SCFM
    21469.31

         ACFM
    22425.28

EXCESS AIR (%)
        0.00

****************
ISOKINETIC   %I
        99.4
****************


CONGRATULATIONS.


STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F


      -END-
```

SEP 84 12 MAY 80

```
ISOKINETIC
CALCULATION
PROGRAM 3



ENTER THE
FOLLOWING DATA
AS REQUESTED,

KEY (RUN/STOP)
AFTER EACH
DATA POINT



TEST #?
              3
RUN #?
              4
FILTER #?
              4

FINAL METER
VOLUME          FT3
       110.140

INITIAL METER
VOLUME          FT3
       17.275

BAROMET PRESSURE
             IN HG
         30.03

DELTA H
        INCHES H20

ENTER 0 AFTER
LAST DATA POINT
          2.63

METER TEMP      'F

ENTER 0 AFTER
LAST DATA POINT
           133

H20 GAIN    GRAMS
         45.00

%CO2
          0.00
%02
          0.00

STATIC PRESSURE
        INCHES H20
           0.000

PITOT FACTOR
(0.84 FOR S TYPE
 1 FOR REGULAR,
 OR CAL. FACTOR)
           0.84

SAMPLE TIME
             MINUTES
         104.00

NOZZLE DIAMETER
              INCHES
         0.2480

ROUND STACK?
     1=YES
     0=NO

STACK DIAMETER
              INCHES
          52.00

ENTER 0 AFTER
LAST DATA POINT

DELTA P      ''H20
STACK TEMP     'F
          0.581
             90


================

NET METER VOLUME
         CUBIC FEET
           92.87

CORRECTED SAMPLE
VOLUME VMSTD SCF
           83.52

MOLE FRACTION
DRY GAS         MD
         0.9752

MOLECULAR WEIGHT
OF STACK GAS WET
MW     LB/LB-MOLE
           27.75

ABSOLUTE STACK
PRESSURE PS ''HG
           30.03

AVERAGE STACK
TEMP. TS        'F
             90

ABS. AVG. STACK
TEMP. TS        'R
            550

AVG STK VELOCITY
VS              FPM
          2665

STACK AREA     AS
   SQUARE INCHES
        2123.7

STACK DRY FLOW
QS            SCFM
         36913
AVE METER TEMP.
             'F
             133
             'R
             593

GEOMETRIC STACK
TEMP AVE     'R
             550


****************
 ISOKINETIC  %I
          95.6
****************
```

ISO TAPE FES 3 RUN 5 12 MAY 80
NARF PENSACOLA BLDG 604

EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
3

RUN #
5

FILTER #
0

VELOCITY PARA-
METER (KV)
18.211

AVE METER TEMP.
(TM) 'F
117
'R
577

AVE DELTA H
(''H2O)
2.860

AVE DELTA P
(''H2O)
0.613

FINAL METER VOL.
(FT3)
863.854

INITIAL METER
VOL (FT3)
768.435

ABSOLUTE STACK
PRES. (''HG)
29.97

IS THE % H2O
KNOWN ?
0=YES
1=NO

WATER GAIN (G)
55.70

% CO2
0.00

% O2
20.95

% CO
0.00

PITOT COEF.(CP)
0.840

SAMPLE TIME, MIN
104

NOZZLE DIAMETER
(INCHES)
0.245

ROUND STACK ?
1=YES
0=NO

STACK DIA. ('')
52.0

AVE STACK TEMP.
'F
94

METER CALIBRA-
TION FACTOR (G)
0.9979

==========

NET METER VOL.
FT3
95.219

CORECTED SAMPLE
VOLUME (VMSTD)
SCF
87.264

MOLE FRACTION
DRY GAS (MD)
0.971

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
28.521

AVE VELOCITY
FPM
2680.71

STACK AREA (AS)
SQ. IN.
2123.7

STACK DRY FLOW
QS SCFM
36620.59

ACFM
38378.97

EXCESS AIR (%)
-1197142.86

****
ISOKINETIC %I
103.2
****

CONGRATULATIONS.

STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F

SEF 3-6
12 MAY 80

```
ISOKINETIC
CALCULATION
PROGRAM 3


ENTER THE
FOLLOWING DATA
AS REQUESTED.

KEY (RUN/STOP)
AFTER EACH
DATA POINT


TEST #?
          3
RUN #?
          6
FILTER #?
          6

FINAL METER
VOLUME        FT3
     202.010

INITIAL METER
VOLUME        FT3
     110.450

BAROMET PRESSURE
           IN HG
        29.97

DELTA H
       INCHES H20

ENTER 0 AFTER
LAST DATA POINT
        2.57

METER TEMP     'F

ENTER 0 AFTER
LAST DATA POINT
         121

H20 GAIN   GRAMS
       55.00

%CO2
          0.00
%O2
          0.00

STATIC PRESSURE
       INCHES H20
         0.000

PITOT FACTOR
(0.84 FOR S TYPE
 1 FOR REGULAR,
 OR CAL. FACTOR)
          0.84

SAMPLE TIME
           MINUTES
        104.00

NOZZLE DIAMETER
           INCHES
        0.2480

ROUND STACK?
    1=YES
    0=NO

STACK DIAMETER
           INCHES
         52.00

ENTER 0 AFTER
LAST DATA POINT

DELTA P     ''H20
STACK TEMP     'F
         0.580
            92


================

NET METER VOLUME
       CUBIC FEET
         91.56

CORRECTED SAMPLE
VOLUME VMSTD SCF
         83.87

MOLE FRACTION
DRY GAS        MD
        0.9700

MOLECULAR WEIGHT
OF STACK GAS WET
MW     LB/LB-MOLE
         27.70

ABSOLUTE STACK
PRESSURE PS ''HG
         29.97

AVERAGE STACK
TEMP. TS       'F
            92

ABS. AVG. STACK
TEMP. TS       'R
           552

AVG STK VELOCITY
VS             FPM
         2673

STACK AREA     AS
   SQUARE INCHES
       2123.7

STACK DRY FLOW
QS             SCFM
        36615
AVE METER TEMP.
           'F
          121
           'R
          581

GEOMETRIC STACK
TEMP AVE   'R
          552


****************
 ISOKINETIC  %I
        96.8
****************
```

SEP 4-7 13 MAY 80

```
EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
          4

RUN #
          7

FILTER #
          0

VELOCITY PARA-
METER (KV)
       13.701

AVE METER TEMP.
(TM)  'F
         115
      'R
         575

AVE DELTA H
(''H2O)
        1.572

AVE DELTA P
(''H2O)
        0.356

FINAL METER VOL.
(FT3)
      282.553

INITIAL METER
VOL   (FT3)
      209.700

ABSOLUTE STACK
PRES. (''HG)
       29.95

IS THE % H2O
KNOWN ?
   0=YES
   1=NO

% H2O ?
        2.00

% CO2
        0.00

% O2
        0.00

% CO
        0.00

PITOT COEF.(CP)
       0.840

SAMPLE TIME, MIN
         104

NOZZLE DIAMETER
(INCHES)
       0.248

ROUND STACK ?
  1=YES
  0=NO

STACK DIA. ('')
        54.0

AVE STACK TEMP.
'F
          87

METER CALIBRA-
TION FACTOR (G)
       1.0001

================

NET METER VOL.
FT3
       72.860

CORECTED SAMPLE
VOLUME (VMSTD)
SCF
       66.968

MOLE FRACTION
DRY GAS (MD)
        0.98

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
       27.80

AVE VELOCITY
FPM
     2043.39

STACK AREA (AS)
SQ. IN.
     2290.2

STACK DRY FLOW
QS       SCFM
     30761.05

         ACFM
     31848.80

*****************
ISOKINETIC    %I
        99.2
*****************

CONGRATULATIONS.

STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F

    -END-
```

SEP 4-8 14 MAY 80 IAFC4 RUN 2

```
EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
          4

RUN #
          8

FILTER #
          0

VELOCITY PARA-
METER (KV)
       13.566

AVE METER TEMP.
(TM)   'F
         117
       'R
         577

AVE DELTA H
(''H20)
        1.545

AVE DELTA P
(''H20)
        0.349

FINAL METER VOL.
(FT3)
      429.741

INITIAL METER
VOL   (FT3)
      357.050

ABSOLUTE STACK
PRES. (''HG)
        29.87

IS THE % H20
KNOWN ?
   0=YES
   1=NO

% H20 ?
         2.00

% CO2
         0.00

% O2
        20.90

% CO
         0.00

PITOT COEF.(CP)
        0.840

SAMPLE TIME, MIN
          104

NOZZLE DIAMETER
(INCHES)
        0.248


ROUND STACK ?
  1=YES
  0=NO

STACK DIA. ('')
        54.0

AVE STACK TEMP.
'F
          88

METER CALIBRA-
TION FACTOR (G)
       1.0001

================

NET METER VOL.
FT3
       72.698

CORECTED SAMPLE
VOLUME (VMSTD)
SCF
       66.409

MOLE FRACTION
DRY GAS (MD)
        0.98

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
       28.62

AVE VELOCITY
FPM
     1996.76

STACK AREA (AS)
SQ. IN.
     2290.2

STACK DRY FLOW
QS       SCFM
    29924.00

         ACFM
    31121.92


****************
ISOKINETIC   %I
       101.1
****************


CONGRATULATIONS.


STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F


      -END-
```

SEF 4-9

EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
4

RUN #
9

FILTER #
0

VELOCITY PARA-
METER (KV)
13.542

AVE METER TEMP.
(TM) 'F
119
'R
579.

AVE DELTA H
(''H20)
1.528

AVE DELTA P
(''H20)
0.346

FINAL METER VOL.
(FT3)
502.335

INITIAL METER
VOL (FT3)
429.950

ABSOLUTE STACK
PRES. (''HG)
29.85

IS THE % H20
KNOWN ?
0=YES
1=NO

WATER GAIN (G)
47.60

% CO2
0.00

% O2
20.90

% CO
0.00

PITOT COEF.(CP)
0.840

SAMPLE TIME, MIN
104

NOZZLE DIAMETER
(INCHES)
0.248

ROUND STACK ?
1=YES
0=NO

STACK DIA. ('')
54.0

AVE STACK TEMP.
'F
91

METER CALIBRA-
TION FACTOR (G)
1.0001

==========

NET METER VOL.
FT3
72.392

CORECTED SAMPLE
VOLUME (VMSTD)
SCF
65.857

MOLE FRACTION
DRY GAS (MD)
0.967

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
28.479

AVE VELOCITY
FPM
1998.81

STACK AREA (AS)
SQ. IN.
2290.2

STACK DRY FLOW
QS SCFM
29377.17

ACFM
30741.04

EXCESS AIR (%)
33983.74

****
ISOKINETIC %I
102.2
****

CONGRATULATIONS

STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F

-END-

ISO TAPE SEF 5-4 13 MAY 80
BLDG 604 NARF PENSACOLA

EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
5

RUN #
4

FILTER #
0

VELOCITY PARA-
METER (KV)
15.067

AVE METER TEMP.
(TM) 'F
117
'R
577

AVE DELTA H
(''H20)
2.007

AVE DELTA P
(''H20)
0.426

FINAL METER VOL.
(FT3)
949.227

INITIAL METER
VOL (FT3)
868.583

ABSOLUTE STACK
PRES. (''HG)
29.93

IS THE % H20
KNOWN ?
0=YES
1=NO

WATER GAIN (G)
41.80

% CO2
0.00

% O2
20.95

% CO
0.00

PITOT COEF.(CP)
0.840

SAMPLE TIME, MIN
104

NOZZLE DIAMETER
(INCHES)
0.245

ROUND STACK ?
1=YES
0=NO

STACK DIA. ('')
54.0

AVE STACK TEMP.
'F
86

METER CALIBRA-
TION FACTOR (G)
0.9979

==========

NET METER VOL.
FT3
80.475

CORECTED SAMPLE
VOLUME (VMSTD)
SCF
73.661

MOLE FRACTION
DRY GAS (MD)
0.974

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
28.555

AVE VELOCITY
FPM
2217.95

STACK AREA (AS)
SQ. IN.
2290.2

STACK DRY FLOW
QS SCFM
33219.96

ACFM
34354.72

EXCESS AIR (%)
-1197142.86

****
ISOKINETIC %I
103.5
****

CONGRATULATIONS.

STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F

-END-

ISOKINETIC CALC. FES 5-5
13 MAY 80 NARF PENSACOLA

EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
5

RUN #
5

FILTER #
0

VELOCITY PARA-
METER (KV)
12.335

AVE METER TEMP.
(TM) 'F
123
'R
583

AVE DELTA H
(''H2O)
1.344

AVE DELTA P
(''H2O)
0.286

FINAL METER VOL.
(FT3)
1019.782

INITIAL METER
VOL (FT3)
950.472

ABSOLUTE STACK
PRES. (''HG)
29.90

IS THE % H2O
KNOWN ?
0=YES
1=NO

WATER GAIN (G)
37.00

% CO2
0.00

% O2
21.00

% CO
0.00

PITOT COEF.(CP)
0.840

SAMPLE TIME, MIN
104

NOZZLE DIAMETER
(INCHES)
0.245

ROUND STACK ?
1=YES
0=NO

STACK DIA. ('')
54.0

AVE STACK TEMP.
'F
87

METER CALIBRA-
TION FACTOR (G)
0.9979

==========

NET METER VOL.
FT3
69.164

CORECTED SAMPLE
VOLUME (VMSTD)
SCF
62.594

MOLE FRACTION
DRY GAS (MD)
0.973

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
28.546

AVE VELOCITY
FPM
1816.99

STACK AREA (AS)
SQ. IN.
2290.2

STACK DRY FLOW
QS SCFM
27108.13

ACFM
28113.64

EXCESS AIR (%)
-32307.69

****
ISOKINETIC %I
107.8
****

CONGRATULATIONS.

STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F

-END-

ISO I TAPE RUN 5-6 SEF 6
NARF PENSACOLA 14 MAY 80

-END-
ISOKINETIC
CALCULATION
PROGRAM 3

ENTER THE
FOLLOWING DATA
AS REQUESTED,

KEY (RUN/STOP)
AFTER EACH
DATA POINT

TEST #?
5
RUN #?
6
FILTER #?
0

FINAL METER
VOLUME FT3
96.370

INITIAL METER
VOLUME FT3
25.723

BAROMET PRESSURE
IN HG
29.87

DELTA H
INCHES H20

ENTER 0 AFTER
LAST DATA POINT
1.45

METER TEMP 'F

ENTER 0 AFTER
LAST DATA POINT
110

H20 GAIN GRAMS
43.10

%CO2
0.00
%02
21.00

STATIC PRESSURE
INCHES H20
0.000

PITOT FACTOR
(0.84 FOR S TYPE
1 FOR REGULAR,
OR CAL. FACTOR)
0.84

SAMPLE TIME
MINUTES
104.00

NOZZLE DIAMETER
INCHES
0.2450

ROUND STACK?
1=YES
0=NO

STACK DIAMETER
INCHES
54.00

ENTER 0 AFTER
LAST DATA POINT

DELTA P ''H20
STACK TEMP 'F
0.350
86

==========

NET METER VOLUME
CUBIC FEET
70.65

CORRECTED SAMPLE
VOLUME VMSTD SCF
65.56

MOLE FRACTION
DRY GAS MD
0.9699

MOLECULAR WEIGHT
OF STACK GAS WET
MW LB/LB-MOLE
28.51

ABSOLUTE STACK
PRESSURE PS ''HG
29.87

AVERAGE STACK

ABS. AVG. STACK
TEMP. TS 'R
546

AVG STK VELOCITY
VS FPM
2038

STACK AREA AS
SQUARE INCHES
2290.2

STACK DRY FLOW,
QS SCFM
30345
AVE METER TEMP.
'F
110
'R
570

GEOMETRIC STACK
TEMP AVE 'R
546

****
ISOKINETIC %I
100.9
****

ISO TAPE SEF 6-7
604 NARF PENSACOLA 15 MAY 80

EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
6

RUN #
7

FILTER #
0

VELOCITY PARA-
METER (KV)
13.544

AVE METER TEMP.
(TM) 'F
109
'R
569

AVE DELTA H
(''H20)
1.433

AVE DELTA P
(''H20)
0.342

FINAL METER VOL.
(FT3)
162.310

INITIAL METER
VOL (FT3)
96.820

ABSOLUTE STACK
PRES. (''HG)
29.85

IS THE % H20
KNOWN ?
0=YES
1=NO

WATER GAIN (G)
39.10

% CO2
0.00

% O2
21.00

% CO
0.00

PITOT COEF.(CP)
0.840

SAMPLE TIME, MIN
96

NOZZLE DIAMETER
(INCHES)
0.245

ROUND STACK ?
1=YES
0=NO

STACK DIA. ('')
45.0

AVE STACK TEMP.
'F
79

METER CALIBRA-
TION FACTOR (G)
0.9979

==========

NET METER VOL.
FT3
65.352

CORECTED SAMPLE
VOLUME (VMSTD)
SCF
60.498

MOLE FRACTION
DRY GAS (MD)
0.970

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
28.519

AVE VELOCITY
FPM
1997.69

STACK AREA (AS)
SQ. IN.
1590.4

STACK DRY FLOW
QS SCFM
20916.24

ACFM
21410.63

EXCESS AIR (%)
-32307.69

****
ISOKINETIC %I
101.6
****

CONGRATULATIONS.

STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F

-END-

200 L. IAFB FCO 607
16 MAY 80
604 NARF PENSACOLA

ISOKINETIC
CALCULATION
PROGRAM 3

ENTER THE
FOLLOWING DATA
AS REQUESTED.

KEY (RUN/STOP)
AFTER EACH
DATA POINT

TEST #?
6
RUN #?
9
FILTER #?
0

FINAL METER
VOLUME FT3
293.286

INITIAL METER
VOLUME FT3
228.198

BAROMET PRESSURE
IN HG
29.88

DELTA H
INCHES H20

ENTER 0 AFTER
LAST DATA POINT
1.42

METER TEMP 'F

ENTER 0 AFTER
LAST DATA POINT
118

H20 GAIN GRAMS
42.20

%CO2
0.00
%O2
21.00

STATIC PRESSURE
INCHES H20
0.000

PITOT FACTOR
(0.84 FOR S TYPE
1 FOR REGULAR,
OR CAL. FACTOR)
0.84

SAMPLE TIME
MINUTES
96.00

NOZZLE DIAMETER
INCHES
0.2450

ROUND STACK?
1=YES
0=NO

STACK DIAMETER
INCHES
45.00

ENTER 0 AFTER
LAST DATA POINT

DELTA P ''H20
STACK TEMP 'F
0.342
89

==========

NET METER VOLUME
CUBIC FEET
65.09

CORRECTED SAMPLE
VOLUME VMSTD SCF
59.58

MOLE FRACTION
DRY GAS MD
0.9677

MOLECULAR WEIGHT
OF STACK GAS WET
MW LB/LB-MOLE
28.49

ABSOLUTE STACK
PRESSURE PS ''HG
29.88

AVERAGE STACK
TEMP. TS 'F
89

ABS. AVG. STACK
TEMP. TS 'R
549

AVG STK VELOCITY
VS FPM
2021

STACK AREA AS
SQUARE INCHES
1590.4

STACK DRY FLOW
QS SCFM
20738
AVE METER TEMP.
'F
118
'R
578

GEOMETRIC STACK
TEMP AVE 'R
549

****
ISOKINETIC %I
100.9
****

```
EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
          7

RUN #
         10

FILTER #
          0

VELOCITY PARA-
METER (KV)
      12.292

AVE METER TEMP.
(TM)  'F
         115
      'R
         575

AVE DELTA H
(''H2O)
       1.226

AVE DELTA P
(''H2O)
       0.277

FINAL METER VOL.
(FT3)
     564.290

INITIAL METER
VOL  (FT3)
     502.600

ABSOLUTE STACK
PRES. (''HG)
       29.86

IS THE % H2O
KNOWN ?
   0=YES
   1=NO



WATER GAIN (G)
       35.30

% CO2
        0.00

% O2
       20.90

% CO
        0.00

PITOT COEF.(CP)
       0.840

SAMPLE TIME, MIN
          96

NOZZLE DIAMETER
(INCHES)
       0.248


ROUND STACK ?
  1=YES
  0=NO

STACK DIA. ('')
        48.0

AVE STACK TEMP.
'F
          86

METER CALIBRA-
TION FACTOR (G)
       1.0001

================

NET METER VOL.
FT3
      61.696

CORECTED SAMPLE
VOLUME (VMSTD)
SCF
      56.536

MOLE FRACTION
DRY GAS (MD)
       0.971

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
      28.526

AVE VELOCITY
FPM
     1812.51

STACK AREA (AS)
SQ. IN.
     1809.6

STACK DRY FLOW
QS        SCFM
    21343.76

          ACFM
    22124.59

EXCESS AIR (%)
    33983.74


****************
ISOKINETIC    %I
      103.3
****************


CONGRATULATIONS.


STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F


     -END-
```

TAPE 4 FILE 11 10 MAY 80 NAVY PENSACOLA

EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
7

RUN #
11

FILTER #
0

VELOCITY PARA-
METER (KV)
12.187

AVE METER TEMP.
(TM) 'F
139
'R
599

AVE DELTA H
(''H2O)
1.236

AVE DELTA P
(''H2O)
0.270

FINAL METER VOL.
(FT3)
627.322

INITIAL METER
VOL (FT3)
564.550

ABSOLUTE STACK
PRES. (''HG)
29.87

IS THE % H2O
KNOWN ?
0=YES
1=NO

WATER GAIN (G)
41.00

% CO2
0.00

% O2
20.90

% CO
0.00

PITOT COEF.(CP)
0.840

SAMPLE TIME, MIN
96

NOZZLE DIAMETER
(INCHES)
0.248

ROUND STACK ?
1=YES
0=NO

STACK DIA. ('')
48.0

AVE STACK TEMP.
'F
91

METER CALIBRA-
TION FACTOR (G)
1.0001

==========

NET METER VOL.
FT3
62.778

CORECTED SAMPLE
VOLUME (VMSTD)
SCF
55.241

MOLE FRACTION
DRY GAS (MD)
0.966

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
28.469

AVE VELOCITY
FPM
1798.51

STACK AREA (AS)
SQ. IN.
1809.6

STACK DRY FLOW
QS SCFM
20880.95

ACFM
21835.75

EXCESS AIR (%)
33983.74

****
ISOKINETIC %I
103.2
****

CONGRATULATIONS.

STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F

-END-

EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
7

RUN #
12

FILTER #
0

VELOCITY PARA-
METER (KV)
12.152

AVE METER TEMP.
(TM) 'F
124
'R
584

AVE DELTA H
(''H2O)
1.189

AVE DELTA P
(''H2O)
0.271

FINAL METER VOL.
(FT3)
688.522

INITIAL METER
VOL (FT3)
627.560

ABSOLUTE STACK
PRES. (''HG)
29.88

IS THE % H2O
KNOWN ?
0=YES
1=NO

WATER GAIN (G)
36.50

% CO2
0.00

% O2
20.90

% CO
0.00

PITOT COEF.(CP)
0.840

SAMPLE TIME, MIN
96

NOZZLE DIAMETER
(INCHES)
0.248

ROUND STACK ?
1=YES
0=NO

STACK DIA. ('')
48.0

AVE STACK TEMP.
'F
87

METER CALIBRA-
TION FACTOR (G)
1.0001

==========

NET METER VOL.
FT3
60.968

CORECTED SAMPLE
VOLUME (VMSTD)
SCF
55.045

MOLE FRACTION
DRY GAS (MD)
0.970

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
28.507

AVE VELOCITY
FPM
1791.85

STACK AREA (AS)
SQ. IN.
1809.6

STACK DRY FLOW
QS SCFM
21038.69

ACFM
21833.67

EXCESS AIR (%)
33983.74

****
ISOKINETIC %I
102.1
****

CONGRATULATIONS.

STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F

-END-

ISO II TAPE 20 MAY 80 CN(8)-10
604 NARF PENSACOLA

EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
8

RUN #
10

FILTER #
0

VELOCITY PARA-
METER (KV)
6.209

AVE METER TEMP.
(TM) 'F
116
'R
576

AVE DELTA H
(''H2O)
1.638

AVE DELTA P
(''H2O)
0.072

FINAL METER VOL.
(FT3)
406.267

INITIAL METER
VOL (FT3)
348.781

ABSOLUTE STACK
PRES. (''HG)
29.83

IS THE % H2O
KNOWN ?
0=YES
1=NO

WATER GAIN (G)
30.10

% CO2
0.00

% O2
21.00

% CO
0.00

PITOT COEF.(CP)
0.840

SAMPLE TIME, MIN
80

NOZZLE DIAMETER
(INCHES)
0.374

ROUND STACK ?
1=YES
0=NO

STACK DIA. ('')
18.0

AVE STACK TEMP.
'F
83

METER CALIBRA-
TION FACTOR (G)
0.9979

==========

NET METER VOL.
FT3
57.365

CORECTED SAMPLE
VOLUME (VMSTD)
SCF
52.424

MOLE FRACTION
DRY GAS (MD)
0.974

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
28.554

AVE VELOCITY
FPM
915.55

STACK AREA (AS)
SQ. IN.
254.5

STACK DRY FLOW
QS SCFM
1526.49

ACFM
1575.22

EXCESS AIR (%)
-32307.69

****
ISOKINETIC %I
99.4
****

CONGRATULATIONS.

STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F

-END-

ISO II TAPE CN (8)-11 604 NARF PENSACOLA
19 MAY 80

EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
8

RUN #
11

FILTER #
0

VELOCITY PARA-
METER (KV)
5.641

AVE METER TEMP.
(TM) 'F
126
'R
586

AVE DELTA H
(''H2O)
1.389

AVE DELTA P
(''H2O)
0.060

FINAL METER VOL.
(FT3)
348.563

INITIAL METER
VOL (FT3)
295.018

ABSOLUTE STACK
PRES. (''HG)
29.93

IS THE % H2O
KNOWN ?
0=YES
1=NO

WATER GAIN (G)
33.60

% CO2
0.00

% O2
21.00

% CO
0.00

PITOT COEF.(CP)
0.840

SAMPLE TIME, MIN
80

NOZZLE DIAMETER
(INCHES)
0.374

ROUND STACK ?
1=YES
0=NO

STACK DIA. ('')
18.0

AVE STACK TEMP.
'F
88

METER CALIBRA-
TION FACTOR (G)
0.9979

==========

NET METER VOL.
FT3
53.433

CORECTED SAMPLE
VOLUME (VMSTD)
SCF
48.157

MOLE FRACTION
DRY GAS (MD)
0.968

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
28.494

AVE VELOCITY
FPM
831.27

STACK AREA (AS)
SQ. IN.
254.5

STACK DRY FLOW
QS SCFM
1370.15

ACFM
1422.15

EXCESS AIR (%)
-32307.69

****
ISOKINETIC %I
101.7
****

CONGRATULATIONS.

STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F

-END-

ISO TAPE (II) CN(8)-13
NARF 604 PENSACOLA

21 MAY 80

EPA METHOD FIVE
ISOKINETIC
PROGRAM II

ENTER DATA FROM
NOMOGRAPH PRGM.
(FILE #1) AS
REQUESTED....

TEST #
8

RUN #
13

FILTER #
0

VELOCITY PARA-
METER (KV)
5.197

AVE METER TEMP.
(TM) 'F
112
'R
572

AVE DELTA H
(''H20)
1.134

AVE DELTA P
(''H20)
0.050

FINAL METER VOL.
(FT3)
485.533

INITIAL METER
VOL (FT3)
449.483

ABSOLUTE STACK
PRES. (''HG)
29.92

IS THE % H20
KNOWN ?
0=YES
1=NO

WATER GAIN (G)
22.30

% CO2
0.00

% O2
21.00

% CO
0.00

PITOT COEF.(CP)
0.840

SAMPLE TIME, MIN
60

NOZZLE DIAMETER
(INCHES)
0.374

ROUND STACK ?
1=YES
0=NO

STACK DIA. ('')
18.0

AVE STACK TEMP.
'F
88

METER CALIBRA-
TION FACTOR (G)
0.9979

==========

NET METER VOL.
FT3
35.974

CORECTED SAMPLE
VOLUME (VMSTD)
SCF
33.205

MOLE FRACTION
DRY GAS (MD)
0.969

MOLECULAR WEIGHT
STACK GAS (MW)
LB/LB MOL
28.507

AVE VELOCITY
FPM
765.80

STACK AREA (AS)
SQ. IN.
254.5

STACK DRY FLOW
QS SCFM
1263.33

ACFM
1311.71

EXCESS AIR (%)
-32307.69

****
ISOKINETIC %I
101.4
****

CONGRATULATIONS.

STANDARD
CONDITIONS ARE
29.92126 ''HG
68.0'F

-END-

3557 RUN 15 20 MAY 80 NARF PENSACOLA

```
ISOKINETIC
CALCULATION
PROGRAM 3


ENTER THE
FOLLOWING DATA
AS REQUESTED,

KEY (RUN/STOP)
AFTER EACH
DATA POINT


TEST #?
        3557
RUN #?
          15
FILTER #?
           0

FINAL METER
VOLUME         FT3
     815.860

INITIAL METER
VOLUME         FT3
     778.480

BAROMET PRESSURE
            IN HG
       29.80

DELTA H
       INCHES H2O

ENTER 0 AFTER
LAST DATA POINT
        0.18

METER TEMP     'F

ENTER 0 AFTER
LAST DATA POINT
          93

H2O GAIN    GRAMS
       20.70
```

```
%CO2
          0.00
%02
         20.90

STATIC PRESSURE
       INCHES H2O
         0.000

PITOT FACTOR
(0.84 FOR S TYPE
 1 FOR REGULAR,
 OR CAL. FACTOR)
          0.84

SAMPLE TIME
            MINUTES
        144.00

NOZZLE DIAMETER
             INCHES
        0.1310

ROUND STACK?
    1=YES
    0=NO

STACK DIAMETER
             INCHES
        132.00

ENTER 0 AFTER
LAST DATA POINT

DELTA P     ''H20
STACK TEMP     'F
         0.558
            82


===============

NET METER VOLUME
        CUBIC FEET
         37.38

CORRECTED SAMPLE
VOLUME VMSTD SCF
         35.56

MOLE FRACTION
DRY GAS         MD
        0.9733

MOLECULAR WEIGHT
OF STACK GAS WET
MW     LB/LB-MOLE
         28.55
```

```
ABSOLUTE STACK
PRESSURE PS ''HG
         29.80

AVERAGE STACK
TEMP. TS        'F
            82

ABS. AVG. STACK
TEMP. TS        'R
           542

AVG STK VELOCITY
VS              FPM
         2566

STACK AREA - AS
   SQUARE INCHES
      13684.8

STACK DRY FLOW
QS             SCFM
       230184
AVE METER TEMP.
           'F
            93
          'R
          553

GEOMETRIC STACK
TEMP AVE   'R
           542


****************
 ISOKINETIC  %I
        108.9
****************
```

3557 NARF PENSACOLA, RUN 16, 21 MAY 80

ISOKINETIC
CALCULATION
PROGRAM 3

ENTER THE
FOLLOWING DATA
AS REQUESTED,

KEY (RUN/STOP)
AFTER EACH
DATA POINT

TEST #?
3557
RUN #?
16
FILTER #?
0

FINAL METER
VOLUME FT3
852.675

INITIAL METER
VOLUME FT3
816.400

BAROMET PRESSURE
IN HG
29.93

DELTA H
INCHES H2O

ENTER 0 AFTER
LAST DATA POINT
0.17

METER TEMP 'F

ENTER 0 AFTER
LAST DATA POINT
96

H2O GAIN GRAMS
20.60

%CO2
0.00
%O2
20.90

STATIC PRESSURE
INCHES H2O
0.000

PITOT FACTOR
(0.84 FOR S TYPE
1 FOR REGULAR,
OR CAL. FACTOR)
0.84

SAMPLE TIME
MINUTES
144.00

NOZZLE DIAMETER
INCHES
0.1310

ROUND STACK?
1=YES
0=NO

STACK DIAMETER
INCHES
132.00

ENTER 0 AFTER
LAST DATA POINT

DELTA P ''H2O
STACK TEMP 'F
0.535
80

==========

NET METER VOLUME
CUBIC FEET
36.28

CORRECTED SAMPLE
VOLUME VMSTD SCF
34.47

MOLE FRACTION
DRY GAS MD
0.9726

MOLECULAR WEIGHT
OF STACK GAS WET
MW LB/LB-MOLE
28.54

ABSOLUTE STACK
PRESSURE PS ''HG
29.93

AVERAGE STACK
TEMP. TS 'F
80

ABS. AVG. STACK
TEMP. TS 'R
540

AVG STK VELOCITY
VS FPM
2503

STACK AREA AS
SQUARE INCHES
13684.8

STACK DRY FLOW
QS SCFM
226168
AVE METER TEMP.
'F
96
'R
556

GEOMETRIC STACK
TEMP AVE 'R
540

****
ISOKINETIC %I
107.4
****

3557 RUN 17, NARF PENSACOLA, 21 MAY 80

```
ISOKINETIC
CALCULATION
PROGRAM 3


ENTER THE
FOLLOWING DATA
AS REQUESTED,

KEY (RUN/STOP)
AFTER EACH
DATA POINT


TEST #?
        3557
RUN #?
          17
FILTER #?
           0

FINAL METER
VOLUME          FT3
      888.362

INITIAL METER
VOLUME          FT3
      853.050

BAROMET PRESSURE
            IN HG
        29.93

DELTA H
       INCHES H2O

ENTER 0 AFTER
LAST DATA POINT
         0.16

METER TEMP     'F

ENTER 0 AFTER
LAST DATA POINT
          96

H2O GAIN    GRAMS
        20.70

%CO2
          0.00
%02
         20.90

STATIC PRESSURE
       INCHES H2O
          0.000

PITOT FACTOR
(0.84 FOR S TYPE
 1 FOR REGULAR,
 OR CAL. FACTOR)
          0.84

SAMPLE TIME
            MINUTES
        144.00

NOZZLE DIAMETER
             INCHES
         0.1310

ROUND STACK?
     1=YES
     0=NO

STACK DIAMETER
             INCHES
        132.00

ENTER 0 AFTER
LAST DATA POINT

DELTA P      ''H2O
STACK TEMP     'F
         0.493
            84


===============

NET METER VOLUME
       CUBIC FEET
         35.31

CORRECTED SAMPLE
VOLUME VMSTD SCF
         33.56

MOLE FRACTION
DRY GAS          MD
        0.9717

MOLECULAR WEIGHT
OF STACK GAS WET
MW      LB/LB-MOLE
         28.53

ABSOLUTE STACK
PRESSURE PS  ''HG
        29.93

AVERAGE STACK
TEMP. TS         'F
           84

ABS. AVG. STACK
TEMP. TS         'R
          544

AVG STK VELOCITY
VS                FPM
        2412

STACK AREA     AS
   SQUARE INCHES
     13684.8

STACK DRY FLOW
QS              SCFM
      216153
AVE METER TEMP.
           'F
           96
          'R
          556

GEOMETRIC STACK
TEMP AVE   'R
          544


*****************
 ISOKINETIC  %I
       109.4
*****************
```

APPENDIX B

CALIBRATIONS

Worksheet

METER CALIBRATION @ 1345

Barometric Pressure 29.985

METER # 90X (RAC) # 3

DONE BY J. A. GARCIA

DATE 13 JUNE 1990

POST PENSACOLA TEST

ΔH = 0.3

Vd initial 500.600 ft^3

Start test and record temperatures every cubic ft.

Vw	Tw(°F)	Tdin (°F)
0	65	85
1	65	88
2	65	90
3	65	93
4	65	95
5	65	96

END TEST

Actual Vw 5.000 ft^3

Vd final 505.708 ft^3

Tt 17.032 (min).(sec)

RUN PROGRAM

γ 1.0269

Hθ 1.8450 $"H_2O$

TIME = 13:54

ΔH = 0.5

Vd initial 507.900 ft^3

Start test and record temperatures every Cf.

Vw	Tw(°F)	Tdin (°F)
0	65	95
1	65	97
2	65	98
3	65	99
4	65	100
5	65	100

END TEST

Actual Vw 5.000 ft^3

Vd final 513.1025 ft^3

Tt 13.324 (min).(sec)

RUN PROGRAM

γ 1.0205

Hθ 1.9142 $"H_2O$

TIME 14:18

ΔH = 0.8

Vd initial 514.900 ft^3

Start test and record temperatures every Cf.

Vw	Tw(°F)	Tdin (°F)
0	65	98
1	65	99
2	65	102
3	65	102
4	65	103
5	65	104

END TEST

Actual Vw 5.000 ft^3

Vd final 520.005 ft^3

Tt 10.170 (min).(sec)

RUN PROGRAM

γ 1.0251

Hθ 1.7566 $"H_2O$

TIME 14:35

NOTE: REPEATED DRY TEST METER DIAL BEFORE CALIB

7

Worksheet

METER CALIBRATION

Barometric Pressure 29.985

METER # Box #3

DONE BY J. A. GARCIA

DATE 13 JUNE 1980

POST PENSACOLA TEST

ΔH = ~~0.5~~ 1.5

Vd initial 523.100 ft³

Start test and record temperatures every cubic ft.

Vw	Tw(°F)	Tdin (°F)
0	65	102
1	65	103
2	65	104
3	65	106
4	65	107
5	65	107

END TEST

Actual Vw 5.000 ft³

Vd final 528.365 ft³

Tt ~~7~~ 7.338 (min).(sec)

RUN PROGRAM

γ 1.0180

Hθ 1.7706 "H₂O

TIME: 1453

ΔH = ~~0.5~~ 2.0

Vd initial 531.000 ft³

Start test and record temperatures every Cf.

Vw	Tw(°F)	Tdin (°F)
0	65.5	106
1	65.5	106
2	65.5	108
3	65.5	109
4	65.5	109
5	65.5	110

END TEST

Actual Vw 5.000 ft³

Vd final 536.273 ft³

Tt ~~6.332~~ 6.332 (min).(sec)

RUN PROGRAM

γ 1.0199

Hθ 1.7659 "H₂O

TIME: 1506

ΔH = ~~0.8~~ 3.0

Vd initial 539.000 ft³

Start test and record temperatures every Cf.

Vw	Tw(°F)	Tdin (°F)
0	65.5	108
1	65.5	108
2	65.5	109
3	65.5	110
4	65.5	111
5	65.5	111

END TEST

Actual Vw 5.000 ft³

Vd final 544.275 ft³

Tt 5.376 (min).(sec)

RUN PROGRAM

γ 1.0197

Hθ 1.9476 "H₂O

TIME: 1517

AVE = γ = 1.0217

Hθ = 1.~~95~~8333

PITOT TUBE IDENTIFICATION NUMBER: 3-2 DATE: 7-11-80

CALIBRATED BY: Aud / Sig

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p$(A)
1	1.53	2.30	.790	
2	1.53	2.39	.792	
3	1.52	2.40	.788	
		$\bar{C}_p$ (SIDE A)	.790	

½ Nozz

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p$(B)
1	1.00	1.40	.837	
2	1.00	1.45	.822	
3	0.99	1.50	.804	
		$\bar{C}_p$ (SIDE B)	.821	

½ Nozz

$$\text{AVERAGE DEVIATION} = \sigma\text{(A OR B)} = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p\text{(A OR B)} \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p\text{ (SIDE A)} - \bar{C}_p\text{ (SIDE B)} \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2.9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: 3-2 DATE: _____

CALIBRATED BY: _____

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	0.62	0.70	.853	
2	0.61	0.69	.851	
3	0.50	0.70	.837	
		$\bar{C}_p$ (SIDE A)	.847	

3/8 Noz

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1				
2				
3				
		$\bar{C}_p$ (SIDE B)		

$$\text{AVERAGE DEVIATION} = \sigma(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p(\text{A OR B}) \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p(\text{SIDE A}) - \bar{C}_p(\text{SIDE B}) \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: 3-2 DATE: _____

CALIBRATED BY: _____

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	1.52	2.19	.825	
2	1.53	2.15	.835	
3	1.52	2.10	.842	
		$\bar{C}_p$ (SIDE A)	.834	

3/8 Noz

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1	1.02	1.49	.819	
2	1.00	1.40	.837	
3	1.01	1.40	.841	
		$\bar{C}_p$ (SIDE B)	.832	

3/8 Noz

$$\text{AVERAGE DEVIATION} = \sigma(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p(\text{A OR B}) \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p(\text{SIDE A}) - \bar{C}_p(\text{SIDE B}) \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: 3-2 DATE: _____

CALIBRATED BY: _____

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	1.01	1.40	.841	
2	1.06	1.39	.840	
3	1.00	1.40	.837	
		$\bar{C}_p$ (SIDE A)	.839	

1/4 Nozzle

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1	1.53	2.10	.845	
2	1.52	2.05	.852	
3	1.53	2.00	.866	
		$\bar{C}_p$ (SIDE B)	.854	

1/4 Nozzle

$$\text{AVERAGE DEVIATION} = \sigma(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p(\text{A OR B}) \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p(\text{SIDE A}) - \bar{C}_p(\text{SIDE B}) \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2.9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: 3-2 DATE: _____

CALIBRATED BY: _____

1/2 No 2

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	0.51	0.79	.795	
2	0.52	0.80	.798	
3	0.51	0.78	.801	
		$\bar{C}_p$ (SIDE A)	.798	

1/4 No 2

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1	0.51	0.70	.845	
2	0.51	0.68	.857	
3	0.51	0.69	.851	
		$\bar{C}_p$ (SIDE B)	.851	

$$\text{AVERAGE DEVIATION} = \sigma(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p(\text{A OR B}) \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p(\text{SIDE A}) - \bar{C}_p(\text{SIDE B}) \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2.9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: 3-3 DATE: 7- -80

CALIBRATED BY: SIG / AND

3/8

No 2

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	1.56	2.7	.753	
2	1.55	2.6	.764	
3	1.56	2.7	.753	
		$\bar{C}_p$ (SIDE A)	.757	

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1	1.00	1.7	.759	
2	0.99	1.7	.755	
3	1.00	1.75	.748	
		$\bar{C}_p$ (SIDE B)	.754	

$$\text{AVERAGE DEVIATION} = \sigma(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p(\text{A OR B}) \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p \text{ (SIDE A)} - \bar{C}_p \text{ (SIDE B)} \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: 3-3 DATE: _____

CALIBRATED BY: _____

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	0.54	0.85	.787	
2	0.53	0.90	.770	
3	0.54	0.87	.780	
		$\bar{C}_p$ (SIDE A)	.776	

3/8
No2

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1	0.54	0.80	.813	
2	0.54	0.80	.813	
3	0.54	0.79	.818	
		$\bar{C}_p$ (SIDE B)	.815	

1/2
No2

$$\text{AVERAGE DEVIATION} = \sigma(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p(\text{A OR B}) \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p \text{ (SIDE A)} - \bar{C}_p \text{ (SIDE B)} \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: 3-3 DATE: _____

CALIBRATED BY: _____

1/2 Noz

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	1.03	1.50	.820	
2	1.02	1.49	.819	
3	1.02	1.52	.811	
		$\bar{C}_p$ (SIDE A)	.817	

1/2 Noz

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1	1.54	2.34	.795	
2	1.56	2.40	.798	
3	1.54	2.39	.795	
		$\bar{C}_p$ (SIDE B)	.796	

$$\text{AVERAGE DEVIATION} = \sigma\,(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p(\text{A OR B}) \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p\,(\text{SIDE A}) - \bar{C}_p\,(\text{SIDE B}) \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: 3-3 DATE: _____

CALIBRATED BY: _____

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	1.52	2.25	.824	
2	1.54	2.20	.829	
3	1.53	2.20	.826	
		$\bar{C}_p$ (SIDE A)	.823	

1/4 Noz

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1	1.05	1.70	.778	
2	1.04	1.71	.777	
3	1.04	1.66	.784	
		$\bar{C}_p$ (SIDE B)	.778	

1/4 Noz

$$\text{AVERAGE DEVIATION} = \sigma(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p(\text{A OR B}) \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p(\text{SIDE A}) - \bar{C}_p(\text{SIDE B}) \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: 3-3 DATE: _____

CALIBRATED BY: _____

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	0.54	0.80	.813	
2	0.54	0.79	.818	
3	0.54	0.80	.813	
		$\bar{C}_p$ (SIDE A)	.815	

1/4
No2

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1				
2				
3				
		$\bar{C}_p$ (SIDE B)		

$$\text{AVERAGE DEVIATION} = \sigma\,(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p(\text{A OR B}) \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p\,(\text{SIDE A}) - \bar{C}_p\,(\text{SIDE B}) \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: 3-4 DATE: 7/2/80

CALIBRATED BY: DIANE TEST & FLORENCE CHANELE

1/4" nozzle

RUN NO.	"A" SIDE CALIBRATION Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	1.56	2.36	.80	-.01
2	1.58	2.36	.81	0
3	1.60	2.32	.82	+.01
		$\bar{C}_p$ (SIDE A)	.81	

3/8" nozzle

RUN NO.	[illegible] Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1	1.58	2.32	.82	+.01
2	1.60	2.42	.80	-.01
3	1.60	2.42	.80	-.01
		$\bar{C}_p$ (SIDE B)	.81	

$$\text{AVERAGE DEVIATION} = \sigma\,(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p(\text{A OR B}) \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p\,(\text{SIDE A}) - \bar{C}_p\,(\text{SIDE B}) \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

1/4" nozzle

PITOT TUBE IDENTIFICATION NUMBER: #3-4 DATE: 5/2/80

CALIBRATED BY: [illegible]

	"A" SIDE CALIBRATION			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} \cdot \bar{C}_p(A)$
1	.49	.76	.79	-.02
2	.50	.77	.80	-.01
3	.50	.71	.83	+.02
		$\bar{C}_p$ (SIDE A)	.81	

1/4" nozzle

	[illegible]			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} \cdot \bar{C}_p(B)$
1	1.02	1.60	.79	-.02
2	1.06	1.58	.81	0
3	1.05	1.54	.82	+.01
		$\bar{C}_p$ (SIDE B)	.81	

$$\text{AVERAGE DEVIATION} = \sigma(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_p(s) - \bar{C}_p(\text{A OR B}) \right|}{3} \longleftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p(\text{SIDE A}) - \bar{C}_p(\text{SIDE B}) \right| \longleftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: #3-4 DATE: 7/2/80

CALIBRATED BY: DIANE TEGT & FLORENCE [illegible]

[illegible] NOZZLE

	"A" SIDE CALIBRATION			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	1.06	1.62	.80	+.01
2	1.08	1.70	.79	0
3	1.00	1.65	.77	-.02
		$\bar{C}_p$ (SIDE A)	.79	

3/8" NOZZLE

	"B" side calibration			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1	.51	.82	.78	0
2	.52	.83	.78	0
3	.50	.84	.77	-.01
		$\bar{C}_p$ (SIDE B)	.78	

$$\text{AVERAGE DEVIATION} = \sigma(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p(\text{A OR B}) \right|}{3} \longleftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p(\text{SIDE A}) - \bar{C}_p(\text{SIDE B}) \right| \longleftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: #3, 4 DATE: 7/10/80

CALIBRATED BY: [illegible]

½" NOZZLE

	"A" SIDE CALIBRATION			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	.50	.84	.76	-.01
2	.51	.84	.77	0
3	.51	.82	.79	-.01
		$\bar{C}_p$ (SIDE A)	.77	

½" NOZZLE

	[illegible]			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1	1.04	1.66	.78	-.01
2	1.04	1.68	.78	-.01
3	1.06	1.68	.79	0
		$\bar{C}_p$ (SIDE B)	.78	

$$\text{AVERAGE DEVIATION} = \sigma\text{(A OR B)} = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p\text{(A OR B)} \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p \text{ (SIDE A)} - \bar{C}_p \text{ (SIDE B)} \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: [illegible]-4 DATE: 7/2/80

CALIBRATED BY: [illegible]

1/2" nozzle

	"A" SIDE CALIBRATION			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	1.62	2.42	.81	0
2	1.62	2.43	.81	0
3	1.61	2.42	.81	0
		$\bar{C}_p$ (SIDE A)	.81	

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1				
2				
3				
		$\bar{C}_p$ (SIDE B)		

$$\text{AVERAGE DEVIATION} = \sigma(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p(\text{A OR B}) \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p \text{ (SIDE A)} - \bar{C}_p \text{ (SIDE B)} \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

5-2

PITOT TUBE IDENTIFICATION NUMBER: ~~#~~ DATE: 5/2/80

CALIBRATED BY: _____

1/4 nozzle

	"A" SIDE CALIBRATION			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	.67	1.0	.80	[illegible]
2	.68	1.0	.77	[illegible]
3	.68	1.0	.77	[illegible]
		$\bar{C}_p$ (SIDE A)	.77	

1/4 nozzle

	"B" SIDE CALIBRATION			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1	.22	.34	.80	+.01
2	.23	.35	.80	+.01
3	.22	.35	.78	-.01
		$\bar{C}_p$ (SIDE B)	.79	

$$\text{AVERAGE DEVIATION} = \sigma\text{(A OR B)} = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p\text{(A OR B)} \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p \text{ (SIDE A)} - \bar{C}_p \text{ (SIDE B)} \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: #5-2 DATE: 5/2/90

CALIBRATED BY: _____

1/4 no33le

	"A" SIDE CALIBRATION			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	1.83	2.35	.85	+.02
2	1.84	2.42	.83	-.02
3	1.80	2.37	.83	-.02
		$\bar{C}_p$ (SIDE A)	.84	

$$C_p = .99\sqrt{\frac{\Delta P_{(s)}}{\Delta P_{std}}}$$

1/4 no33le

	"B" SIDE CALIBRATION			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1	1.02	1.54	.81	0
2	1.01	1.50	.81	0
3	1.01	1.49	.82	+.01
		$\bar{C}_p$ (SIDE B)	.81	

$$\text{AVERAGE DEVIATION} = \sigma\,(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p(\text{A OR B}) \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p\,(\text{SIDE A}) - \bar{C}_p\,(\text{SIDE B}) \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: #5-2 DATE: 5/2/80

CALIBRATED BY: _____

1/4 nozzle

	"A" SIDE CALIBRATION			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	1.46	2.16	.81	-.01
2	1.44	2.12	.82	0
3	1.45	2.12	.82	0
		$\bar{C}_p$ (SIDE A)	.82	

	"B" SIDE CALIBRATION			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1				
2				
3				
		$\bar{C}_p$ (SIDE B)		

$$\text{AVERAGE DEVIATION} = \sigma\,(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p(\text{A OR B}) \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p\,(\text{SIDE A}) - \bar{C}_p\,(\text{SIDE B}) \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

3/8" nozzle

PITOT TUBE IDENTIFICATION NUMBER: #5-2 DATE: 5/2/80

CALIBRATED BY: DILLE TEAT AND FLORENCE CIRELLI

"A" side Calibration

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_{p(A)}$
1	.57	.90	.79	-.02
2	.58	.82	.83	+.02
3	.57	.85	.81	0
		$\bar{C}_p$ (SIDE A)	.81	

3/8" nozzle

"B" side Calibration

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_{p(B)}$
1	1.01	1.44	.83	-.01
2	1.02	1.43	.84	0
3	1.00	1.40	.84	0
		$\bar{C}_p$ (SIDE B)	.84	

$$\text{AVERAGE DEVIATION} = \sigma\,(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_{p(\text{A OR B})} \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p\,(\text{SIDE A}) - \bar{C}_p\,(\text{SIDE B}) \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

3/8" nozzle

PITOT TUBE IDENTIFICATION NUMBER: #5-2 DATE: 05/02/80

CALIBRATED BY: Diane Tegt & Florence Cirinelli

1.5 stan

	"A" SIDE CALIBRATION			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	1.52	2.20	.82	-.01
2	1.54	2.20	.83	0
3	1.54	2.22	.83	0
		$\bar{C}_p$ (SIDE A)	.83	

1/2" nozzle

1.5 stan

	"A" side calibration			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1	1.56	2.24	.83	+.01
2	1.56	2.28	.82	0
3	1.56	2.28	.82	0
		$\bar{C}_p$ (SIDE B)	.82	

$$\text{AVERAGE DEVIATION} = \sigma(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_p(s) - \bar{C}_p(\text{A OR B}) \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p(\text{SIDE A}) - \bar{C}_p(\text{SIDE B}) \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

1/2" NOZZLE

PITOT TUBE IDENTIFICATION NUMBER: #5-2 DATE: 5/2/80

CALIBRATED BY: DIANE TEGT AND FLORENCE CIREHELLI

RUN NO.	"A" SIDE CALIBRATION Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	1.00	1.42	.83	-.01
2	1.01	1.40	.84	0
3	1.02	1.43	.84	0
		$\bar{C}_p$ (SIDE A)	.84	

1/2" nozzle

RUN NO.	"A" side Calibration Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1	.72	1.02	.83	0
2	.73	1.03	.83	0
3	.73	1.02	.84	+.01
		$\bar{C}_p$ (SIDE B)	.83	

$$\text{AVERAGE DEVIATION} = \sigma(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p(\text{A OR B}) \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p(\text{SIDE A}) - \bar{C}_p(\text{SIDE B}) \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: S-1 DATE:

CALIBRATED BY:

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1				
2				
3				
		$\bar{C}_p$ (SIDE A)		

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1				
2				
3				
		$\bar{C}_p$ (SIDE B)		

$$\text{AVERAGE DEVIATION} = \sigma\,(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p(\text{A OR B}) \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p\,(\text{SIDE A}) - \bar{C}_p\,(\text{SIDE B}) \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: #5-1 DATE: 4/1/80

CALIBRATED BY:

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	1.54			
2	1.54			
3				
		$\bar{C}_p$ (SIDE A)		

"A" side calibration

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1		1.52	.83	
2		1.51		
3	1.08			
		$\bar{C}_p$ (SIDE B)		

$$\text{AVERAGE DEVIATION} = \sigma\text{(A OR B)} = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p\text{(A OR B)} \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p \text{ (SIDE A)} - \bar{C}_p \text{ (SIDE B)} \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: #5-1 DATE: 7/2/85

CALIBRATED BY: [illegible]

1/8" nozzle

	"A" SIDE CALIBRATION			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_{p(A)}$
1	.51	.42	.83	0
2	.52	.44	.83	0
3	.52	.42	.83	0
		$\bar{C}_p$ (SIDE A)	.83	

3/8" nozzle

	"A" side calibration			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_{p(B)}$
1	.5	.42	.83	0
2	.51	.42	.83	0
3	51	.42	.83	0
		$\bar{C}_p$ (SIDE B)	.83	

$$\text{AVERAGE DEVIATION} = a\,(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_{p(\text{A OR B})} \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p\,(\text{SIDE A}) - \bar{C}_p\,(\text{SIDE B}) \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: #5-1 DATE: 7/2/80

CALIBRATED BY: Lynn Trat & Florence Cirimele

1/2" nozzle

RUN NO.	"A" SIDE CALIBRATION Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	1.54	2.42	.79	0
2	1.52	2.38	.79	0
3	1.56	2.40	.80	+.01
		$\bar{C}_p$ (SIDE A)	.79	

1/2" nozzle

RUN NO.	"A"-side Calibration Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1	1.01	1.34	.86	0
2	1.02	1.32	.87	+.01
3	1.04	1.40	.85	-.01
		$\bar{C}_p$ (SIDE B)	.86	

$$\text{AVERAGE DEVIATION} = \sigma(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p(\text{A OR B}) \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p(\text{SIDE A}) - \bar{C}_p(\text{SIDE B}) \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: 10-1 DATE: 9/3/80

CALIBRATED BY: [illegible]

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	.54	.41	.85	0
2	.54	.41	.85	0
3	.54	.42	.84	-.01
		$\bar{C}_p$ (SIDE A)	.85	

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1	1.03	1.50	.84	+.01
2	1.03	1.49	.83	-.01
3	1.03	1.50	.84	+.01
		$\bar{C}_p$ (SIDE B)	.84	

$$\text{AVERAGE DEVIATION} = \sigma\text{(A OR B)} = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p\text{(A OR B)} \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p\text{ (SIDE A)} - \bar{C}_p\text{ (SIDE B)} \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: #10-1 DATE: 2/3/82

CALIBRATED BY: [illegible]

¼" nozzle

RUN NO.	ΔP_{std} cm H_2O (in. H_2O)	$\Delta P_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	1.64	2.50	.82	0
2	1.63	2.54	.83	0
3	1.65	2.52	.83	0
		$\bar{C}_p$ (SIDE A)	.83	

⅜" nozzle

RUN NO.	ΔP_{std} cm H_2O (in. H_2O)	$\Delta P_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1	1.62	2.28	.83	0
2	1.[illegible]	2.30	.[illegible]	+.01
3	1.63	2.[illegible]4	.83	0
		$\bar{C}_p$ (SIDE B)	.83	

$$\text{AVERAGE DEVIATION} = \sigma\text{(A OR B)} = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p\text{(A OR B)} \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p\text{ (SIDE A)} - \bar{C}_p\text{ (SIDE B)} \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: # 10-1 DATE: 2/3/[illegible]

CALIBRATED BY: [illegible]

3/4" nozzle

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	1.50	1.54	.81	-.01
2	1.02	1.53	.81	-.01
3	1.05	1.02	.83	+.01
		$\bar{C}_p$ (SIDE A)	.82	

3/4" nozzle

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1	.54	.90	.81	-.01
2	.56	.91	.82	.0
3	.56	.92	.84	+.02
		$\bar{C}_p$ (SIDE B)	.82	

$$\text{AVERAGE DEVIATION} = \sigma\text{(A OR B)} = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p\text{(A OR B)} \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p \text{ (SIDE A)} - \bar{C}_p \text{ (SIDE B)} \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: #10-1 DATE: 7/13/00

CALIBRATED BY: [illegible]

½" nozzle

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p$(A)
1	.54	.27	.82	-.01
2	.56	.30	.83	0
3	.55	.27	.84	+.01
		$\bar{C}_p$ (SIDE A)	.83	

½" nozzle

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p$(B)
1	1.04	1.50	.82	-.01
2	1.06	1.52	.83	0
3	1.05	1.51	.83	0
		$\bar{C}_p$ (SIDE B)	.83	

$$\text{AVERAGE DEVIATION} = \sigma\text{(A OR B)} = \frac{\sum_{1}^{3} \left| C_{p(s)} - \bar{C}_p\text{(A OR B)} \right|}{3} \leftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p\text{ (SIDE A)} - \bar{C}_p\text{ (SIDE B)} \right| \leftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

PITOT TUBE IDENTIFICATION NUMBER: #10-1 DATE: [illegible]

CALIBRATED BY: [illegible]

1/2" nozzle

RUN NO.	"A" [illegible] Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(A)$
1	1.64	2.34	.83	0
2	1.66	2.36	.83	0
3	1.68	2.32	.84	+.01
		$\bar{C}_p$ (SIDE A)	.83	

RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_{p(s)}$	DEVIATION $C_{p(s)} - \bar{C}_p(B)$
1				
2				
3				
		$\bar{C}_p$ (SIDE B)		

$$\text{AVERAGE DEVIATION} = \sigma(\text{A OR B}) = \frac{\sum_{1}^{3} \left| C_p(s) - \bar{C}_p(\text{A OR B}) \right|}{3} \longleftarrow \text{MUST BE} \leq 0.01$$

$$\left| \bar{C}_p(\text{SIDE A}) - \bar{C}_p(\text{SIDE B}) \right| \longleftarrow \text{MUST BE} \leq 0.01$$

Figure 2-9. Pitot tube calibration data.

APPENDIX C

CHEMICAL BATHS

SEF-1, Magnesium Dichromate Treatment Section, Bldg. 604

Tank No.	Content or Label	Concentration	Capacity (gal)	Temperature	Status
325	Hot water rinse		1122 gal.	95-205°F	Empty
326	Chromic acid dragout		1122		
327	Stagnant water rinse		1122	70-90°F	Empty
328	Dichromate treatment	5-10%	1122	205-215	Empty
329	HF dip	15-20%	1122	70-90°F	Empty
330	Cold water rinse		1122	70-90°F	
331	Cold water rinse,		1122		
	Chromic acid dragout		1122		
332	Chromic acid strip	1.5 #/gal	1122	190-200°F	Almost Empty
333	Water		1122	70-90°F	
334	Caustic soak	1.4 #/gal	1122	160°F	
335	Water		1122	70-90°F	
337	Water	Contaminated with HNO_3	1934	70-90°F	
338	HNO_3 dip	20% by vol.	1934		
339	Hot water		7735		
340	Anodize out		7735	70-90°F	
422	Copper strip	H_2SO_4 4 + 1. oz/gal Chromic acid	64 oz/gal	70-90°F	
424		60% H_2SO_4 40% HNO_3			
425	Hot chromic acid dip	Chromic acid	24 oz/gal		Empty
426	Chromic acid drag out		300	70-90°F	
429	Cold water		300		
432	Magnesium treatment, Type III	Irridite 15 HCl ARP #2	5 oz/gal 59 ml/gal 1 ml/gal		
502	NaOH		6-8 oz/gal		

SEF-2, Alodine Treatment Section, Bldg. 604

Tank No.	Content or Label	Concentration	Capacity (gal)	Temperature	Status
341	Chromic acid anodyze	5-10% by wt.	7735	91-99°F	
342	Hot water rinse		1347	175-185°F	
343	Cold water rinse		1347	70-90°F	
344	Anodyne	Chromic acid	1347		
345	Water		1347		
346	Water, chromic acid drag out		1347		
347					Empty

SEF-3, Hard Chrome Plating Section, Bldg. 604

Tank No.	Content or Label	Concentration	Capacity (gal)	Temperature	Status
348	Hot water rinse				
349	De-wax				
350	Cold water rinse		673	70-90°F	
351	Flash chrome plate	chromic acid	337	136-140°F	
352	Chromic acid drag out		673	70-90°F	
353	Chrome plate				
354	Cold water rinse				
355	Chrome strip				
356	Wax dip				
361	Hot water rinse				Empty
362	Wax dip				Empty
363	Cold water rinse		1122	70-90°F	Empty
364	Flash chrome plate	Chrome acid	1122	136-140°F	
365	Chromic acid drag out				
366	Chrome plate	Chromic acid 40-43 oz/gal H_2SO_4 6-7 oz/gal	1122	136-140°F	
367	Chrome plate	Chromic acid 40-43 oz/gal H_2SO_4 6-7 oz/gal	1122	136-140°F	
368	Cold water rinse		1122	70-90°F	
369	Wax dip		224	235-245°F	
370	Sulfuric anodize	15-25% H_2SO_4	300	68-72°F	
371	Nitric acid dip				Empty
372	Cold water rinse				
373	Color dips			130-150°F	
374	Cold water rinse				
375	Seal				
376	Hot water rinse			95-205°F	
377	Cold water rinse		300	70-90°F	
378	Hard coat anodize	16% H_2SO_4 oxalic acid 2 oz/gal		48-52°F	
379	Aluminum chrome strip	Chromic acid 50 oz/gal H_2SO_4 25 ml/gal	300	70-90°F	
380	Stagnant water		300	70-90°F	
381	Chromic acid drag out		300	70-90°F	

Tank No.	Content or Label	Concentration	Capacity (gal)	Temperature	Status
382	Anodize strip	H_2SO_4 10% by volume	300	145-155°F	
383	Cold water rinse				Empty

SEF-4, Zincate Acid Copper Line, Tin Plate, and Acid Dip, Bldg. 604

Tank No.	Content or Label	Concentration	Capacity (gal)	Temperature	Status
384	Hot water rinse				
385	Hot nitric passivate	10-15% HNO_3			
386	Cold water rinse		300	70-90°F	
387	Parkerize	Phosphate coat, Type II 7 oz/gal	1682	190-210°F	
388	Citrate treatment			155-165°F	Empty
389	Cold water rinse				
390	Muriatic acid dip				Empty
392	Zincate treatment	NaOH 7.0 oz/gal Rochelle salt 1.3 oz/gal			
393	CN drag out				
394	Cold water rinse				
395	Covered tank				
396	Acid copper plate	$CuSO_4$ 28.0 oz/gal H_2SO_4 7.0 oz/gal			
398	Cold water rinse				
399	Nitric-hydroflouric acid dip	HNO_3 70% by vol. HF 10% by vol.			
400	Cyanide copper plate	$Cu(CN)_2$ 5.0-6.2 oz/gal NaCN 6.0-7.0 oz/gal		Na_2CO_3 3-5 oz/gal Rochelle salt	
401	CN drag out				
402	Cold water rinse				
403	Hard anodize strip				Empty
404	H_2SO_4 strip	25% by vol	90	145-155°F	
405	Cold water rinse				
406	Muriatic acid dip	50% by vol		70-90°F	
407	Cold water rinse				
408	Hot water rinse			195-205°F	
409	Black oxide treatment	NH_4NO_3 40 oz/gal NaOH 50 oz/gal			
410	Parco lubrite phosphate coat		300	205-215°F	

Tank No.	Content or Label	Concentration	Capacity (gal)	Temperature	Status
411	Hot water rinse		300	205-215°F	
412	Tin plate	Nastannate Sodium acetate NaOH	16 oz/gal 2 oz/gal 1 oz/gal		
413	Hot water rinse				
414					
415	Cold water rinse		1122	70-90°F	
416	HNO_3 dip	15-20% vol.			
417	Cold water rinse		1122	70-90°F	
418*	Alkaline cleaner	Turbofoam a/cleaner 7.0 oz/gal		145-155°F	
419*	Hot water rinse		1347	175-185°F	
420*	De-smut				
421*	Chem. mill	Toluene turco etchant 13B	1347	190-200°F	

* Also exhaust through scrubber SEF-5

SEF-5, Nickel, Copper and Silver Plating Section

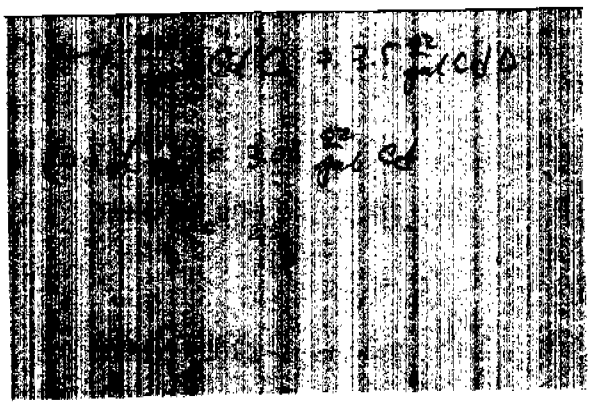
Tank No.	Content or Label	Concentration	Capacity (gal)	Temperature	Status
418*	Alkaline cleaner	Turbofoam a/cleaner 7 oz/gal		145-155°F	
419*	Hot water rinse		1347	175-185°F	
420*	De-smut				
421*	Chem. mill	Toluene turco ethant 13B	1347	190-200°F	
427	Hot water rinse			195-205°F	Empty
428	Cold water rinse				Covered
430	Sulfamate nickel plate	Nickel 10-12 oz/gal Chloride 0.5-0.9 oz/gal Boric acid 4.0 oz/gal			
431	Cold water rinse				
433	Cold water rinse				
434	Cold water rinse				
435	Sulfamate nickel plate	Same as 430			
436	Sulfamate nickel plate	Nickel 10-12 oz/gal Chloride 0.05-0.09 oz/gal			
438	Cold water rinse				
439	Wax coat				
440	Nickel strip	Sulfuric acid 63% vol. $CuSO_4$ 4 oz/gal H_2SO_4 50% vol.			
441	Sulfuric acid etch			Room temp.	
442	Cold water rinse			70-90°F	
442	Cold water rinse				Empty
443	Nickel strike	$NiCl_2$ 38.5 oz/gal	300	70-90°F	
444	Electro cleaner				
445	HCl etch	HCl 5-10% by vol.			
446	CN dip	NaCN 2 oz/gal	300	70-90°F	
447	Copper plate	$Cu(CN)_2$ 3-6 oz/gal NaCN 4-7 oz/gal Rochelle salt 3-8 oz/gal Na_2CO_3 2-8 oz/gal	300	110-140°F	Empty

Tank No.	Content or Label	Concentration	Capacity (gal)	Temperature	Status
448	CN drag out	Neutralizing solution	300		
449	Cold water rinse		300		
450	Nickel strip				Covered
451	Stagnant water				Empty
452	Silver strip	NaCN 6 oz/gal NaOH 4 oz/gal		Room temp.	
453	CN drag out				
455	Electroclean	ANODEX 12 oz/gal HCl 20% by vol	300	194-200°F	
456	HCl dip		700	70-90°F	
457	Cold water rinse			70-90°F	
458	Zincate	Almon 80 oz/gal		70-90°F	Empty
459	Silver plate hi speed	AgCN 16 oz/gal KCN 16 oz/gal KOH 1-3 oz/gal	225	115-125°F	
460	Cold water rinse		90	70-90°F	
463	CN drag out				
464	Cold water rinse		90	70-90°F	
465	Cold water rinse		90	70-90°F	
466	HNO_3 dip	HNO_3 100%			Empty
467	Wax or mask	Paraffin	80	235-245	
468	Cold water rinse				Empty
469	HCl dip	10% HCl	90		Empty
470	HNO_3-HF dip	HNO_3 70% HF 10%			Empty
471	Cold water rinse				Empty
472	CN dip				Empty
473	Copper plate				Empty
474	CN drag out				
475	Cold water rinse				
476	Silver strike	AgCN 507 oz/gal KCN 8-10 oz/gal	90	70-90°F	
504	Silver plate hi speed	AgCN 14-19 oz/gal KCN 15-18 oz/gal KOH 1-3 oz/gal $KrCO_3$ 4-6 oz/gal			

Tank No.	Content or Label	Concentration	Capacity (gal)	Temperature	Status
506	Sulfamate nickel plate hand	Ni 10-12 oz/gal Cl 0.5-0.9 oz/gal boric acid 0.4 oz/gal SNHA 0.5-3.0 oz.gal			
550	Sulfamate nickel plate hand				Empty

SEF-6, Cadmium Plating Section, Bldg. 604

Tank No.	Content or Label	Concentration	Capacity (gal)	Temperature	Status
301	Ammonium nitrate strip	NH_4NO_3 11b/gal			
302	Cold water rinse		1047		
303	HCl dip				Empty
304	Cold water rinse				
305	Cadmium plate	NaCN 9-12 oz/gal CdO 3-4 oz/gal NaOH 1-2 oz/gal			
306	Cold water rinse				Empty
307	Electro clean				
308	Cold water rinse				
309	HCl dip				
310	Cold water rinse				
311	Cadmium plate				
312	CN drag out				
313	Cold water rinse				
314	Chromate treatment				
315	Cold water rinse				
316	Hot water rinse		1047	175-185°F	
477	Cyanide dip				Empty
481	Cyanide drag out				
482	Cold water rinse				
483	Hot water rinse				
538	Barrel cadmium plate				Empty
539	Barrel cadmium plate	NaCN 10-20 oz/gal Cad. oxide 4-7 oz/gal NaOH 1-2 oz/gal			
540	Barrel cadmium plate	Same as 539			



SEF-7, Automatic Cadmium Plating Machine Section, Bldg. 604

Tank No.	Content or Label	Concentration	Capacity (gal)	Temperature	Status
511	Soak clean hot water				
512	Electro clean	P.C. 535 8-12 oz/gal			
513	Cold water rinse				
514	Cold water rinse				
515	H_2SO_4 dip	10% H_2SO_4			
516	Cold water rinse				
517	Acid neutralizer	NaOH 3 oz/gal			
518	Cold water rinse				
519	Cyanide dip	NaCN 2 oz/gal			
520	Cadmium plate	NaCN 9-12 oz/gal Na_2O 3-4 oz/gal NaOH 1-2 oz/gal			
521	Cyanide neutralizer				
522	Cold water rinse				
523	Chromate treat	Endox 980 1-2 oz/gal		Room temp.	
524	Stagnant water rinse				
525	Cold water rinse				
526	Cold water rinse				
527	Hot water rinse				
528	Hot air dryer				

VAT Room, Bldg. 3557

Tank No.	Content or Label	Status
108	Resin strip	
109	Spray rinse	Covered
110	Acrylic rinse	
111	Spray rinse	Covered
112	Paint strip	Empty
114	Grease emulsifier	Covered
115	Hot alkaline rust remover	Covered
116	Hot water rinse	
117	Carbon remover	
118	Spray rinse	Covered
119	Spray rinse	Covered
120	Spray rinse	Covered
121	Grease emulsifier	Empty
122	Resin strip	Empty
123	Spray rinse	Empty
124	Carbon remover	
125	Spray rinse	Covered
126	Paint strip	
127	Spray rinse	Covered
128	Grease emulsifier	Covered
129	Spray rinse	Covered
130	Spray rinse	Covered
131	Hot caustic	
132	Spray rinse	Covered
133	Chromic acid strip	
136	Stoddard solvent	
137	Vapor degreaser	Empty
138	Hot water rinse	
139	HF dip	
140	Hot water rinse	
141	Dichromate	
142	Hot water rinse	
143	Hot water rinse	

APPENDIX D

FIELD DATA

FILTER NOs	
	Q/A

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME _____

DATE 6 MAY 80

LOCATION NAAF PENSACOLA

RUN NO. SEF 1-1

PLANT ECA

STACK NO. SEF 1

SOURCE PLATING SHOP SCRUBBER

SAMPLE BOX NO. _____

A.	Stack Pressure, P_s (inch water)	A
B.	Barometric Pressure, P_b (inch Hg)	B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m (^oF), $t_{ambient} + 30$	E
F.	Meter $\Delta H@$ (inch water)	F
G.	Meter Correction Factor, δ	G
H.	Assumed Moisture Content (%)	H
I.	Nomograph Correction Factor, C_f	I
J.	High Stack ΔP (inch water)	J
	Average Stack ΔP (inch water)	
	Low Stack ΔP (inch water)	
K.	High Stack Temperature, t_s (^oF)	K
	Average Stack Temperature, t_s (^oF)	
	Low Stack Temperature, t_s (^oF)	
L.	Ideal Probe Tip Diameter, Dn (inch)	L
M.	Actual Probe Tip Diameter, Dn (inch)	M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	N

Cubitainer + H_2O = 443.5
Cubi = 37.1
406.4 g

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

DATE: _____

PLANT: _____ RUN NO.: _____

LOCATION: _____ STACK NO: _____

PREP. BY: _____ SAMPLE BOX NO.: 5

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
6-1	1. 100 ml		567.1	588.5	21.4	
6-2	2. 100 ml		598	603.0	5	
6-3	3. Dry		470.	472.3	2.3	TOTAL
6-4	4. 175 g silica gel		630	644.8	14.8	43.5

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

11ND-C8C-3960/71 (12-78)

TRAVERSE POINTS

CIRCULAR	Dia. 58 in.	Bldg. No. 204	Location HARF FLOOR
RECTANGULAR	Length in / Width in.	Date 2	Run Number SEF 1-1

Equivalent Diameter

$$D_e = \frac{2LW}{L+W} = \text{\_\_\_\_\_ in.}$$

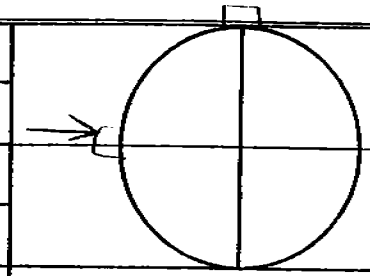
Length from downstream disturbance	2 ft.	Diameter from upstream disturbance	dia.
Diameters from downstream disturbance	dia.	Required number of traverse points	50 ea.
Length from upstream disturbance	2.35 ft.	Number of traverse points used	52 ea.

TRAVERSE POINT LOCATION

Point No.	Ideal Location (in) L	W	Actual Location (in) L	W	Point No.	Ideal Location (in) L	W	Actual Location (in) L	W
1	0.57	1 3/4	1 3/4		26	57.44		57 1/4	
2	1.72	1 3/4	1 3/4		27				
3	2.94		3		28				
4	4.21		4 1/4		29				
5	5.55		5 1/2		30				
6	6.97		7		31				
7	8.46		8 1/2		32				
8	10.04		10 1/8		33				
9	11.94		12		34				
10	13.95		14		35				
11	16.25		16 1/4		36				
12	19.15		19 1/8		37				
13	23.31		23 7/8		38				
14	34.69		34 5/8		39				
15	38.85		38 7/8		40				
16	41.73		41 3/4		41				
17	44.05		44		42				
18	46.06		46		43				
19	47.86		47 1/2		44				
20	49.51		49 1/2		45				
21	51.03		51		46				
22	52.45		52 1/2		47				
23	53.79		53 3/4		48				
24	55.06		55		49				
25	56.25		56 1/4		50				

SOURCE EMISSIONS TESTING DATA SHEET
LIND-CBC-3960/62 (Rev. 11-78)

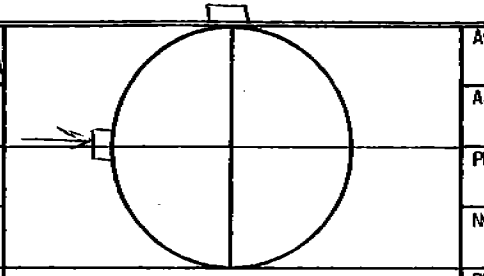
→ NORTH

PLANT: COA	LOCATION: NARF YUMA		AMBIENT TEMPERATURE: 81	BAROMETRIC PRESSURE, IN HG: 29.84
OPERATOR: CARPENTER	DATE: 8 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: OFF
RUN NO.: SEF-1	SAMPLE BOX NO.: 5		PROBE # (PITOT #)	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER ΔH@: 1.8		NOZZLE I.D. NO.	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Pointe)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE(CFM) @ " HG: 0.01 @ 16

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F.	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
	1322											
1	0	511.924	83	0.67	2.8	83	83	AMBIENT	66	5		20.5
2	2	513	85	0.68	2.8	83	83		56	5		
3	4	515	81	0.65	2.7	86	80		56	4½		ANB
DS 4	6	517	80	0.62	2.6	91	82		60	4½		
5	8	519	81	0.60	2.6	95	83		64	4½		
6	10	520.6	81	0.57	2.45	100	84		65	4½		
7	12	522	82	0.54	2.35	104	84		66	4½		
8	14	524	80	0.50	2.2	108	86		66	4		
9	16	526	88	0.48	2.1	111	87		70	4		
10	18	527	90	0.47	2.04	114	89		70	4		
11	20	529	91	0.46	2.0	116	90		68	4		
12	22	530	90	0.46	2.0	117	91		66	4		
TOTAL 13	24	532	88	0.47	2.05	118	92		63	4		
AVERAGE	21	–	TURN PAGE			–	–		–			

→ NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)



PLANT: 604	LOCATION: NAVE PENSACOLA		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: —
OPERATOR: CARPENTER	DATE: 8 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: OFF
RUN NO.: SEF-1	SAMPLE BOX NO.: 5		PROBE # (PITOT #):	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER ΔH@: 1.9		NOZZLE I.D. NO.:	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX; LEAK RATE(CFM) @ " HG: — @ —

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER Inlet (T min) °F.	Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
14	26	534	90	0.43	1.9	121	94	AMBIENT	64	4		
15	28	535	90	0.42	1.85	123	95		64	4		
16	30	537	89	0.42	1.85	124	97		65	4		
17	32	539	84	0.43	1.9	123	99		64	4		
18	34	540	81	0.39	1.75	123	99		63	3 3/4		
19	36	541	82	0.37	1.65	122	101		63	3 3/4		
20	38	543	82	0.34	1.5	122	102		64	3 1/2		
21	40	544	82	0.32	1.4	122	102		65	3 1/2		
22	42	546	82	0.285	1.3	122	103		66	3 1/4		
23	44	547	82	0.27	1.2	122	103		67	3 1/4		
24	46	548	81	0.24	1.1	121	104		67	3		
25	48	550	82	0.23	1.0	120	105		69	3		
TOTAL 26	50	550	83	0.23	1.0	119	105		69	3		
AVERAGE	52	551.180	CHANGE		PORTS		—		—	—		

144

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

→ NORTH

PLANT: ECA	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: —
OPERATOR: CARPENTER	DATE: 8 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: OFF
RUN NO.: SEF -1	SAMPLE BOX NO.: 5		PROBE # (PITOT #):	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER ΔH@: 1.9		NOZZLE I.D. NO.:	NOZZLE DIAMETER, in.: @ 24.5
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ in HG: — @ —

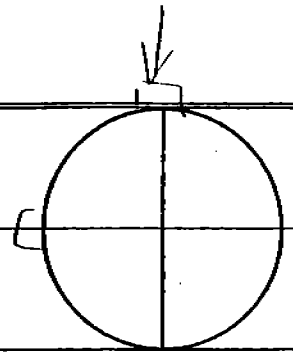
TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T muut) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
1 27	1436 0	551.780	88	0.70	2.95	93	92	AMBIENT	71	4 3/4	AMBIENT	
2 28	2	553	88	0.70	2.95	92	94		65	4 3/4		
3 29	4	556	89	0.75	3.15	96	94		65	5		
4 30	6	557	89	0.78	3.3	101	94		67	5 1/4		
5 31	8	559	89	0.79	3.4	106	94		69	5 1/4		
6 32	10	561	89	0.75	3.25	110	94		68	5 1/4		
7 33	12	563	89	0.10	3.05	112	95		68	4 3/4		
8 34	14	565	89	0.65	2.85	114	95		68	4 3/4		
9 35	16	567	89	0.58	2.55	116	96		69	4 1/4		
10 36	18	569	89	0.53	2.3	116	96		70	4 1/4		
11 37	20	570	89	0.48	2.1	117	97		70	4		
12 38	22	572	90	0.45	1.95	118	97		70	4		
13 TOTAL 39	24	573	89	0.40	1.75	117	98		70	3 3/4		
14 AVERAGE 40	24	575	89	0.44	1.95	118	98		70			

B-7

28

TURN PAGE

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)



PLANT: LOA	LOCATION: NARROWSBURG	AMBIENT TEMPERATURE: 85	BAROMETRIC PRESSURE, IN HG: 29.82
OPERATOR: CARPENTER	DATE: 8 MAY 80	ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: OFF
RUN NO.: SCF-1	SAMPLE BOX NO.: 5	PROBE # (PITOT #):	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER ΔH@: 2.0	NOZZLE I.D. NO.:	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF / PROBE LINER MATERIAL: PYREX / LEAK RATE (CFM) @ in HG: 0.005 @ 17

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
41 (15)	28	576	87	0.47	2.05	117	99	AMBIENT	70	4		
42 (16)	30	578	87	0.5	2.2	118	99		70	4 1/4		
** 43 (17)	32	580	87	0.51	2.25	119	100		71	4 1/4		
** 44 (18)	34	582	87	0.51	2.25	120	101		72	4 1/4		
45 (19)	36	585	86	0.52	2.25	107	97		70	4 1/4		
46 (20)	38	585	86	0.52	2.25	111	101		69	4 1/4		
47 (21)	40	588	86	0.52	2.25	114	102		68	4 1/4		
48 (22)	42	588	86	0.52	2.3	116	99		70	4 1/4		
49 (23)	44	590	86	0.52	2.3	117	99		70	4 1/4		
50 (24)	46	592	85	0.53	2.35	118	99		69	4 1/4		
51 (25)	48	593	85	0.46	2.05	118	99		68	4		
* 52 (26)	50 / 1528	595.0	85	0.47	2.05	119	99		69	4		
TOTAL	52.0	596.526	END OF TEST @ DO NOT READ METER						—	—		
AVERAGE	—	—							—	—		

@ READ METER

* ADJUSTED POINT

** STOPPED FOR ICE

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME _____

DATE 9 MAY 80

LOCATION NARF PENS

RUN NO. SEF 1-2

PLANT GCA

STACK NO. SEF1

SOURCE SEF-1

SAMPLE BOX NO. 2

A.	Stack Pressure, P_s (inch water)		A
B.	Barometric Pressure, P_b (inch Hg)		B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$		C
D.	P_s/P_b		D
E.	Meter Temperature, t_m (^oF), $t_{ambient}$ + 30		E
F.	Meter $\Delta H@$ (inch water)		F
G.	Meter Correction Factor, γ		G
H.	Assumed Moisture Content (%)		H
I.	Nomograph Correction Factor, C_f		I
J.	High Stack ΔP (inch water)		J
	Average Stack ΔP (inch water)		
	Low Stack ΔP (inch water)		
K.	High Stack Temperature, t_s (^oF)		K
	Average Stack Temperature, t_s (^oF)		
	Low Stack Temperature, t_s (^oF)		
L.	Ideal Probe Tip Diameter, Dn (inch)		L
M.	Actual Probe Tip Diameter, Dn (inch)		M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)		N

11ND-CBC-3960/68 (11-78)

385.9
empty cyclone = 37.6
348.3g

PARTICULATE SAMPLE BOX SET UP CHECKLIST

DATE: 9 MAY 80
PLANT: 604
LOCATION: NARF PENSACOLA
PREP. BY: _____

RUN NO.: SEF 1-2
STACK NO: SEF-1
SAMPLE BOX NO.: 2

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
2-1	1. 100 ml	583.9		590.5	7.6	
2-2	2. 100 ml	618.7		622.4	3.7	
2-3	3. Dry	518.9		521.4	2.5	TOTAL
2-4	4. 175 g silica gel	615.8		630.6	14.8	28.6

Filter No	Tare	Final	Net	
				TOTAL

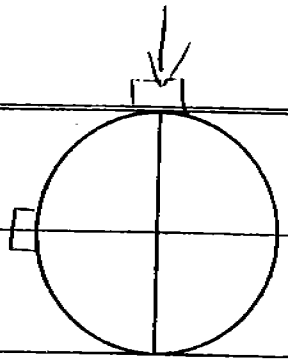
( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

→ NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NAREPENSACOLA	AMBIENT TEMPERATURE: 70	BAROMETRIC PRESSURE, IN HG: 29.88
OPERATOR: CARPENTER	DATE: 9 MAY 80	ASSUMED MOISTURE, %: 2 1/2	HEATER BOX SETTING: OFF
RUN NO.: SEE 1-2	SAMPLE BOX NO.: 2	PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER ΔH@: 2	NOZZLE I.D. NO.: 1/4-4-INC	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): —	PITOT COEFFICIENT, CP: 0.84	PROBE HEATER SETTING: —	PROBE LINER MATERIAL: PYREX
			LEAK RATE (CFM) @ " HG: 0.01 @ 19



SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER Inlet (T min) °F.	Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
* 1	0920 / 0	597.329	75	0.715	2.9	70	69	AMBIENT	65	5	AM	[illegible]
2	2	599	76	0.7	2.85	71	70		45	5		
3	4	601	76	0.715	2.95	77	71		43	5		
4	6	603	77	0.765	3.2	84	71		47	5 1/2		
5	8	605	77	0.775	3.25	89	72		49	6		
6	10	607	78	0.74	3.15	95	73		52	5 1/2		
7	12	608	77	0.69	2.95	100	74		54	5 1/4		
8	14	610	77	0.645	2.8	105	76		55	4 3/4		
9	16	612	78	0.54	2.35	108	77		56	4 1/4		
10	18	614	77	0.49	2.15	110	79		55	4 1/4		
** 11	20	615	77	0.45	1.95	111	80		56	4		
12	22	617	78	0.41	1.7	85	82		65	3 1/2		
~~TOTAL~~ 13	24	619	78	0.4	1.65	86	83		53	3 1/4		
AVERAGE 14	26	620	78	0.45	1.9	91	83		46	3 1/2		
	28											

TURN PAGE

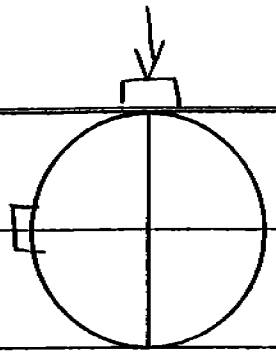
** [illegible]

* ~~AFB~~ ADJUSTED POINTS

D-11

SOURCE EMISSIONS TESTING DATA SHEET
11NO-CBC-3960/62 (Rev. 11-78)

→ NORTH



PLANT: 604	LOCATION: NARF PENSACOLA	AMBIENT TEMPERATURE: 70	BAROMETRIC PRESSURE, IN HG: —
OPERATOR: CARPENTER	DATE: 9 MAY 80	ASSUMED MOISTURE, %: 2½	HEATER BOX SETTING: OFF
RUN NO.: SFF 1-2	SAMPLE BOX NO.: 2	PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER ΔH@: 2	NOZZLE I.D. NO.: ¼-4-INC	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF / PROBE LINER MATERIAL: PYREX / LEAK RATE (CFM) @ " HG: — @ —

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
15	28	621.5	79	0.495	2.1	95	83	AMBIENT	49	4	AMBIENT	
16	30	623	78	0.525	2.45	100	84		49	4¼		
17	32	625	78	0.545	2.35	105	84		50	4¼		
18	34	626	78	0.57	2.5	109	385		50	4¼		
19	36	628	78	0.57	2.5	112	86		51	4¼		
20	38	629.4	79	0.56	2.45	114	87		52	4¼		
21	40	631	79	0.575	2.55	116	88		54	4¼		
22	42	633	79	0.53	2.35	118	89		55	4¼		
23	44	634	81	0.515	2.25	120	91		58	4¼		
24	46	636	81	0.515	2.25	121	91		58	4¼		
25	48	637	79	0.515	2.3	122	92		56	4¼		
* 26	50	639	75	0.50	2.5	124	93		57	4		
TOTAL	52	641.023	CHANGE	PORTS			—		—	—		
AVERAGE	—	—	READ METER									

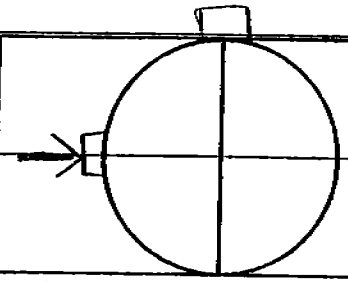
1032

TURN PAGE

* ADJUSTED POINT

→ NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NAAF PENSACOLA		AMBIENT TEMPERATURE: 70	BAROMETRIC PRESSURE, IN HG: —
OPERATOR: CARPENTER	DATE: 13 MAY 80		ASSUMED MOISTURE, %: 2½	HEATER BOX SETTING: OFF
RUN NO.: SCE 1-2	SAMPLE BOX NO.: 2		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER ΔH@: 2		NOZZLE I.D. NO.: ¼-4-INC	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX / LEAK RATE (CFM) @ " HG: — @ —

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM In. Hg.	CO_2 %	O_2 %
	1058											
*27 1	0	641.023	71	0.595	2.55	92	90	AMBIENT	66	4½	AMBIENT	
28 2	2	643	73	0.605	2.6	92	90		54	4½		
29 3	4	644.5	74	0.585	25	95	91		52	4½		
30 4	6	646	74	0.555	2.4	102	91		53	4¼		
31 5	8	648	71	0.54	2.4	108	92		56	4¼		
32 6	10	650	72	0.525	2.3	112	92		58	4		
33 7	12	651	71	0.475	2.1	116	92		57	4		
34 8	14	652.7	70	0.445	2.0	120	93		55	4		
35 9	16	654	70	0.425	1.9	122	94		53	3¾		
36 10	18	656	68	0.41	1.85	123	94		51	3¾		
37 11	20	658	68	0.40	1.8	123	95		50	3½		
38 12	22	659	66	0.41	1.9	124	96		49	3¾		
TOTAL 39 13	24	661	65	0.4	1.8	125	97		48	3¾		
AVERAGE 40 14	26	662	64	0.36	1.7	127	98		47			

28

TURN PAGE

* ADJUSTED POINT

$\gamma = 0.9979$

→ NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: ECA	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 70	BAROMETRIC PRESSURE, IN HG: 29.89	
OPERATOR: CARPENTER	DATE: 15 MAY 80		ASSUMED MOISTURE, %: 2 1/2	HEATER BOX SETTING: OFF	
RUN NO.: SEP 1-2	SAMPLE BOX NO.: 2		PROBE # (PITOT #): S-5	PROBE LENGTH, in.: 60	
METER BOX NO.: 3	METER $\Delta H_@$: 2		NOZZLE I.D. NO.: 1/4-4-INC	NOZZLE DIAMETER, in.: 0.245	
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: 0.01 @ 13

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F.	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
41 15	28	663	64	0.42	1.95	128	99	AMBIENT	48	3 3/4	AMBIENT	
42 16	30	665	63	0.42	1.95	130	100		47	3 3/4		
43 17	32	666.7	66	0.385	1.75	130	101		46	3 1/2		
44 18	34	668	69	0.385	1.75	130	102		45	3 1/2		
45 19	36	670	69	0.35	1.6	131	103		45	3 1/4		
46 20	38	671	70	0.33	1.5	132	104		46	3		
47 21	40	673	71	0.325	1.5	132	104		47	3		
48 22	42	674	69	0.325	1.5	132	105		48	3		
49 23	44	676	70	0.29	1.35	132	106		48	3		
50 24	46	677	72	0.29	1.35	133	107		49	3		
51 25	48	678	71	0.25	1.15	133	107		50	2 1/2		
*52 26	50	679	70	0.25	1.15	133	108		49	2 1/2		
TOTAL	52	680.559	END	OF TEST ✓		READ	METER	✓	LEAK	CHECK		
AVERAGE	1150		✓ READ BAROMETER				✓ PTL					

* ADJUSTED POINTS

FILTER NOs		

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 1358

DATE 9 MAY 80

LOCATION NARF PENSACOLA

RUN NO. SEF-1-3

PLANT 604

STACK NO. SEF-1

SOURCE SEF1

SAMPLE BOX NO. 5

A.	Stack Pressure, P_s (inch water)	-0.3 A
B.	Barometric Pressure, P_b (inch Hg)	B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m (^oF), $t_{ambient}$ + 30	E
F.	Meter $\Delta H@$ (inch water)	F
G.	Meter Correction Factor, γ	G
H.	Assumed Moisture Content (%)	H
I.	Nomograph Correction Factor, C_f	I
J.	High Stack ΔP (inch water)	J
	Average Stack ΔP (inch water)	
	Low Stack ΔP (inch water)	
K.	High Stack Temperature, t_s (^oF)	K
	Average Stack Temperature, t_s (^oF)	
	Low Stack Temperature, t_s (^oF)	
L.	Ideal Probe Tip Diameter, Dn (inch)	L
M.	Actual Probe Tip Diameter, Dn (inch)	M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	N

340.1
empty = 36.4

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

DATE: 9 MAY 80
PLANT: 604
LOCATION: CARF PENSA
PREP. BY: _____

RUN NO.: SEF 1-3
STACK NO: SEF 1
SAMPLE BOX NO.: 5

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
1-1	1. 100 ml		628.5	635.9	7.4	
1-2	2. 100 ml		606.6	611.8	5.2	
1-3	3. Dry		480.5	484.8	4.3	TOTAL
1-4	4. 175 g silica gel		681.3	697.2	15.9	32.8

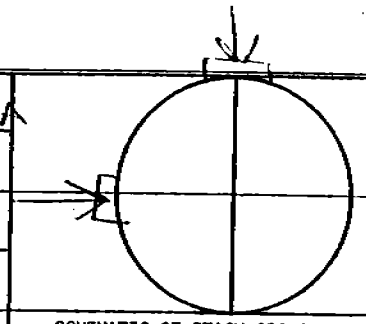
Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

11ND-CBC-3960/47 (REV. 11-78)

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: DARE PENNACOLA		AMBIENT TEMPERATURE: 83	BAROMETRIC PRESSURE, IN HG: 29.88
OPERATOR: CARPENTER	DATE: 9 MAY 80		ASSUMED MOISTURE, %: 1.7	HEATER BOX SETTING: OFF
RUN NO.: SEF-1-3	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 6.0
METER BOX NO.: 3	METER $\Delta H_@$: 2		NOZZLE I.D. NO.: 1/4 - 4	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: 0.008 @ 18

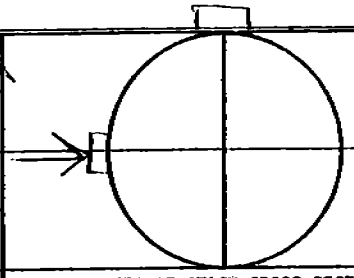
TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
1	0 (1357)	681.453	79	0.645	2.7	83	83	79	63	4 1/4	ANALYZE	
2	2	683	78	0.64	2.7	86	83	AMBIENT	60	4 1/4		
3	4	685	78	0.625	2.7	92	84		58	4 1/4		
4	6	687	78	0.6	2.6	97	84		58	4 1/4		
5	8	689	78	0.575	2.5	101	84		60	4 1/4		
6	10	690	79	0.54	2.35	107	85		63	4		
7	12	692	79	0.52	2.3	111	86		62	4		
8	14	693	77	0.48	2.15	113	87		58	4		
9	16	695	77	0.45	2.0	116	88		57	4		
10	18	697	76	0.44	2.0	117	89		56	4		
11	20	698	76	0.445	2.0	118	90		56	4		
12	22	699.7	77	0.455	2.05	120	91		54	4		
13 TOTAL	24	701	78	0.45	2.05	122	91		54	4		
14 AVERAGE	26	703	80	0.44	2.0	124	94		61	4		

28

TURN PAGE

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NAFF PENSACOLA		AMBIENT TEMPERATURE: 85	BAROMETRIC PRESSURE, IN HG: —	
OPERATOR: CARPENTER	DATE: 9 MAY 90		ASSUMED MOISTURE, %: 1.7	HEATER BOX SETTING: EFF	
RUN NO.: SEE 1-3	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 6X	
METER BOX NO.: 3	METER $\Delta H_@$: 2		NOZZLE I.D. NO.: 1/4-4-INC	NOZZLE DIAMETER, in.: 0.245	
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, C_P: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE(CFM) @ — " HG: — @ —



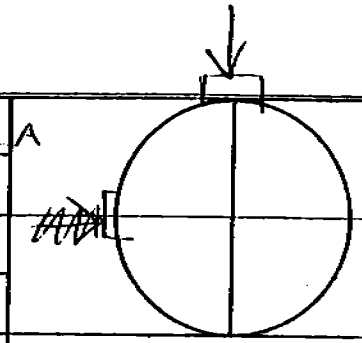
TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
15	28	704.5	80	0.40	1.8	125	96	AMBIENT	63	3 3/4	AMB	CUT
16	30	706.3	79	0.40	1.8	125	96		62	4		
17	32	708	80	0.41	1.85	126	97		63	4		
18	34	709	82	0.40	1.8	128	98		60	4		
19	36	711	78	0.40	1.85	129	99		59	4		
20	38	713	76	0.37	1.7	130	101		59	4		
21	40	714	75	0.34	1.55	131	102		58	4		
22	42	715	73	0.32	1.5	130	103		58	3 1/2		
23	44	716.7	74	0.315	1.45	131	104		60	3 1/2		
24	46	718	72	0.30	1.4	130	105		58	3 1/2		
25	48	719.2	72	0.29	1.35	130	106		59	3 1/2		
*26	50	720.8	72	0.26	1.2	130	106		59	3 1/4		
TOTAL	52	721.92	—	—	—	—	—		—			
AVERAGE	1449											

CHANGE PORTS

* ADJUSTED POINTS

* ADJUSTED POINTS

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)



PLANT: 604	LOCATION: NAPF PENSACOLA		AMBIENT TEMPERATURE: 85	BAROMETRIC PRESSURE, IN HG: —
OPERATOR: CARPENTER	DATE: 9 MAY 80		ASSUMED MOISTURE, %: 1.7	HEATER BOX SETTING: OFF
RUN NO.: SEF 1-3	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 6.0
METER BOX NO.: 5	METER ΔH@: 2		NOZZLE I.D. NO.: 1/4-4-INK	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX

LEAK RATE (CFM) @ — IN HG: —

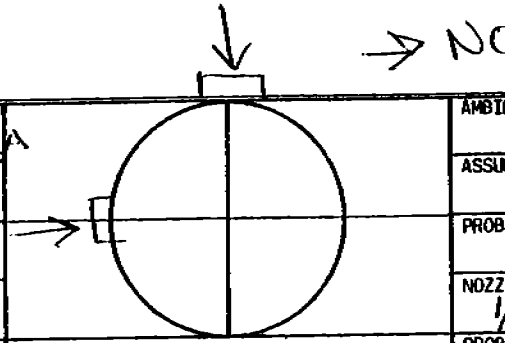
TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
1 *27	0 (15:12)	721.922	85	0.75	3.2 ~~3.7~~	97	96	AMBIENT	70	5	AMBIENT	
2 28	2	724	85	0.77	3.3	99	97		68	5		
3 29	4	726	86	0.78	3.4	105	98		64	5 1/4		
4 30	6	728	87	0.79	3.45	111	98		65	5 1/4		
5 31	8	730	86	0.79	3.5	118	97		65	5 1/2		
6 32	10	732	87	0.75	3.35	123	98		67	5		
7 33	12	734	88	0.67	3.0	124	98		70	4 3/4		
8 34	14	736	88	0.61	2.75	127	99		67	4 1/2		
9 35	16	738	88	0.54	2.4	129	99		65	4 1/4		
10 36	18	739	89	0.49	2.2	132	101		67	3 3/4		
11 37	20	741	90	0.44	2.0	131	102		69	3 3/4		
12 38	22	742	90	0.40	1.8	129	103		69	3 3/4		
13 39 TOTAL	24	744	89	0.39	1.75	128	104		67	3 3/4		
14 40 AVERAGE	26	746	89	0.45	2.0	127	104		67	3 3/4		

28

TURN PAGE

* ADJUSTED POINTS

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)



PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 85	BAROMETRIC PRESSURE, IN HG: 29.85
OPERATOR: CARPENTER	DATE: 9 MAY 80		ASSUMED MOISTURE, %: 17	HEATER BOX SETTING: OFF
RUN NO.: SEF 1-3	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER ΔH@: 2		NOZZLE I.D. NO.: 1/4-4-INC	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ in HG: 0.005 @ 13

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
41 (15)	28	747	88	0.50	2.25	126	104	AMBIENT	67	4 1/4	AMBIENT	
42 (16)	30	749	87	0.53	2.35	126	103		69	4 1/4		
43 (17)	32	751	88	0.55	2.45	127	102		70	4 1/4		
*44 (18)	34	752	87	0.55	2.5	129	103		67	4 1/4		
45 (19)	36	754	85	0.565	2.55	131	103		64	4 1/4		
46 (20)	38	756	84	0.56	2.55	132	104		63	4 1/4		
47 (21)	40	757.6	83	0.54	2.45	135	104		62	4 1/4		
48 (22)	42	759	84	0.53	2.45	136	106		64	4 1/4		
49 (23)	44	760.6	85	0.535	2.45	135	107		65	4 1/4		
50 (24)	46	762.4	86	0.51	2.35	136	109		65	4 1/4		
51 (25)	48	764	86	0.43	1.95	137	109		64	4		
*52 (26)	50	765.8	86	0.43	1.95	137	110		64	4		
TOTAL	52	161.315	END OF TEST o			READ METER			—	—	—	—
AVERAGE	1604	—	o LEAK CHECK o			READ BAROMETER AT			—	—	—	—

o READ CLOCK

* ADJUSTED POINTS

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 1320

DATE 8 MAY 80

LOCATION NARF PENSACOLA

PLANT 604

SOURCE

RUN NO. SEF 2-1

STACK NO. SEF 2

SAMPLE BOX NO. 1

A.	Stack Pressure, P_s (inch water)	A
B.	Barometric Pressure, P_b (inch Hg)	-.13 B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m (^oF), $t_{ambient}$ + 30	E
F.	Meter $\Delta H@$ (inch water)	F
G.	Meter Correction Factor, γ	G
H.	Assumed Moisture Content (%)	H
I.	Nomograph Correction Factor, C_f	I
J.	High Stack ΔP (inch water)	J
	Average Stack ΔP (inch water)	
	Low Stack ΔP (inch water)	
K.	High Stack Temperature, t_s (^oF)	K
	Average Stack Temperature, t_s (^oF)	
	Low Stack Temperature, t_s (^oF)	
L.	Ideal Probe Tip Diameter, Dn (inch)	L
M.	Actual Probe Tip Diameter, Dn (inch)	M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	N

385.3
35.9
349.4

Cubitainer empty 35.9 + H_2O = 385.3 g

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

DATE: 3 MAY 80
PLANT: 604
LOCATION: NARF PENSACOLA
PREP. BY: YEE

RUN NO.: SEF 2-1
STACK NO: SEF 2
SAMPLE BOX NO.: 1

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
1-1	1. 100 ml	647.7		661.2	13.5	
1-2	2. 100 ml	589.1		588.1	-1.0	
1-3	3. Dry	500.9		503.6	2.7	TOTAL
1-4	4. 175 g silica gel	644.2		658.7	14.5	29.7

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

11ND-CBC-3960/47 (REV. 11-78)

1IND-CBC-3960/71 (12-78)

TRAVERSE POINTS

* CIRCULAR	Dia. 41 in.	Bldg. No. 6C4	Location NARF PENSACOLA
RECTANGULAR	Length in | Width in.	Date 3MAY 80	Run Number 1

Equivalent Diameter

$D_e = \frac{2LW}{L+W}$ = in.

Length from downstream disturbance	5.92 ft.	Diameter from upstream disturbance	dia.
Diameters from downstream disturbance	dia.	Required number of traverse points	46 ea.
Length from upstream disturbance	2.42 ft.	Number of traverse points used	48 ea.

TRAVERSE POINT LOCATION

Point No.	Ideal Location (in) L	W	Actual Location (in) L	W	Point No.	Ideal Location (in) L	W	Actual Location (in) L	W
* 1	.43		1/2		26				
2	1.49		1 1/2		27				
3	2.54		2 1/2		28				
4	3.64		3 5/8		29				
5	4.82		4 7/8		30				
6	6.07		6		31				
7	7.43		7 3/8		32				
8	8.92		8 7/8		33				
9	10.58		10 1/2		34				
10	12.5		12 1/2		35				
11	14.87		14 7/8		36				
12	18.31		18 1/4		37				
13	27.69		27 3/4		38				
14	31.13		31 1/8		39				
15	33.5		33 1/2		40				
16	35.42		35 3/8		41				
17	37.08		37		42				
18	38.57		38 1/2		43				
19	39.93		39 7/8		44				
20	41.13		41 1/8		45				
21	42.36		42 3/8		46				
22	43.46		43 1/2		47				
23	44.51		44 1/2		48				
24	45.57		45 1/2		49				
25					50				

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

→ NORTH

PLANT: 604	LOCATION: NAVF PENSACOLA		AMBIENT TEMPERATURE: 86	BAROMETRIC PRESSURE, IN HG: 29.89	
OPERATOR: HICKENBOTTOM	DATE: 2 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —	
RUN NO.: SEF 2-1	SAMPLE BOX NO.: 1		PROBE # (PITOT #)	PROBE LENGTH, in.: 60	
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.	NOZZLE DIAMETER, in.: .245	
C FACTOR (Nonograph)	PITOT COEFFICIENT, Cp: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: .000 @ 16

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
* 1	0	810.3	80	.39	1.59	87	87	AMBIENT	73	1		
2	2	811	95	.39	1.54	93	87		72	1		
3	4	813.1	78	.38	1.58	99	88		70	1		
4	6	814	76	.37	1.54	99	88		70	1		
5	8	815.9	78	.35	1.47	103	88		70	1		
6	10	817.3	81	.34	1.43	108	90		73	1		
7	12	818.67	83	.34	1.44	112	91		75	1		
8	14	819.98	85	.34	1.44	116	91		75	1		
9	16	821.4	85	.33	1.41	120	93		74	1		
10	18	822.68	84	.32	1.29	123	94		67	1		
11	20	824.0	85	.30	1.29	126	95		66	1		
12	24	825.35	88	.28	1.21	128	97		67	1		
TOTAL												
AVERAGE												

D-24

* ADJUSTED

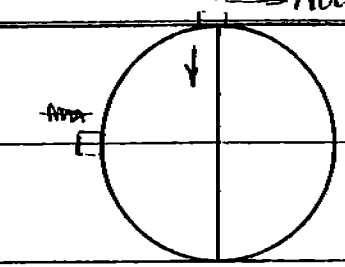
SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NARF		AMBIENT TEMPERATURE: 86	BAROMETRIC PRESSURE, IN HG: 29.84
OPERATOR:	DATE: 8 NOV 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING:
RUN NO.: SEF 2-1	SAMPLE BOX NO.: 1		PROBE # (PITOT #):	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.:	NOZZLE DIAMETER, in.: .245
C FACTOR (Nomograph):	PITOT COEFFICIENT, CP: .34	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING:	PROBE LINER MATERIAL: PYREX
				LEAK RATE (CFM) @ " HG:

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER Inlet (T min) °F	Outlet (T mout) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
13	24	826.75	88	.26	1.12	128	98	AMBIENT	67	1		
14	26	827.93	88	.27	1.16	129	101		68	1		
15	28	829.2	83	.28	1.21	127	102		65	1		
16	30	830.5	80	.29	1.26	125	102		62	1		
17	32	831.8	80	.31	1.35	124	102		62	1		
18	34	833.17	82	.31	1.34	125	103		64	1		
19	36	834.52	83	.31	1.34	127	103		66	1		
20	38	835.96	85	.31	1.34	121	104		67	1		
21	40	837	85	.28	1.21	129	104		69	1		
22	42	838.5	85	.25	1.08	129	105		69	1		
23	44	839.8	85	.18	.78	127	106		70	1		
*24	46	840.9	84	.18	.77	123	106		69	1		
TOTAL	48	841.92										
AVERAGE	1408											

*ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11IND-CBC-3960/62 (Rev. 11-78)

PLANT: 609	LOCATION: NAPF FINISHING		AMBIENT TEMPERATURE: 86	BAROMETRIC PRESSURE, IN HG: 29.81
OPERATOR: HICKENBOTTOM	DATE: 8 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING:
RUN NO.: SEP 2 - 1	SAMPLE BOX NO.: 1		PROBE # (PITOT #):	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.:	NOZZLE DIAMETER, in.: .245
C FACTOR (Nomograph):	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING:	PROBE LINER MATERIAL: PYREX
				LEAK RATE (CFM) @ " HG: @

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
★ 25	4.8	841.92	84	.33	1.35	95	95	AMBIENT	66	1		
26	50	843.17	84	.33	1.35	95	97		65	1		
27	52	844.5	84	.32	1.32	99	97		60	1		
28	54	845.9	84	.31	1.29	105	97		64	1		
29	56	847.2	85	.29	1.21	108	96		66	1		
30	58	848.48	85	.29	1.22	112	96		68	1		
31	60	849.77	85	.27	1.14	114	96		68	1		
32	62	851.1	85	.26	1.1	115	96		69	1		
33	64	852.38	85	.26	1.1	115	96		66	1		
34	66	853.7	83	.25	1.06	115	97		65	1		
35	68	854.83	82	.26	1.11	115	97		64	1		
36	70	856.3	80	.26	1.11	114	96		65	1		
TOTAL												
AVERAGE												

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT 604	LOCATION NARF Pensacola		AMBIENT TEMPERATURE 86	BAROMETRIC PRESSURE, IN HG 29.82
OPERATOR HICKENBOTTOM	DATE 8 MAY 80		ASSUMED MOISTURE, % 2	HEATER BOX SETTING
RUN NO. SEF 2-1	SAMPLE BOX NO. 1		PROBE # (PITOT #)	PROBE LENGTH, in. 60
METER BOX NO. 4	METER ΔH@ 1.4314		NOZZLE I.D. NO.	NOZZLE DIAMETER, in. .245
C FACTOR (Nomograph)	PITOT COEFFICIENT, CP .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING	PROBE LINER MATERIAL Pyrex / LEAK RATE (CFM) @ " HG .008 @ 20

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER Inlet (T min) °F.	Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
37	72	857.45	79	.28	1.20	114	96	AMBIENT	64	1		
38	74	858.6	78	.28	1.20	113	97		64	1		
39	76	859.9	78	.31	1.33	114	96		64	1		
40	78	861.29	77	.34	1.46	114	97		64	1		
41	80	862.6	76	.37	1.6	114	96		63	1		
42	82	864.1	76	.39	1.68	114	96		63	1		
43	84	865.65	76	.41	1.76	115	96		65	1		
44	86	867.17	76	.45	1.94	117	97		67	1		
45	88	868.7	77	.45	1.94	118	97		69	1		
46	90	870.4	78	.47	2.03	119	97		68	1		
47	92	872.	78	.44	1.90	119	97		69	1		
★ 48	94	873.5	78	.41	1.77	119	98		68	1		
TOTAL	96	875.105										
AVERAGE	1016											

★ ADJUSTED

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 1000

DATE 9 MAY 80

LOCATION NARF PENSACOLA

RUN NO. SEF 2 - 2

PLANT 6C4

STACK NO. SEF 2

SOURCE

SAMPLE BOX NO. 6

A.	Stack Pressure, P_s (inch water)	-.18	A
B.	Barometric Pressure, P_b (inch Hg)	24.58	B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$		C
D.	P_s/P_b		D
E.	Meter Temperature, t_m (^oF), $t_{ambient}$ + 30		E
F.	Meter $\Delta H@$ (inch water) Y=1.0000	1.9314	F
G.	Meter Correction Factor, δ		G
H.	Assumed Moisture Content (%)	2	H
I.	Nomograph Correction Factor, C_f		I
J.	High Stack ΔP (inch water)		J
	Average Stack ΔP (inch water)	.32	
	Low Stack ΔP (inch water)		
K.	High Stack Temperature, t_s (^oF)		K
	Average Stack Temperature, t_s (^oF)	92	
	Low Stack Temperature, t_s (^oF)		
L.	Ideal Probe Tip Diameter, Dn (inch)	.271	L
M.	Actual Probe Tip Diameter, Dn (inch)	.343	M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)		N

empty 360.9 36.6 324.3

PARTICULATE SAMPLE BOX SET UP CHECKLIST

DATE: 9 MAY 80

PLANT: 4C4

LOCATION: NARF PENSACOLA

PREP. BY: YEE

RUN NO.: SEF 2-2

STACK NO: SEF 2

SAMPLE BOX NO.: 6

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

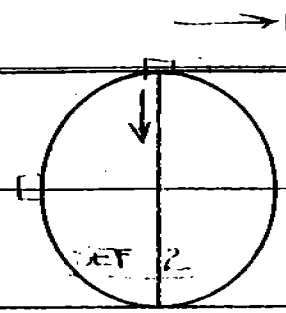
Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
2-1	1. 100 ml		612.7	604.2	-8.5	
	2. 100 ml	505.2	~~601.8~~ 605.6	611.4	5.8	
1-1	3. Dry		489.2	490.7	1.5	TOTAL
	4. 175 g silica gel		645.4	656.0	10.6	9.4

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

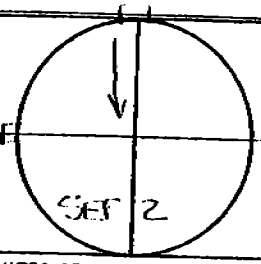
PLANT: 604	LOCATION: NARF Pensacola		AMBIENT TEMPERATURE: 75	BAROMETRIC PRESSURE, IN HG: 29.88
OPERATOR: HICKENBOTTOM	DATE: 9 MAY 80		ASSUMED MOISTURE, %: 5-6	HEATER BOX SETTING:
RUN NO.: SEF 2-2	SAMPLE BOX NO.: 6		PROBE # (PITOT #): 2	PROBE LENGTH, in.: 6.0
METER BOX NO.: 4	METER ΔH@: 1.9319		NOZZLE I.D. NO.:	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph):	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING:	PROBE LINER MATERIAL: PYREX; LEAK RATE (CFM) @ " HG: .005 @ 18

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER Inlet (T min) °F.	Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
* 1	0	876.7	75	.38	1.59	71	71	AMBIENT	70	2		
2	2	(-) 877.25 865.36	78	.38	1.59	74	75		56	2		
3	4	887.45	79	.40	1.71	86	76		56	2		
4	6	888.72	78	.39	1.68	91	76		51	2		
5	8	890.17	79	.37	1.61	96	77		52	2		
6	10	891.57	81	.35	1.53	101	78		54	2		
7	12	892.95	81	.35	1.54	105	79		56	2		
8	14	894.3	81	.32	1.42	108	79		55	2		
9	16	895.61	81	.31	1.38	111	80		55	2		
10	18	897.0	82	.31	1.38	113	81		56	2		
11	20	898.3	83	.30	1.34	115	83		57	2		
12	22	899.6	84	.30	1.34	117	84		58	2		
TOTAL												
AVERAGE												

* ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
IIND-CBC-3960/62 (Rev. 11-78)

NORTH

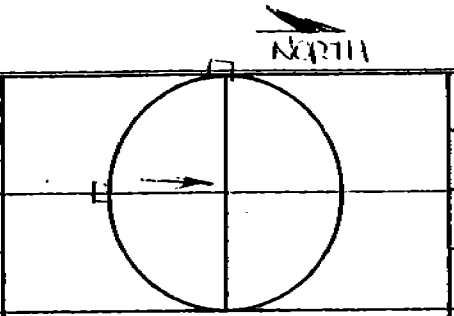
PLANT: 604	LOCATION: NAVY PENSACOLA		AMBIENT TEMPERATURE: 80
OPERATOR: HICKENBOTTOM	DATE: 9MAY80		ASSUMED MOISTURE, %: 2
RUN NO.: SEF 2-2	SAMPLE BOX NO.: 6		PROBE # (PITOT #): 2
METER BOX NO.: 9	METER ΔH@: 1.4314		NOZZLE I.D. NO.
C FACTOR (Nomograph)	PITOT COEFFICIENT, Cp: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING

BAROMETRIC PRESSURE, IN HG	HEATER BOX SETTING	PROBE LENGTH, in.	NOZZLE DIAMETER, in.	PROBE LINER MATERIAL	LEAK RATE (CFM) @ " HG
29.53		6.0	.248	PYREX	@

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
13	24	900.43	85	0.30	1.34	118	85	AMBIENT	60	2		
14	26	902.25	86	.33	1.48	120	87		61	2		
15	28	903.62	86	.36	1.61	121	88		61	2		
16	30	905.05	86	.38	1.71	123	89		63	2		
17	32	906.52	85	.42	1.90	124	90		63	2		
18	34	908.08	86	.44	1.99	126	91		67	2		
19	36	909.70	87	.44	2.00	129	93		70	2		
20	38	911.41	87	.44	2.00	130	94		67	2		
21	40	912.91	81	.41	1.87	130	95		67	2		
22	42	914.5	86	.41	1.88	133	96		67	2		
23	44	916.06	85	.20	.92	133	97		66	2		
* 24	46	917.3	85	.19	.87	133	98		61	2		
TOTAL	48	918.37										
AVERAGE	1:31											

* ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 6094	LOCATION: NAAS PENSACOLA		AMBIENT TEMPERATURE: 75	BAROMETRIC PRESSURE, IN HG: 29.88	
OPERATOR: INCINERATION	DATE: 9 MAY 88		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —	
RUN NO.: SEF 2 - 2	SAMPLE BOX NO.: 6		PROBE # (PITOT #):	PROBE LENGTH, in.: 60	
METER BOX NO.: 4	METER ΔH@: 1.939		NOZZLE I.D. NO.:	NOZZLE DIAMETER, in.: .248	
C FACTOR (Nomograph):	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING:	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: @

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
25	0 / 1108	918.37	77	.38	1.70	109	99	AMBIENT	59	2	AMBIENT	
26	2	920	78	.38	1.71	113	99		58	2		
27	4	921.31	77	.38	1.72	116	99		59	2		
28	6	923	77	.37	1.68	119	99		61	2		
29	8	924.31	77	.35	1.6	123	100		64	2		
30	10	925.15	78	.34	1.56	126	101		64	2		
31	12	927.11	76	.32	1.48	128	101		65	2		
32	14	928.51	77	.32	1.48	129	102		67	2		
33	16	929.93	80	.32	1.48	131	102		68	2		
34	18	931.30	77	.31	1.44	131	103		65	2		
35	20	932.7	77	.30	1.39	132	103		63	2		
36	22 / 1130	934.63	74	.30	1.39	133	104		63	2		
TOTAL												
AVERAGE												

* ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 75	BAROMETRIC PRESSURE, IN HG: 29.89
OPERATOR: HICKENBOTTOM	DATE: 9MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: SEF2-2	SAMPLE BOX NO.: 6		PROBE # (PITOT #): 2	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH: 1.9314		NOZZLE I.D. NO.:	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph):	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Pointe)	PROBE HEATER SETTING:	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ in HG: .000 @ 14

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
37	24	935.37	80	.27	1.25	134	104	AMBIENT	66	2	AMBIENT	
38	26	936.7	85	.28	1.29	134	105		69	2		
39	28	938.0	86	.27	1.24	134	106		70	2		
40	30	939.3	87	.26	1.19	135	106		70	2		
41	32	940.57	89	.26	1.19	136	107		70	2		
42	34	941.85	89	.25	1.14	136	107		70	2		
43	36	943.12	88	.26	1.19	136	108		70	2		
44	38	944.31	86	.26	1.20	136	108		70	2		
45	40	945.61	87	.26	1.20	137	109		69	2		
46	42	946.96	87	.18	.83	137	109		69	2		
47	44	948.06	86	.10	.46	137	109		70	2		
*48	46	948.9	85	.10	.46	136	110	↓	70	2		
TOTAL	48/96	944.70										
AVERAGE	1156											

(-8.11) - Point 2

* ADDED

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 1300

DATE 9 MAY 80

LOCATION NARF PENSACOLA

RUN NO. SEF 2-3

PLANT 1C04

STACK NO. SEF 2

SOURCE _____

SAMPLE BOX NO. 1

A.	Stack Pressure, P_s (inch water)	-.13 A
B.	Barometric Pressure, P_b (inch Hg)	B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m (^oF), $t_{ambient}$ + 30	E
F.	Meter $\Delta H@$ (inch water)	1.9314 F
G.	Meter Correction Factor, δ	1.0001 G
H.	Assumed Moisture Content (%)	H
I.	Nomograph Correction Factor, C_f	I
J.	High Stack ΔP (inch water)	J
	Average Stack ΔP (inch water)	
	Low Stack ΔP (inch water)	
K.	High Stack Temperature, t_s (^oF)	K
	Average Stack Temperature, t_s (^oF)	
	Low Stack Temperature, t_s (^oF)	
L.	Ideal Probe Tip Diameter, Dn (inch)	L
M.	Actual Probe Tip Diameter, Dn (inch)	.248 M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	N

Empty Cubic = 360

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

DATE: 9 MAY 90
PLANT: 4C4
LOCATION: NAS PENSACOLA
PREP. BY: YEE

RUN NO.: SEF 2 - 3
STACK NO: SEF 2
SAMPLE BOX NO.: 1

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
6-1	1. 100 ml		566.8	567.2	0.4	
6-2	2. 100 ml		595.0	599.1	4.1	
6-3	3. Dry		493.5	498.5	5.0	TOTAL
6-4	4. 175 g silica gel		676.5	689.8	13.3	22.8

Filter No	Tare	Final	Net	
				TOTAL

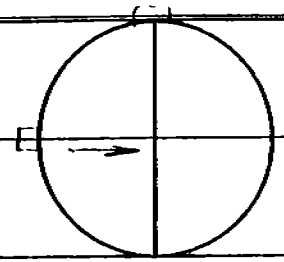
( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604	LOCATION: NARF PENSACOLA	AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.88
OPERATOR: HICKENBOTTOM	DATE: 9 MAY 80	ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: SEF 2-3	SAMPLE BOX NO.: 1	PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314	NOZZLE I.D. NO.:	NOZZLE DIAMETER, in.: 24.8
C FACTOR (Nomograph):	PITOT COEFFICIENT, CP: .84	PROBE HEATER SETTING:	PROBE LINER MATERIAL: PYREX
			LEAK RATE (CFM) @ " HG: 0.15 @ 15



SCHEMATIC OF STACK CROSS SECTION
(Show Traverse Points)

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER Inlet (T min) °F.	Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
★ 1	0 / 1300	950.0	76	.35	1.51	89	89	AMBIENT	70	2		
2	2	951.35	77	.35	1.52	92	89		70	2		
3	4	952.75	78	.34	1.49	98	89		65	2		
4	6	954.12	78	.33	1.45	103	89		57	2		
5	8	955.47	77	.33	1.47	107	89		55	2		
6	10	956.83	78	.33	1.48	112	90		54	2		
7	12	958.19	79	.33	1.49	116	91		54	2		
8	14	959.51	79	.32	1.45	119	91		54	2		
9	16	960.93	79	.31	1.41	121	93		51	2		
10	18	962.27	78	.31	1.42	124	94		52	2		
11	20	963.62	80	.28	1.28	126	95		55	2		
12	22	964.95	81	.27	1.29	128	96		58	2		
TOTAL												
AVERAGE												

★ ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

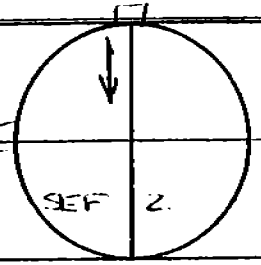
PLANT: 604	LOCATION: NAVY PENSACOLA		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.83
OPERATOR: HICKENBOTTOM	DATE: 9 MAY 80		ASSUMED MOISTURE, %: 7	HEATER BOX SETTING: —
RUN NO.: SEF 2-3	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.:	NOZZLE DIAMETER, in.: .246
C FACTOR (Nomograph):	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING:	PROBE LINER MATERIAL: PYREX	LEAK RATE(CFM) @ " HG: @

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
13	24	966.25	82	.27	1.24	130	97	AMBIENT	61	2		
14	26	967.6	84	.26	1.19	132	98		57	2		
15	28	968.9	82	.25	1.15	133	100		56	2		
16	30	970.2	81	.25	1.15	134	101		55	2		
17	32	971.43	80	.29	1.34	134	102		55	2		
18	34	972.78	78	.29	1.35	134	103		54	2		
19	36	974.11	79	.32	1.49	136	104		54	2		
20	38	975.5	79	.32	1.49	136	104		56	2		
21	40	976.98	81	.33	1.54	138	106		59	2		
22	42	978.3	83	.33	1.54	139	107		63	2		
23	44	979.76	84	.30	1.39	140	108		66	2		
*24	46	981.09	84	.29	1.35	141	109		65	2		
TOTAL	48											
AVERAGE	1348											

* ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: KCH	LOCATION: NAVY PENSACOLA		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 30.34
OPERATOR	DATE: 9 MAY 80		ASSUMED MOISTURE, %: 7	HEATER BOX SETTING
RUN NO.: SEF 2-3	SAMPLE BOX NO.: 1		PROBE # (PITOT #): S-6	PROBE LENGTH, in.: 6.0
METER BOX NO.: 4	METER ΔH@: 1.934		NOZZLE I.D. NO.	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph)	PITOT COEFFICIENT, Cp: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING	PROBE LINER MATERIAL: PYREX / LEAK RATE (CFM) @ " HG: @

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
* 25	0 (1410)	982.46	94	.32	1.41	118	111	AMBIENT	70	2		
26	2	984.0	98	.33	1.45	120	111		70	2		
27	4	985.2	98	.33	1.45	123	110		70	2		
28	6	986.57	98	.32	1.34	126	110		68	2		
29	8	987.9	97	.29	1.23	128	110		68	2		
30	10	989.24	97	.27	1.21	130	110		69	2		
31	12	990.53	97	.25	1.18	131	110		70	2		
32	14	991.81	96	.23	1.03	133	110		68	2		
33	16	993.1	96	.23	1.04	135	110		69	2		
34	18	994.25	98	.24	1.08	136	111		70	2		
35	20	995.56	99	.25	1.13	137	111		73	2		
36	22 (1432)	996.96	99	.26	1.17	138	112		73	2		
TOTAL												
AVERAGE												

ADDENDUM

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NSWC III

PLANT 604	LOCATION NARF Pensacola		AMBIENT TEMPERATURE 80	BAROMETRIC PRESSURE, IN HG 29.85	
OPERATOR HICKENBOTTOM	DATE 9 MAY 80		ASSUMED MOISTURE, % 2	HEATER BOX SETTING —	
RUN NO. SEF 2-3	SAMPLE BOX NO. 6		PROBE # (PITOT #) 5 6	PROBE LENGTH, in. 60	
METER BOX NO. 4	METER ΔH@ 1.9314		NOZZLE I.D. NO.	NOZZLE DIAMETER, in. .248	
C FACTOR (Nomograph)	PITOT COEFFICIENT, CP .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING	PROBE LINER MATERIAL PYREX	LEAK RATE (CFM) @ " HG .015 @ 4

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
37	34	998.05	98	.28	1.26	138	113	AMBIENT	73	2		
38	26	999.4	97	.29	1.31	138	113		73	2		
39	28 (12)	1000.78	94	.35	1.59	139	113		70	2		
40	30 (18)	1002.2	95	.38	1.73	140	113		70	2		
41	32 (26)	1003.73	94	.39	1.78	141	114		70	2		
42	34 (22)	1005.28	94	.42	1.92	142	114		69	2		
43	36 (24)	1006.87	93	.43	1.97	143	114		68	2		
44	38 (12)	1008.58	93	.46	2.12	145	115		70	2		
45	40 (28)	1010.19	94	.47	2.16	145	115		70	2		
46	42 (32)	1011.89	96	.47	2.16	147	116		73	2		
47	44 (32)	1013.6	97	.42	1.76	149	116		73	3		
★ 48	46 (34)	1015.18	97	.41	1.89	150	117	↓	73	3		
TOTAL	48/1PB	1016.75										
AVERAGE	1448											

★ ADJUSTED

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 0900

DATE 12 MAY 80

LOCATION NARF PENSACOLA

RUN NO. SEF 3-#4

PLANT NARF - 604

STACK NO. SEF 3

SOURCE _____

SAMPLE BOX NO. 6

A.	Stack Pressure, P_s (inch water) →	.29 A
B.	Barometric Pressure, P_b (inch Hg) →	30.00 B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m (^oF), $t_{ambient}$ + 30	E
F.	Meter $\Delta H@$ (inch water)	1.9314 F
G.	Meter Correction Factor, γ	1.0001 G
H.	Assumed Moisture Content (%)	2 H
I.	Nomograph Correction Factor, C_f →	I
J.	High Stack ΔP (inch water)	J
	Average Stack ΔP (inch water)	
	Low Stack ΔP (inch water)	
K.	High Stack Temperature, t_s (^oF)	K
	Average Stack Temperature, t_s (^oF)	
	Low Stack Temperature, t_s (^oF)	
L.	Ideal Probe Tip Diameter, Dn (inch)	230 L
M.	Actual Probe Tip Diameter, Dn (inch) →	.248 M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	N

409.2 CO2 + SO2
36.8 MT Calibration
372.4 grams.

PARTICULATE SAMPLE BOX SET UP CHECKLIST

DATE: 12 MAY 82

PLANT: CC4

LOCATION: NARF PENSACOLA

PREP. BY: YEE

RUN NO.: SEF 3 -4

STACK NO: SEF 3

SAMPLE BOX NO.: 6

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
2-1	1. 100 ml		623.6	641.6		
2-2	2. 100 ml		577.5	585.2		
2-3	3. Dry		518.7	522.7		TOTAL
2-4	4. 175 g silica gel		665.5	685.2		

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

11NAVFAC-3960/71 (12-78)

TRAVERSE POINTS

CIRCULAR	Dia. 52 in.	Bldg. No. 6C4	Location NARF PENSACOLA
RECTANGULAR	Length in / Width in.	Date 12 MAY 82	Run Number SEF 3-4

Equivalent Diameter

$D_e = \frac{2LW}{L+W}$ = _____ in.

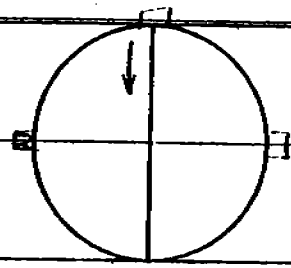
Length from downstream disturbance	8.17 ft.	Diameter from upstream disturbance	dia.
Diameters from downstream disturbance	dia.	Required number of traverse points	ea.
Length from upstream disturbance	2.46 ft.	Number of traverse points used	ea.

TRAVERSE POINT LOCATION

Point No.	Ideal Location (in) L	W	Actual Location (in) L	W	Point No.	Ideal Location (in) L	W	Actual Location (in) L	W
1	.5		1/2		26	51.50		51 1/2	
2	1.55		1 1/2		27				
3	2.63		2 5/8		28				
4	3.77		3 3/4		29				
5	4.98		5		30				
6	6.25		6 1/4		31				
7	7.62		7 5/8		32				
8	9.09		9		33				
9	10.70		10 3/4		34				
10	12.51		12 1/2		35				
11	14.60		14 7/8		36				
12	17.17		17 1/8		37				
13	20.90		20 7/8		38				
14	31.10		31 1/8		39				
15	34.93		34 7/8		40				
16	37.40		31 3/8		41				
17	39.49		39 1/2		42				
18	41.30		41 1/4		43				
19	42.91		42 7/8		44				
20	44.38		44 3/8		45				
21	45.75		45 3/4		46				
22	47.02		47		47				
23	48.23		48 1/4		48				
24	49.37		49 3/8		49				
25	50.45		50 1/2		50				

NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NAF Pensacola		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 30.00	
OPERATOR: HICKENBOTTOM	DATE: 12 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —	
RUN NO.: SEF 3-4	SAMPLE BOX NO.: 6		PROBE # (PITOT #): 5 6	PROBE LENGTH, in.: 60	
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: # 3	NOZZLE DIAMETER, in.: .748	
C FACTOR (Nomograph): —	PITOT COEFFICIENT, Cp: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: —	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " Hg: .008 @ 18

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
* 1	0 (0900)	17.275	86	.78	3.27	83	83	AMBIENT	69	7	AMBIENT	
2	2	19.3	87	.78	3.29	87	83		69	7		
3	4	21.09	87	.80	3.4	92	83		66	7		
4	6	23.08	87	.78	3.36	99	84		66	7		
5	8	25.07	88	.77	3.35	106	84		69	7		
6	10	26.9	88	.77	3.39	112	85		70	7		
7	12	29.1	88	.76	3.37	117	86		70	.7		
8	14	31.0	88	.73	3.26	121	88		71	7		
9	16	33.0	88	.72	3.24	124	89		70	7		
10	18	34.94	88	.69	3.12	127	90		69	7		
11	20	36.9	88	.67	3.04	129	92		69	6		
12	22	38.7	88	.63	2.87	132	93		68	6		
13 TOTAL	24	40.6	88	.63	2.88	133	95		68	6		
AVERAGE												

* ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 30.00
OPERATOR: HICKENBOTTOM	DATE: 12 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: SEF 3-4	SAMPLE BOX NO.: 6		PROBE # (PITOT #): 5.6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph):	PITOT COEFFICIENT, Cp: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING:	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: •

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
14	26	42.4	88	.58	2.65	133	97	AMBIENT	68	6		
15	28	44.2	90	.55	2.51	134	98		68	5		
16	30	45.7	90	.52	2.37	135	99		67	5		
17	32	47.67	90	.51	2.33	136	101		67	5		
18	34	49.35	90	.50	2.29	137	103		67	5		
19	36	51.05	91	.49	2.24	137	104		67	5		
20	38	52.86	91	.49	2.24	138	105		67	5		
21	40	54.42	91	.47	2.15	138	106		68	5		
22	42	56.15	91	.47	2.15	139	107		68	5		
23	44	57.8	92	.44	2.01	139	108		68	5		
24	46	59.44	92	.43	1.97	140	109		68	4		
25	48	61.4	92	.43	1.97	140	110		68	4		
* TOTAL 26	50	63.0	92	.41	1.88	141	111		68	4		
AVERAGE	52	64.28										

* ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604	LOCATION: NARF PENSACOLA	SEF 3	AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 30.02
OPERATOR: HICKENBOTTOM	DATE: 12 MAY 86		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: SEF 3.4	SAMPLE BOX NO.: 6		PROBE # (PITOT #): 5.6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: 60 .248
C FACTOR (Nomograph):	PITOT COEFFICIENT, Cp: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING:	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: @

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) Ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
*27	0	64.28	90	.54	2.38	115	110	AMBIENT	70	5		
28	2	66.0	90	.52	2.30	117	110		62	5		
29	4	67.68	90	.53	2.36	121	110		58	5		
30	6	69.38	89	.51	2.51	126	110		59	5		
31	8	71.2	90	.61	2.76	130	110		61	5		
32	10	72.91	90	.65	2.96	133	110		62	5		
33	12	74.76	90	.69	3.15	135	111		63	.5		
34	14	76.7	90	.77	3.54	139	111		63	6		
35	16	78.76	90	.78	3.59	141	112		65	7		
36	18	80.96	90	.84	3.89	144	112		65	8		
37	20	83.11	90	.86	4.00	146	113		66	8		
38	22	85.4	90	.88	4.11	149	114		67	9		
TOTAL	24	87.8	90	.78	3.61	151	114		67	9		
AVERAGE												

* ADJUSTED

NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NAF PENSACOLA	SEF 3	AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 30.02
OPERATOR: HIRKENBOTTOM	DATE: 12 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: SEF 3-4	SAMPLE BOX NO.: 6		PROBE # (PITOT #): S-6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph):	PITOT COEFFICIENT, Cp: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: —	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: .008 @ 12.

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
40	26	89.85	89	.58	2.73	153	114	AMBIENT	67	8		
41	28	91.77	89	.54	2.54	153	115		67	6		
42	30	93.5	89	.53	2.49	152	116		67	5		
43	32	95.26	90	.53	2.48	150	117		67	5		
44	34	97.01	89	.51	2.39	149	117		66	5		
45	36	98.75	89	.50	2.34	149	117		67	5		
46	38	100.47	90	.45	2.10	149	118		67	5		
47	40	102.2	89	.40	1.86	148	118		67	4		
48	42	104.4	91	.36	1.67	147	118		66	4		
49	44	105.16	91	.30	1.39	146	118		66	4		
50	46	106.91	90	.26	1.21	146	119		66	3		
51	48	107.84	90	.23	1.07	145	119		66	3		
52 TOTAL*	50	109.05	90	.19	.88	143	120		66	2		
AVERAGE	52	110.14										

*ADJUSTED

FILTER NOs	

1310 PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 0800

DATE 12 MAY 80

LOCATION NARF PENSACOLA

RUN NO. SEF 3 -5

PLANT 604

STACK NO. SEF 3

SOURCE SEF-3

SAMPLE BOX NO. 5E

A. Stack Pressure, P_s (inch water)	-.38	A
B. Barometric Pressure, P_b (inch Hg)	30.00	B
C. Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$		C
D. P_s/P_b		D
E. Meter Temperature, t_m (^oF), $t_{ambient}$ + 30		E
F. Meter $\Delta H@$ (inch water)		F
G. Meter Correction Factor, γ		G
H. Assumed Moisture Content (%)	2	H
I. Nomograph Correction Factor, C_f		I
J. High Stack ΔP (inch water)		J
Average Stack ΔP (inch water)		
Low Stack ΔP (inch water)		
K. High Stack Temperature, t_s (^oF)		K
Average Stack Temperature, t_s (^oF)		
Low Stack Temperature, t_s (^oF)		
L. Ideal Probe Tip Diameter, Dn (inch)		L
M. Actual Probe Tip Diameter, Dn (inch)		M
N. Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)		N

MT Cube = 410.4 / 37.3

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

DATE: 12 MAY 80
PLANT: 604
LOCATION: NARF PENSACOLA
PREP. BY: YEE

RUN NO.: SEF 3 - 5
STACK NO: SEF 3
SAMPLE BOX NO.: 5

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
1-1	1. 100 ml		630.8	656.2	25.4	
1-2	2. 100 ml		609.5	616.2	6.7	
1-3	3. Dry		480.3	484.2	3.9	TOTAL
1-4	4. 175 g silica gel		670.6	690.3	19.7	55.7

55.7

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

11ND-CBC-3960/47 (REV. 11-78)

*ADJUSTED POINT

** POWER LOST - ENTIRE ROOF

→ NORTH

SOURCE EMISSIONS TESTING DATA SHEET - WHOLE BLDG
11ND-C8C-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 83	BAROMETRIC PRESSURE, IN HG: 30.02
OPERATOR: CARPENTER	DATE: 12 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: OFF
RUN NO.: 5	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER ΔH@: 2.15		NOZZLE I.D. NO.: 1/4-4-INK	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE(CFM) @ " HG: .001 @ 9

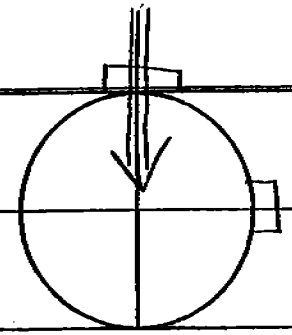
TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
	1310											
* 1	0	768.435	80	0.30	1.35	83	83	AMBIENT	48	2¼	AMBIENT	
* 2	2	769.8	80	0.36	1.6	84	83		45	3		
3	4	770.9	81	0.395	1.8	87	83		41	3		
4	6	773	84	0.43	1.95	90	83		44	3¼		
* 5	8	774	89	0.455	2.05	94	84		47	3¼		
6	10	775.4	90	0.455	2.05	85	86		50	3¼		
7	12	777.2	95	0.48	2.1	89	86		70	3¼		
8	14	778.	96	0.49	2.15	92	87		66	3½		
9	16	780.5	95	0.49	2.2	96	87		60	3½		
10	18	782.1	91	0.505	2.3	99	88		58	3½		
11	20	783.7	92	0.525	2.4	104	88		60	3½		
12	22	785.2	93	0.53	2.45	108	88		60	3½		
TOTAL 13	24	787	94	0.54	2.45	111	90		62	3½		
AVERAGE 14	26	788.7	93	0.67	3.1	114	91		62	4½		

28

TURN PAGE

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

→ NORTH



PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 83	BAROMETRIC PRESSURE, IN HG: —
OPERATOR: CARPENTER	DATE: 12 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: OFF
RUN NO.: 5	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 55 —	PROBE LENGTH, in.: 60
METER BOX NO.: B3	METER ΔH@: 2.15		NOZZLE I.D. NO.: ¼-4-IX	NOZZLE DIAMETER, in.: 0.246
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX

LEAK RATE (CFM) @ " Hg: — @ —

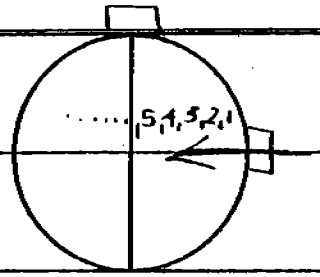
TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
15	28	790.4	93	0.69	3.2	117	92	AMBIENT	62	4½	AMBIENT	
16	30	792	94	0.70	3.25	118	93		64	4¾		
17	32	794.4	97	0.74	3.45	121	95		67	5		
18	34	796	95	0.76	3.55	123	96		67	5		
19	36	798.4	97	0.79	3.7	124	98		68	5¼		
20	38	800.5	97	0.81	3.8	125	99		69	5¼		
21	40	802.6	96	0.825	3.9	126	101		68	5½		
22	42	804.	96	0.835	3.95	129	102		68	5½		
23	44	807	96	0.84	4.00	131	103		68	5½		
24	46	809.1	97	0.825	3.9	132	105		70	5¼		
25	48	812	97	0.8	3.8	132	106		70	5¼		
1*26	50	813.5	98	0.81	3.85	132	107		69	5¼		
TOTAL	52	815.862	CHANGE	PORTS		READ		METER				
AVERAGE	140		TURN PAGE									

* ADJUSTED POINTS

0150

→ NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 60A	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 83	BAROMETRIC PRESSURE, IN HG: —
OPERATOR: CARPENTER	DATE: 12 MAY 81		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: OFF
RUN NO.: 5	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60
METER BOX NO.: B 3	METER ΔH@: 2.15		NOZZLE I.D. NO.: 1/4-A-INC	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX

LEAK RATE (CFM) @ " HG: — @ —

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
1 27	0	815.662	94	0.25	1.15	111	106	AMBIENT	70	2 1/4	AUTO	
2 28	2	811.2	89	0.26	1.2	107	106		66	2 1/4		
3 29	4	818	90	0.31	1.45	111	107		65	2 1/2		
4 30	6	819.9	90	0.37	1.7	112	107		67	2 1/2		
5 31	8	821.5	90	0.43	2.0	115	106		68	3 1/4		
6 32	10	823	94	0.45	2.1	118	106		70	3 1/2		
7 33	12	824	94	0.47	2.2	120	107		70	3 1/2		
8 34	14	826	97	0.50	2.3	120	106		68	3 1/2		
9 35	16	828	96	0.54	2.5	122	106		68	3 3/4		
10 36	18	829	97	0.55	2.6	124	106		69	3 3/4		
11 37	20	831	97	0.545	2.55	124	106		69	3 3/4		
12 38	22	833	96	0.545	2.55	124	106		70	3 3/4		
13 TOTAL 39	24	835	97	0.555	2.6	124	107		70	3 3/4		
14 AVERAGE 40	26	837	96	0.825	3.85	124	107		68			

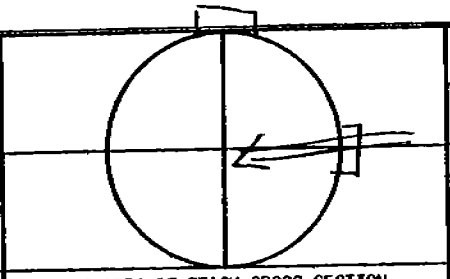
D-51

28

TURN PAGE

→ NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 6004	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 83	BAROMETRIC PRESSURE, IN HG: 29.97	
OPERATOR: CARPENTER	DATE: 12 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: OFF	
RUN NO.: 5	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5-S	PROBE LENGTH, in.: 60	
METER BOX NO.: 3	METER ΔH@: 2.15		NOZZLE I.D. NO.: 1/4 - 4 - JMC	NOZZLE DIAMETER, in.: 0.245	
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: 0008 @ 10

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
41 (15)	28	838.8	97	0.885	4.2	127	107	AMBIENT	67	5 3/4	AMBIENT	
42 (16)	30	841	97	0.935	4.4	129	107		68	6 1/4		
43 (17)	32	843	97	0.93	4.4	131	108		68	6 1/4		
44 (18)	34	846	96	0.925	4.4	134	108		68	6 1/4		
45 (19)	36	848	97	0.86	4.1	134	109		68	5 3/4		
46 (20)	38	850	98	0.81	3.85	134	110		69	5 1/4		
47 (21)	40	852	98	0.80	3.8	133	110		68	5 1/4		
48 (22)	42	854	100	0.70	3.3	132	110		69	4 1/2		
49 (23)	44	856	101	0.64	3.0	132	111		70	4 1/4		
50 (24)	46	858	100	0.60	2.85	131	111		70	4		
51 (25)	48	860	100	0.575	2.7	130	111		70	4		
52 (26)	50	862	99	0.575	2.7	129	111		70	4		
TOTAL	52	863854	END OF TEST @ READ METER @ DO LEAK CHECK									
AVERAGE	16.49		@ READ CLOCK @ READ BAROMETER @ PTL									

D-52

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME _____

DATE _____

LOCATION NARF PENSACOLA

PLANT 604

SOURCE _____

RUN NO. SEF 3 - 6 Run 3

STACK NO. SEF 3

SAMPLE BOX NO. 1

A.	Stack Pressure, P_s (inch water)	-.38 A
B.	Barometric Pressure, P_b (inch Hg)	30.02 B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m (^oF), $t_{ambient}$ + 30	133 E
F.	Meter $\Delta H@$ (inch water)	1.9314 F
G.	Meter Correction Factor, γ	1.0001 G
H.	Assumed Moisture Content (%)	2 H
I.	Nomograph Correction Factor, C_f	I
J.	High Stack ΔP (inch water)	J
	Average Stack ΔP (inch water)	.581
	Low Stack ΔP (inch water)	
K.	High Stack Temperature, t_s (^oF)	K
	Average Stack Temperature, t_s (^oF)	90
	Low Stack Temperature, t_s (^oF)	
L.	Ideal Probe Tip Diameter, Dn (inch)	L
M.	Actual Probe Tip Diameter, Dn (inch)	M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	N

+278
36.8 empty Catch
371.0

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

DATE: _____

PLANT: _____

LOCATION: _____

PREP. BY: _____

RUN NO.: _____

STACK NO: _____

SAMPLE BOX NO.: 1

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
6-1	1. 100 ml		568.3	590.4		
6-2	2. 100 ml		595.5	601.8		
6-3	3. Dry		493.5	496.5		TOTAL
6-4	4. 175 g silica gel		677.0	696.5		

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604	LOCATION: NAVF PENSACOLA	SEF 3	AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 30.02
OPERATOR: HICKENBOTTOM	DATE: 12 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: 5	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph)	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING	PROBE LINER MATERIAL: PYREX

LEAK RATE (CFM) @ " HG: .008 @

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
★ 1	0 / 300	110.45	91	.58	2.44	90	89	AMBIENT	70	4		
2	2	112.06	91	.54	2.28	93	90		70	4		
3	4	113.78	91	.53	2.28	102	90		69	4		
4	6	115.65	91	.57	2.47	108	91		68	4		
5	8	117.11	91	.60	2.63	114	91		69	4		
6	10	119.3	93	.68	3.00	120	92		70	4		
7	12	120.7	93	.71	3.14	123	93		70	5		
8	14	122.51	94	.78	3.48	121	94		71	5		
9	16	124.63	93	.85	3.82	130	95		71	5		
10	18	126.8	94	.87	3.92	133	96		69	6		
11	20	128.99	93	.90	4.08	136	98		68	6		
12	22	131.3	93	.80	4.06	139	99		67	6		PEAK ALLOW
13 TOTAL	24	133.4	92	.81	3.40	90	87		60	6		
AVERAGE												

★ ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 90	BAROMETRIC PRESSURE, IN HG: 30.02
OPERATOR: HICKENBOTTOM	DATE: 12 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: SEF 3-6	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER $\Delta H_@$: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph): —	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: —	PROBE LINER MATERIAL: PYREX	LEAK RATE(CFM) @ " HG: @

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
14	26	135.4	92	.58	2.46	96	88	AMBIENT	54	5		
15	28	137.17	93	.53	2.27	103	88		58	4		
16	30	139.0	92	.54	2.33	106	89		62	4		
17	32	140.48	93	.52	2.25	109	89		63	4		
18	34	142.18	93	.51	2.22	112	90		64	4		
19	36	143.81	92	.51	2.23	114	91		64	4		
20	38	145.49	92	.46	2.02	117	91		63	4		
21	40	147.05	93	.46	2.03	119	92		64	4		
22	42	148.66	93	.41	1.81	121	93		64	4		
23	44	150.22	90	.40	1.78	122	94		63	4		
24	46	151.74	90	.36	1.61	123	96		64	4		
25	48	153.19	89	.28	1.25	124	97		65	4		
26 TOTAL★	50	154.51	89	.27	1.21	125	98		66	4		
AVERAGE	52	155.82										

★ ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NC-111

PLANT: 604	LOCATION: NAS PENSACOLA		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 30.02
OPERATOR: HICKENBOTTOM	DATE: 12 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: SEF 3-5	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314	SEF 3	NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph): —	PITOT COEFFICIENT, Cp: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: @

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
* 27	0	155.82	92	.75	3.19	97	96	AMBIENT	69	5	AVG	
28	2	157.8	93	.75	3.21	102	98		60	5		
29	4	159.69	92	.77	3.34	109	98		57	5		
30	6	161.7	93	.76	3.33	115	98		61	5		
31	8	163.67	93	.75	3.31	119	99		64	5		
32	10	165.67	93	.74	3.28	123	99		66	5		
33	12	167.66	93	.73	3.26	126	100		67	5		
34	14	169.62	93	.71	3.18	128	101		67	5		
35	16	171.56	93	.69	3.09	129	102		68	5		
36	18	173.48	93	.64	2.88	131	103		69	5		
37	20	175.3	93	.62	2.79	132	103		68	4		
38	22	177.1	93	.60	2.71	133	104		69	4		
39 TOTAL	24	179.81	92	.57	2.58	133	105	V	68	4		
AVERAGE												

D-57

* ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-OBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604	LOCATION: NARF Pensacola		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.97
OPERATOR: HICKENBOTTOM	DATE: 12 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: SEF 3-6	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 5:6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph): —	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: —	PROBE LINER MATERIAL: PYREX / LEAK RATE (CFM) @ " Hg: .009 @ 11

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
40	26 (1414)	180.62	92	.56	2.53	133	106	AMBIENT	68	4	AMBIENT	
41	28	182.6	92	.51	2.31	133	107		68	4		
42	30	184.11	92	.50	2.26	134	107		67	4		
43	32	185.8	91	.48	2.18	134	107		67	4		
44	34	187.47	91	.47	2.13	135	108		67	4		
45	36	189.14	92	.46	2.09	135	109		67	4		
46	38	190.11	92	.46	2.09	135	109		67	4		
47	40	192.44	92	.46	2.09	136	109		67	4		
48	42	194.1	92	.42	1.91	135	110		68	4		
49	44	195.7	92	.44	1.99	135	111		68	4		
50	46	197.34	92	.41	1.86	134	111		68	4		
51	48	198.92	92	.41	1.86	135	111		68	4		
TOTAL 52	50	200.5	91	.35	1.59	134	111		68	4		
AVERAGE	52	202.01										

HADJUSTED

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 1115

DATE 13 MAY 80

LOCATION NARF PENSACOLA

RUN NO. SEF 4 - 1

PLANT 1.04

STACK NO. SEF 4

SOURCE _____

SAMPLE BOX NO. 5

A.	Stack Pressure, P_s (inch water)	-.20 A
B.	Barometric Pressure, P_b (inch Hg)	29.93 B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m (°F), $t_{ambient}$ + 30	E
F.	Meter $\Delta H@$ (inch water)	1.9314 F
G.	Meter Correction Factor, δ	1.0201 G
H.	Assumed Moisture Content (%)	2 H
I.	Nomograph Correction Factor, C_f	I
J.	High Stack ΔP (inch water)	J
	Average Stack ΔP (inch water)	.297
	Low Stack ΔP (inch water)	
K.	High Stack Temperature, t_s (°F)	K
	Average Stack Temperature, t_s (°F)	86
	Low Stack Temperature, t_s (°F)	
L.	Ideal Probe Tip Diameter, Dn (inch)	.276 L
M.	Actual Probe Tip Diameter, Dn (inch)	M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	N

MT cl = 407.7 − 37.4

PARTICULATE SAMPLE BOX SET UP CHECKLIST

DATE: _____ RUN NO.: _____

PLANT: _____ STACK NO: _____

LOCATION: _____ SAMPLE BOX NO.: 5

PREP. BY: _____

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
5	1. 100 ml		567.6	587.7		
6	2. 100 ml		595.4	600.1		
6	3. Dry		473.2	475.3		TOTAL
6	4. 175 g silica gel		670.1	685.7		

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604	LOCATION: NAS PENSACOLA		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.98
OPERATOR: HICKENBOTTOM	DATE: 13 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: SEF 4 - 7	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5 6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314	SEF 4	NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph): →	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING	PROBE LINER MATERIAL: PYREX / LEAK RATE (CFM) @ in HG: .008 @ 16

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F.	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
1*	1115 / 0	209.7	88	.47	1.98	89	89	AMBIENT	70	4	AMBIENT	
2	2	211.24	88	.48	2.03	91	90		70	4		
3	4	212.81	88	.48	2.05	96	91		70	4		
4	6	214.43	88	.44	1.90	103	91		67	4		
5	8	216.03	88	.42	1.83	106	91		67	4		
6	10	217.55	88	.40	1.75	110	92		68	4		
7	12	219.05	88	.36	1.58	112	92		69	4		
8	14	220.46	88	.34	1.50	113	93		69	3		
9	16	221.85	88	.32	1.41	114	93		67	3		
10	18	223.19	88	.31	1.37	116	94		66	3		
11	20	224.51	89	.29	1.28	116	94		66	3		
12	22 / 24	225.96	88	.28	1.24	117	95		66	3		
13 TOTAL	24	227.15	88	.26	1.15	118	95	↓	67	3		
AVERAGE												

* ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604-	LOCATION: NAVY PENSACOLA		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.96
OPERATOR: HICKENBOTTOM	DATE: 13 MAY 90		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: SEF 4-7	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph): —	PITOT COEFFICIENT, Cp: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING	PROBE LINER MATERIAL: PYREX	LEAK RATE(CFM) @ " HG: @

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
14	26	227.	88	.22	.98	117	96	AMOUNT	67	3		
15	28	229.58	88	.23	1.02	117	97		67	3		
16	30	230.77	88	.24	1.06	116	97		68	3		
17	32	232.0	88	.22	0.97	116	98		67	3		
18	34	233.15	88	.21	0.93	118	98		67	3		
19	36	234.28	88	.20	0.89	118	99		68	3		
20	38	235.38	88	.18	0.8	118	99		68	3		
21	40	236.43	88	.17	0.75	117	100		70	2		
22	42	237.43	88	.16	0.71	116	100		69	2		
23	44	238.4	88	.16	0.71	117	101		70	2		
24	46	239.37	88	.15	0.66	116	101		69	2		
25	48	240.28	87	.15	0.67	117	102		69	2		
21 TOTAL*	50	241.1	87	.13	.58	118	102	↓	69	2		
AVERAGE	52	242.105										

1207

*ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

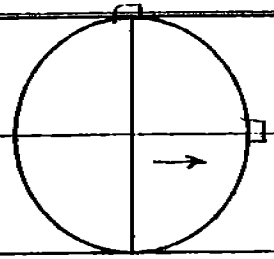
NORTH

PLANT: 604	LOCATION: NAAF PENSACOLA	SEF 4	AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.96
OPERATOR: HICKENBOTTOM	DATE: 13MAY80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: SEF 4-7	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph): —	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: —	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: @

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
27	0 (1230)	242.105	88	.53	2.27	98	96	AMBIENT	66	4	AMB	AMB
28	2	243.75	87	.52	2.23	98	98		66	4		
29	4	245.46	87	.55	2.39	104	98		61	4		
30	6	247.13	87	.55	2.42	111	98		59	4		
31	8	248.83	87	.56	2.48	114	98		61	4		
32	10	250.55	87	.56	2.49	117	98		62	4		
33	12	252.3	87	.55	2.45	119	98		62	4		
34	14	254.0	87	.54	2.41	120	98		62	4		
35	16	255.73	87	.50	2.24	121	99		62	4		
36	18	257.41	87	.46	2.06	122	99		63	4		
37	20	259.4	87	.41	1.84	122	100		63	4		
38	22	260.62	87	.34	1.52	120	100		62	4		
39 TOTAL	24	262.05	87	.28	1.25	120	101	↓	63	4		
AVERAGE												

NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 70	BAROMETRIC PRESSURE, IN HG: 29.95	
OPERATOR: HICKENBOTTOM	DATE: 13 May 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —	
RUN NO.: SET 4 - 7	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5 L	PROBE LENGTH, in.: 60	
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248	
C FACTOR (Nomograph): —	PITOT COEFFICIENT, Cp: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: .009 @ 7

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
40	26	263.37	87	.24	1.07	120	101	AMBIENT	64	3		
41	28	267.60	87	.26	1.16	119	101		64	3		
42	30	265.9	87	.28	1.25	118	102		64	3		
43	32	267.18	87	.36	1.60	118	102		63	3		
44	34	268.58	87	.40	1.78	118	102		63	3		
45	36	270.1	87	.44	1.96	118	102		64	4		
46	38	271.66	87	.48	2.14	119	102		64	4		
47	40	273.31	87	.48	2.14	120	102		64	4		
48	42	275.0	86	.46	2.06	121	102		64	4		
49	44	276.65	86	.43	1.93	121	102		65	4		
50	46	278.24	86	.38	1.71	123	102		65	4		
51	48	279.74	86	.36	1.62	123	103		65	4		
52 TOTAL ★	50	281.19	86	.32	1.44	122	103		65	4		
AVERAGE	52	282.53										

D64

1322

★ ADJUSTED

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 0830

DATE 14 MAY 80

LOCATION NARF PENSACOLA

PLANT 604

SOURCE _____

RUN NO. SEF 4 - 8

STACK NO. SEF 4

SAMPLE BOX NO. 5

A.	Stack Pressure, P_s (inch water)	-.20	A
B.	Barometric Pressure, P_b (inch Hg)	29.88	B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$		C
D.	P_s/P_b		D
E.	Meter Temperature, t_m (^oF), $t_{ambient}$ + 30		E
F.	Meter $\Delta H@$ (inch water)	.9314	F
G.	Meter Correction Factor, γ	1.0001	G
H.	Assumed Moisture Content (%)	2	H
I.	Nomograph Correction Factor, C_f		I
J.	High Stack ΔP (inch water)		J
	Average Stack ΔP (inch water)	.356	
	Low Stack ΔP (inch water)		
K.	High Stack Temperature, t_s (^oF)		K
	Average Stack Temperature, t_s (^oF)	87	
	Low Stack Temperature, t_s (^oF)		
L.	Ideal Probe Tip Diameter, Dn (inch)	.265	L
M.	Actual Probe Tip Diameter, Dn (inch)	.248	M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)		N

11ND-C8C-3960/68 (11-78)

416.3
MT 36.9

PARTICULATE SAMPLE BOX SET UP CHECKLIST

DATE: 14MAY80
PLANT: GC4
LOCATION: NAS PENSACOLA
PREP. BY: YEE

RUN NO.: SEF 4 5
STACK NO: SEF 4
SAMPLE BOX NO.: 5

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
6	1. 100 ml		567.3	592.8		
6	2. 100 ml		594.0	600.5		
6	3. Dry		493.2	495.2		TOTAL
6	4. 175 g silica gel		700.8	716.1		

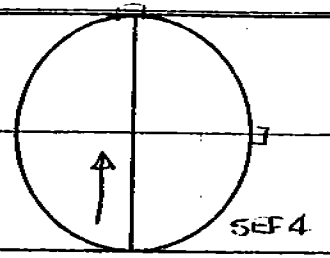
Filter No	Tare	Final	Net	
2				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

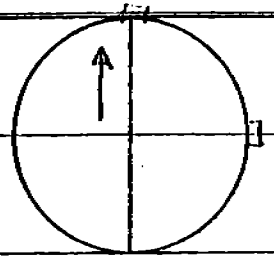
PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 75	BAROMETRIC PRESSURE, IN HG: 29.88
OPERATOR: HICKENBOTTOM	DATE: 14 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: SEF 4-8	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph): —	PITOT COEFFICIENT, Cp: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: —	PROBE LINER MATERIAL: PYREX
				LEAK RATE (CFM) @ " HG: .005 @ 16

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
1 *	0830 / 0	357.05	87	0.5	2.09	84	83	AMBIENT	71	3	AMBIENT	
2	2	358	87	0.5	2.13	92	84		71	3		
3	4	360.3	87	.49	2.1	97	85		71	3		
4	6	361.95	87	.46	1.99	102	85		69	3		
5	8	363.58	87	.44	1.92	107	86		68	3		
6	10	365.18	87	.41	1.80	110	86		69	3		
7	12	366.71	87	.38	1.68	113	88		70	3		
8	14	368.18	87	.35	1.56	115	89		70	3		
9	16	369.7	87	.32	1.42	117	90		70	3		
10	18	371.0	87	.32	1.42	118	91		70	2		
11	20	372.31	87	.30	1.34	119	91		69	2		
12	22	373.69	86	.29	1.30	119	91		68	2		
13 TOTAL	24	374.99	86	.26	1.16	121	93		67	2		
AVERAGE												

* ADJUSTED

NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)



PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.88
OPERATOR: HICKENBOTTOM	DATE: 14 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: SEF 4-8	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph): —	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING:	PROBE LINER MATERIAL: PYREX / LEAK RATE (CFM) @ " HG: @

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER Inlet (T min) °F	Outlet (T mout) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
14	26	376.28	86	.23	1.03	119	94	AMBIENT	67	2		
15	28	377.58	87	.23	1.02	118	95		68	2		
16	30	378.68	87	.23	1.02	118	95		67	2		
17	32	379.87	88	.23	1.02	118	96		66	2		
18	34	381.06	88	.20	.89	118	96		66	2		
19	36	382.17	88	.18	.80	118	97		65	2		
20	38	383.19	89	.17	.76	119	97		66	2		
21	40	384.19	89	.16	.71	119	98		66	2		
22	42	385.1	90	.16	.71	120	98		66	2		
23	44	386.11	88	.15	.67	120	99		66	2		
24	46	387.03	90	.15	.67	120	99		66	1		
25	48	387.98	90	.12	.53	120	100		67	1		
26 TOTAL*	50	388.82	89	.12	.53	120	100		67	1		
AVERAGE	52	389.61										

0932

* ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 6004	LOCATION: NSAF PENSACOLA		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.88
OPERATOR: HICKENBOTTOM	DATE: 14 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: SEF 4-8	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph):	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING:	PROBE LINER MATERIAL: PYREX
				LEAK RATE (CFM) @ " HG: @

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
27 *	0 (6442)	389.643	89	.50	2.14	99	98	AMBIENT	70	3	AMBIENT	
28	2	391.3	89	.50	2.16	102	98		70	3		
29	4	393.0	89	.52	2.26	107	98		60	3		
30	6	394.65	88	.55	2.42	112	98		57	3		
31	8	396.4	89	.56	2.47	116	98		57	3		
32	10	398.08	88	.56	2.49	118	99		58	3		
33	12	399.80	88	.55	2.46	121	99		60	.3		
34	14	401.55	88	.53	2.37	122	99		60	3		
35	16	403.24	88	.48	2.15	122	99		60	3		
36	18	404.94	87	.43	1.93	122	99		60	3		
37	20	406.55	87	.40	1.79	122	99		60	3		
38	22	408.1	87	.34	1.52	122	100		60	3		
31 TOTAL	24	409.55	88	.28	1.25	122	101		63	3		
AVERAGE												

* ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604	LOCATION: NAF Pensacola	SEF4	AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.89
OPERATOR: HICKENBOTTOM	DATE: 14 MAY 86		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: SEF 4-8	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5 C	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER $\Delta H_@$: 1.931		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph):	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: —	PROBE LINER MATERIAL: PYREX	LEAK RATE(CFM) @ " HG: .006 @ 10

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
40	26 (1000)	410.9	88	.22	.98	121	102	AMBIENT	62	2		
41	28	412.06	88	.25	1.11	120	102		63	2		
42	30	413.32	87	.30	1.34	120	102		63	2		
43	32	414.7	87	.35	1.57	121	103		62	2		
44	34	416.1	88	.39	1.74	121	103		62	2		
45	36	417.51	88	.41	1.83	122	104		63	3		
46	38	419.141	88	.44	1.97	123	104		63	3		
47	40	420.76	88	.44	1.98	124	104		64	3		
48	42	422.38	88	.42	1.89	125	105		64	3		
49	44	423.98	88	.40	1.80	126	105		64	3		
50	46	425.51	88	.33	1.44	126	106		64	3		
51	48	427.0	89	.33	1.48	125	106		64	3		
50 TOTAL*	50	428.36	89	.33	1.49	125	106		64	3		
AVERAGE	50	421.141										

109

* ADJUSTED

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 1100

DATE 14 MAY 80

LOCATION NAFF PENSACOLA

PLANT CC4

SOURCE _____

RUN NO. SEF 4-9

STACK NO. SEF 4

SAMPLE BOX NO. 6

A.	Stack Pressure, P_s (inch water)	-.20 A
B.	Barometric Pressure, P_b (inch Hg)	29.85 B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m (^oF), $t_{ambient} + 30$	E
F.	Meter $\Delta H@$ (inch water)	F
G.	Meter Correction Factor, δ	G
H.	Assumed Moisture Content (%)	H
I.	Nomograph Correction Factor, C_f	I
J.	High Stack ΔP (inch water)	J
	Average Stack ΔP (inch water)	.349
	Low Stack ΔP (inch water)	
K.	High Stack Temperature, t_s (^oF)	K
	Average Stack Temperature, t_s (^oF)	88
	Low Stack Temperature, t_s (^oF)	
L.	Ideal Probe Tip Diameter, Dn (inch)	.265 L
M.	Actual Probe Tip Diameter, Dn (inch)	.248 M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	N

IIND-CBC-3960/68 (11-78)

378.4
37.5

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

DATE: _____

PLANT: 604

LOCATION: NACF

PREP. BY: YEE

RUN NO.: SEE 4-9

STACK NO: 604

SAMPLE BOX NO.: 0

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
6	1. 100 ml		624.4	648.4	24.0	
6	2. 100 ml		577.3	584.3	7.0	
6	3. Dry		518.7	521.5	2.8	TOTAL
6	4. 175 g silica gel		710.2	724.0	13.8	47.6

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

11ND-CBC-3960/47 (REV. 11-78)

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604	LOCATION: NAVF PENSACOLA		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.88
OPERATOR: HICKERSON/TOM	DATE: 14 MAY 86		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: -
RUN NO.: SEF 4-89	SAMPLE BOX NO.: 6		PROBE # (PITOT #): 5 6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.7314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .245
C FACTOR (Nomograph): —	PITOT COEFFICIENT, Cp: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: -	PROBE LINER MATERIAL: PYREX
				LEAK RATE (CFM) @ " HG: .00 @ 17

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
1	1100 / 0	429.95	90	.54	2.27	89	90	AMBIENT	71	5	AMB	IENT
2	2	431.65	90	.51	2.30	95	91		74	5		
3	4	433.3	90	.56	2.40	99	91		71	5		
4	6	434.96	90	.56	2.42	105	91		71	5		
5	8	436.67	90	.59	2.58	110	92		70	5		
6	10	438.39	90	.58	2.55	113	92		70	5		
7	12	440.14	90	.56	2.47	117	93		70	.5		
8	14	441.87	90	.55	2.44	119	94		70	5		
9	16	443.59	90	.51	2.26	121	95		69	5		
10	18	445.3	90	.46	2.05	122	96		68	4		
11	20	446.93	90	.40	1.79	123	96		67	4		
12	22	448.48	90	.35	1.57	124	97		67	4		
TOTAL	24	449.94	90	.31	1.39	120	98	↓	68	3		
AVERAGE												

D-73

ADJUSTED

NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NARF PENSACOLA	SEF4	AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.88
OPERATOR: HICKENBOTTOM	DATE: 14 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: -
RUN NO.: SEF4-9	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 6.0
METER BOX NO.: 4	METER $\Delta H_@$: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph)	PITOT COEFFICIENT, C_P: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING	PROBE LINER MATERIAL: PYREX

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F.	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
14	26	451.27	90	.22	.98	122	98	AMBIENT	68	3		
15	28	452.46	90	.25	1.11	121	99		69	3		
16	30	453.72	90	.28	1.25	121	99		67	3		
17	32	455.04	90	.35	1.56	121	101		68	3		
18	34	456.48	90	.39	1.74	122	102		66	3		
19	36	458.0	90	.42	1.88	123	102		66	3		
20	38	459.5	90	.42	1.88	125	103		65	4		
21	40	461.1	90	.41	1.84	126	103		64	4		
22	42	462.61	90	.38	1.71	126	104		62	4		
23	44	464.18	90	.35	1.57	127	105		63	3		
24	46	465.64	90	.27	1.21	127	105		64	3		
25	48	466.97	90	.27	1.22	125	106		66	3		
26 TOTAL	50	468.3	90	.27	1.22	125	106		66	3		
AVERAGE	50											

D-74

REVISED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: LOA	LOCATION: NAAF PENSACOLA		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.87
OPERATOR: HICKENBOTTOM	DATE: 14 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: SET 4 - 9	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph): —	PITOT COEFFICIENT, Cp: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: —	PROBE LINER MATERIAL: PYREX	LEAK RATE(CFM) @ " HG: @

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
27 *	0 / 1213	469.555	91	.47	2.02	102	100	AMBIENT	70	4	AMBIENT	
28	2	471.2	91	.47	2.03	105	103		66	4		
29	4	472.81	91	.47	2.04	108	103		63	4		
30	6	474.44	91	.45	1.97	113	102		63	4		
31	8	476.07	92	.43	1.89	116	102		64	4		
32	10	477.65	92	.38	1.68	118	102		65	4		
33	12	479.15	92	.36	1.59	120	102		65	.3		
34	14	480.6	92	.33	1.47	122	103		66	3		
35	16	481.98	92	.33	1.47	123	103		67	3		
36	18	483.36	92	.31	1.38	123	104		68	3		
37	20	484.77	91	.31	1.38	124	104		68	3		
38	22 /	486.01	92	.30	1.34	125	105		68	3		
TOTAL	24	487.4	92	.26	1.16	125	105		68	3		
AVERAGE												

* ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NARF Pensacola	NORTH	AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.85
OPERATOR: Hickenbottom	DATE: 14 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: –
RUN NO.: SEF 4 - 9	SAMPLE BOX NO.: 6		PROBE # (PITOT #): 5 6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph): –	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: –	PROBE LINER MATERIAL: PYREX
				LEAK RATE (CFM) @ " HG: .008 @ 10

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER Inlet (T min) °F.	Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
40	26	488.72	93	.23	1.03	125	105	AMBIENT	69	3	AMBIENT	
41	28	489.93	92	.23	1.03	125	105		66	2		
42	30	491.12	92	.24	1.07	124	105		66	2		
43	32	492.34	93	.22	.98	123	106		66	2		
44	34	493.5	93	.20	.89	123	106		67	2		
45	36	494.68	94	.19	.84	122	106		67	2		
46	38	495.72	94	.17	.75	121	106		66	2		
47	40	496.72	94	.16	.71	120	106		66	2		
48	42	497.7	93	.16	.71	120	106		66	2		
49	44	498.68	93	.15	.66	120	107		67	2		
50	46	499.61	92	.14	.62	120	106		66	1		
51	48	500.53	92	.14	.62	120	106		67	1		
52 TOTAL	50	501.43	92	.14	.62	120	106		67	1		
AVERAGE	52	500.335										

1305

RADJUSTED

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME _____

DATE 13 MAY 80

LOCATION NAVAL PENSACOLA

RUN NO. #4

PLANT 604

STACK NO. SEF 5

SOURCE SEF 5 #3

SAMPLE BOX NO. 1

A.	Stack Pressure, P_s (inch water)	-0.24 A
B.	Barometric Pressure, P_b (inch Hg)	B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m (^oF), $t_{ambient}$ + 30	E
F.	Meter $\Delta H@$ (inch water)	F
G.	Meter Correction Factor, γ	0.976 G
H.	Assumed Moisture Content (%)	2.6 H
I.	Nomograph Correction Factor, C_f	I
J.	High Stack ΔP (inch water)	J
	Average Stack ΔP (inch water)	
	Low Stack ΔP (inch water)	
K.	High Stack Temperature, t_s (^oF)	K
	Average Stack Temperature, t_s (^oF)	
	Low Stack Temperature, t_s (^oF)	
L.	Ideal Probe Tip Diameter, Dn (inch)	L
M.	Actual Probe Tip Diameter, Dn (inch)	0.245 M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	N

MW = 28.555

372.1
MT 37.1

PARTICULATE SAMPLE BOX SET UP CHECKLIST

DATE: _____ RUN NO.: _____

PLANT: _____ STACK NO: _____

LOCATION: _____ SAMPLE BOX NO.: _____

PREP. BY: _____

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
1	1. 100 ml		629.1	644.8	15.7	
1	2. 100 ml		609.3	615.8	6.5	
1	3. Dry		500.6	504.1	3.5	TOTAL
1	4. 175 g silica gel		709.6	725.7	16.1	41.8

41.8

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

$\gamma = 0.9979$ * ADJUSTED POINT

** CHECK PITOT

NORTH →

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 85	BAROMETRIC PRESSURE, IN HG: 29.96
OPERATOR: CARPENTER	DATE: 13 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: OFF
RUN NO.: 5-4	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER $\Delta H_@$: 2.15		NOZZLE I.D. NO.: 1/4-4-INC	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX / LEAK RATE (CFM) @ " HG: 0.008 @ 4

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
* 1	0 (115 / 123)	868.583	87	0.45	2.00	91	89	AMBIENT	68	11½	AMBIENT	
2	2	870	88	0.44	1.96	98	90		64	11		
3	4	872	86	0.43	1.95	97	88		61	11		
**4	6	874	86	0.43	1.95	104	89		64	11		
5	8	875	86	0.42	1.90	97	89		68	10 3/4		
6	10	876	86	0.42	1.90	100	89		66	10 3/4		
7	12	878	86	0.40	1.85	105	90		65	10 3/4		
8	14	879	87	0.37	1.75	111	91		66	10 3/4		
9	16	880	86	0.37	1.75	114	92		68	10 3/4		
10	18	882	87	0.35	1.65	116	92		70	10		
11	20	884	87	0.31	1.45	117	92		70	8 3/4		
12	22 (13)	885	87	0.29	1.35	117	94		69	8		
TOTAL	24	887	87	0.23	1.1	118	94		67	7¼		
AVERAGE (14)	26	888	87	0.20	0.945	117	95		67	6		

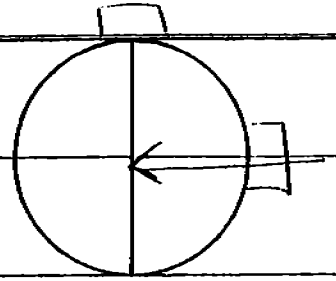
28

TURN PAGE

* ADJUSTED POINT

NORTH →

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 85	BAROMETRIC PRESSURE, IN HG: —	
OPERATOR: CARPENTER	DATE: 13 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: OFF	
RUN NO.: 5-4	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60	
METER BOX NO.: 3	METER ΔH@: 2.15		NOZZLE I.D. NO.: 4-4-INC	NOZZLE DIAMETER, in.: 0.245	
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: — @

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
15	28	889	87	0.18	0.850	119	96	AMBIENT	67	5 1/4	AMBIENT	
16	30	890	87	0.21	0.99	118	96		67	6 1/4		
17	32	891	87	0.23	1.1	118	97		65	6 3/4		
18	34	892	87	0.24	1.15	119	98		64	7		
19	36	893	86	0.27	1.3	120	98		63	7 3/4		
20	38	895	86	0.265	1.25	121	99		64	7 3/4		
21	40	896	86	0.28	1.35	122	100		64	7 3/4		
22	42	897	86	0.30	1.4	121	101		64	8 1/2		
23	44	899	86	0.31	1.5	120	102		65	8 1/2		
24	46	900	86	0.315	1.5	121	102		66	8 1/2		
25	48	902	86	0.28	1.35	122	103		67	8		
*26	50	904	85	0.28	1.35	125	105		68	8		
TOTAL	52	904.598	CHANGE PORTS			@ READ CLOCK	@	READ	MOIST			
AVERAGE	1241											

* ADJUSTED POINTS

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 85	BAROMETRIC PRESSURE, IN HG: —
OPERATOR: CARPENTER	DATE: 15 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: OFF
RUN NO.: 5-4	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 6.0
METER BOX NO.: #3	METER $\Delta H_@$: 2.15		NOZZLE I.D. NO.: 1/4-4-INC	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ — in HG: — @ —

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
1	1305											
27	0	904.598	86	0.58	2.65	96	94	AMBIENT	69	12 3/4	AMBIENT	
2												
28	2	906	86	0.61	2.6	97	96		65	12 3/4		
3												
29	4	908	86	0.575	2.65	101	96		63	12 3/4		
4												
30	6	910	86	0.56	2.6	107	96		65	13 1/4		
5												
31	8	911	86	0.60	2.6	113	96		67	13 1/4		
6												
32	10	913	86	0.57	2.65	113	96		69	13 1/4		
7												
33	12	914	86	0.51	2.7	116	97		70	13 1/2		
8												
34	14	917	86	0.565	2.65	118	97		70	13 1/2		
9												
35	16	919	86	0.565	2.7	119	97		69	13 1/2		
10												
36	18	920	86	0.565	2.7	120	98		66	13 1/2		
11												
37	20	922	86	0.56	2.65	121	99		65	13 1/2		
12												
38	22	924	86	0.555	2.65	123	99		65	13 1/2		
13												
TOTAL	24	925	86	0.525	2.5	124	100		65	12 3/4		
14												
AVERAGE	24	927	87	0.525	2.5	126	101		65	12 1/2		

TURN PAGE

* ADJUSTED POINT

NORTH →

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NAAF PENSACOLA		AMBIENT TEMPERATURE: 85	BAROMETRIC PRESSURE, IN HG: 29.94	
OPERATOR: CARPENTER	DATE: 15 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: OFF	
RUN NO.: 5-4	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60	
METER BOX NO.: #3	METER ΔH@: 2.15		NOZZLE I.D. NO.: 1/4-4-INC	NOZZLE DIAMETER, in.: 0.245	
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: 0.001 @ 18

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F.	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
15 41	28	929	87	0.525	2.5	126	102	AMBIENT	66	12½	AMBIENT	
16 42	30	930	87	0.52	2.5	126	103		65	12½		
17 43	32	932	87	0.515	2.45	126	103		65	12½		
18 44	34	934	87	0.515	2.45	126	104		65	12½		
19 45	36	935	87	0.515	2.45	126	104		66	12½		
20 46	38	937	87	0.505	2.4	126	105		66	12½		
21 47	40	939	86	0.505	2.4	127	105		67	12½		
22 48	42	941	86	0.505	2.45	129	106		67	12½		
23 49	44	942	86	0.50	2.4	132	106		68	12½		
24 50	46	944	86	0.50	2.4	130	107		68	12½		
25 51	48	946	85	0.46	2.25	131	107		69	12¼		
26 52	50	947	81	0.46	2.25	133	107		69	12¼		
TOTAL	52	941.227	@ END	OF TEST &	READ	METER &	READ CLOCK					
AVERAGE	1359		& READ	BAROMETER	& LEAK	CHECK	OPTL					

DATA -4 TAPE #1

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 1515

DATE 13 MAY 80

LOCATION NARF PENSACOLA

RUN NO. 5

PLANT 604

STACK NO. SEF 5

SOURCE SEF 5 -

SAMPLE BOX NO. 4

A.	Stack Pressure, P_s (inch water)	A
B.	Barometric Pressure, P_b (inch Hg)	B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m ($^\circ$F), $t_{ambient}$ + 30	E
F.	Meter ΔH@ (inch water)	F
G.	Meter Correction Factor, γ	0.9976 G
H.	Assumed Moisture Content (%)	2.6 H
I.	Nomograph Correction Factor, C_f	I
J.	High Stack ΔP (inch water)	J
	Average Stack ΔP (inch water)	
	Low Stack ΔP (inch water)	
K.	High Stack Temperature, t_s ($^\circ$F)	K
	Average Stack Temperature, t_s ($^\circ$F)	
	Low Stack Temperature, t_s ($^\circ$F)	
L.	Ideal Probe Tip Diameter, Dn (inch)	L
M.	Actual Probe Tip Diameter, Dn (inch)	0.245 M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	N

MW = 28.555

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

Water sample 37
MT 36.3

DATE: 13 MAY 80
PLANT: 604
LOCATION: NARF PENSACOLA
PREP. BY: CKY

RUN NO.: 5
STACK NO: FES 5
SAMPLE BOX NO.: 4

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
4	1. 100 ml		596.5	609.2	12.7	
4	2. 100 ml		598.7	607.2	8.5	
4	3. Dry		521.1	524.5	3.4	TOTAL
4	4. 175 g silica gel		684.4	696.8	12.4	37

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

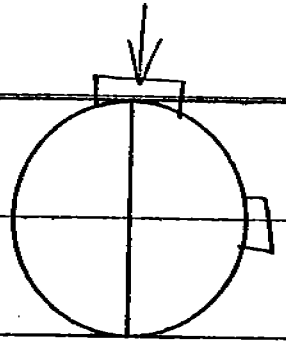
( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

11ND-CBC-3960/47 (REV. 11-78)

* ADJUSTED POINT

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH →

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 85	BAROMETRIC PRESSURE, IN HG: 29.93
OPERATOR: CARPENTER	DATE: 13 MAY 80		ASSUMED MOISTURE, %: 2.6	HEATER BOX SETTING: OFF
RUN NO.: SEF 5-5	SAMPLE BOX NO.: 4		PROBE # (PITOT #): 5-S	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER ΔH: 2.15		NOZZLE I.D. NO.: 1/4-4-INC	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " Hg: 0.016 @ 28.5

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
	15.5											
*1	0	950.472	87	0.25	1.1	93	91	AMBIENT	64	7 1/4	AMBIENT	
2	2	951.8	87	0.25	1.1	97	93		55	7 1/4		
3	4	953	86	0.25	1.15	99	93		52	7 1/2		
4	6	954	86	0.25	1.15	105	94		50	7 1/2		
5	8	955	87	0.245	1.15	110	94		52	7 1/2		
6	10	956	87	0.24	1.1	114	95		53	7 1/2		
7	12	958	87	0.24	1.1	117	96		54	7 1/2		
8	14	959	88	0.23	1.05	119	96		55	7 1/4		
9	16	960	88	0.23	1.1	121	97		56	7 1/4		
10	18	962	88	0.23	1.1	121	97		57	7 1/4		
11	20	963	88	0.225	1.05	122	99		57	7 1/4		
12	22	964	88	0.215	1.0	123	99		57	6 3/4		
13 TOTAL	24	965	88	0.20	0.94	125	101		57	6 1/2		
14 AVERAGE	26	966	88	0.205	0.965	125	102		58	6 1/2		

28

* ADJUSTED POINT

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

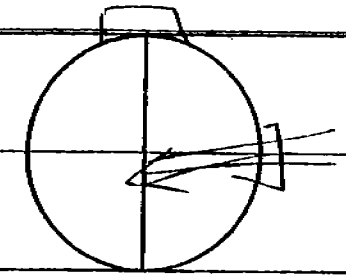
NORTH →

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 85	BAROMETRIC PRESSURE, IN HG: —
OPERATOR: CARPENTER	DATE: 13 MAY 80		ASSUMED MOISTURE, %: 2.6	HEATER BOX SETTING: OFF
RUN NO.: SEP 5-5	SAMPLE BOX NO.: 4		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER $\Delta H_@$: 2.15		NOZZLE I.D. NO.: 1/4 - 4 - INC	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, C_P: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: — @ —

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
15	28	967	87	0.20	0.945	125	103	AMBIENT	58	7 1/4	AMBIENT	
16	30	968	87	0.19	0.895	125	104		58	5 3/4		
17	32	970	87	0.19	0.90	126	105		60	5 3/4		
18	34	971	87	0.185	0.875	127	106		61	5 3/4		
19	36	972	87	0.18	0.85	127	106		62	5 1/2		
20	38	973	87	0.175	0.83	127	107		61	5 1/4		
21	40	974	87	0.17	0805	127	108		61	5 1/4		
22	42	975	87	0.165	0.98	127	108		61	5		
23	44	976	87	0.16	0.755	125	108		61	5		
24	46	977	85	0.16	0.755	125	109		62	4 3/4		
25	48	978	85	0.16	0.755	125	109		61	4 3/4		
26	50	979	84	0.155	0.735	126	109		61	4 3/4		
TOTAL	52	980.191	CHANGE PORTS & READ METER									
AVERAGE	1607		& READ CLOCK									

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH →

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 85	BAROMETRIC PRESSURE, IN HG: —
OPERATOR: CARPENTER	DATE: 13 MAY 80		ASSUMED MOISTURE, %: 2.6	HEATER BOX SETTING: OFF
RUN NO.: SCF 5-5	SAMPLE BOX NO.: 4		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER ΔH@: 2.15		NOZZLE I.D. NO.: 1/4-4-INC	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " Hg: — @ —

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
1	0	980.191	88	0.45	2.05	102	99	AMBIENT	61	13 3/4	AMB	AIR
2	2	981.8	87	0.45	2.05	99	102		56	13 3/4		
3	4	983	88	0.44	2.0	105	103		52	13 3/4		
4	6	985	87	0.43	1.95	112	102		52	13 3/4		
5	8	986	87	0.415	1.95	118	102		55	13 3/4		
6	10	988	87	0.41	1.90	121	102		58	13 1/2		
7	12	990	87	0.40	1.85	124	103		61	13 1/4		
8	14	991	87	0.395	1.85	126	103		61	13 1/4		
9	16	993	87	0.39	1.85	126	103		59	13 1/4		
10	18	995	87	0.39	1.85	128	104		59	12 3/4		
11	20	996	87	0.385	1.85	131	105		59	12 3/4		
12	22	998	87	0.38	1.8	133	106		60	12		
13	24	999	87	0.38	1.8	134	106		61	12		
14	26	1001	87	0.37	1.75	134	107		61	12		
TOTAL												
AVERAGE												

28 ONL

TURN PAGE

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH →

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 85	BAROMETRIC PRESSURE, IN HG: 29.90
OPERATOR: CARPENTER	DATE: 13 MAY 80		ASSUMED MOISTURE, %: 2.6	HEATER BOX SETTING: OFF
RUN NO.: SCFS-5	SAMPLE BOX NO.: 4		PROBE # (PITOT #): S-S	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER ΔH@: 2.15		NOZZLE I.D. NO.: 1/4-A-INX	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ in HG: 0.04 @ 18

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
40 15	28	1002	87	0.37	1.75	134	108	AMBIENT	62	12	AMBIENT	
42 16	30	1004	87	0.37	1.75	134	108		63	12		
43 17	32	1005	87	0.365	1.75	134	109		63	11 1/2		
44 18	34	1007	87	0.36	1.75	135	109		63	11 1/2		
45 19	36	1009	87	0.36	1.75	135	110		64	11 1/2		
46 20	38	1010	87	0.365	1.70	135	110		65	10 3/4		
47 21	40	1011	87	0.355	1.70	136	111		65	10 3/4		
48 22	42	1013	87	0.[illegible]95	1.40	136	111		66	9		
49 23	44	1015	86	0.25	1.20	136	112		66	8 1/4		
50 24	46	1016	86	0.25	1.20	135	112		67	8		
51 25	48	1017	85	0.25	1.20	135	112		67	8		
52 26	50	1018	85	0.25	1.20	135	112		67	8		
TOTAL	52	1018	END OF TEST @ READ METER @ READ TIME									
AVERAGE	1722	1019.782	@ READ BAROMETER . LEAK CHECK . PTL									

FILTER NOs		

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 943

DATE 14 MAY 80

LOCATION NARF PENSACOLA

RUN NO. 5-6

PLANT 604

STACK NO. SEF - 5

SOURCE SEF 5

SAMPLE BOX NO. 1

A. Stack Pressure, P_s (inch water)	-0.18	A
B. Barometric Pressure, P_b (inch Hg)	—	B
C. Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	—	C
D. P_s/P_b	—	D
E. Meter Temperature, t_m ($^\circ$F), $t_{ambient}$ + 30	—	E
F. Meter $\Delta H@$ (inch water)	1.98	F
G. Meter Correction Factor, γ	0.9979	G
H. Assumed Moisture Content (%)	2.7	H
I. Nomograph Correction Factor, C_f	N/A	I
J. High Stack ΔP (inch water)		J
Average Stack ΔP (inch water)		
Low Stack ΔP (inch water)		
K. High Stack Temperature, t_s ($^\circ$F)		K
Average Stack Temperature, t_s ($^\circ$F)		
Low Stack Temperature, t_s ($^\circ$F)		
L. Ideal Probe Tip Diameter, Dn (inch)		L
M. Actual Probe Tip Diameter, Dn (inch)	0.245	M
N. Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)		N

430.5
36.3
MT

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

DATE: 14 MAY 80
PLANT: GCA
LOCATION: NARF PENSACOLA
PREP. BY: CSY

RUN NO.: 5-6
STACK NO: FB-5
SAMPLE BOX NO.: 1

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
1	1. 100 ml		629.1	647.1	18	
1	2. 100 ml		608.2	613.0	4.8	
1	3. Dry		478.7	483.0	4.3	TOTAL
1	4. 175 g silica gel		721.3	737.3	16	43.1

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

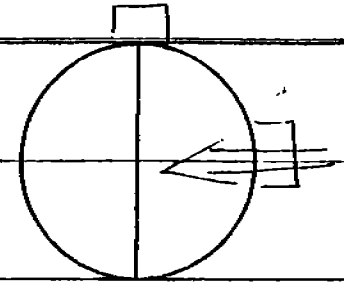
* ADJUSTED POINT

NORTH →

STATIC -0.18

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: ~~78~~ 85	BAROMETRIC PRESSURE, IN HG: 29.88
OPERATOR: CARPENTER	DATE: 14 MAY 80		ASSUMED MOISTURE, %: 2.7	HEATER BOX SETTING: OFF
RUN NO.: 5-6	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER $\Delta H_@$: 1.98		NOZZLE I.D. NO.: 1/4 · 4 · INC	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX
				LEAK RATE (CFM) @ " HG: 0.004 @ 26 1/2



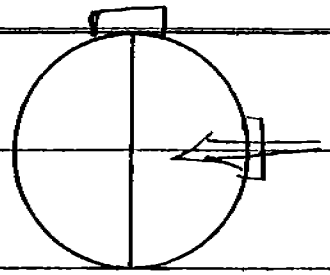
TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER Inlet (T min) °F.	Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
*1	0 / 943	25.723	84	0.46	1.85	85	85	AMBIENT	68	7	AMBIENT	
2	2	27	84	0.455	1.85	88	85		58	7		
3	4	29	85	0.455	1.85	92	86		56	7		
4	6	30	84	0.44	1.8	99	86		56	7		
5	8	32	84	0.435	1.8	102	87		58	7		
6	10	33	84	0.42	1.75	105	87		60	6 3/4		
7	12	35	85	0.395	1.65	109	88		62	6 1/2		
8	14	37	85	0.385	1.60	110	89		64	6 1/4		
9	16	38	85	0.36	1.5	112	90		63	6		
10	18	39	86	0.345	1.45	113	91		62	5 3/4		
11	20	40	86	0.315	1.3	114	92		63	5 1/2		
12	22	42	88	0.285	1.2	113	92		63	5		
13 TOTAL	24	43	88	0.25	1.05	112	92		63	4 1/2		
14 AVERAGE	26	44	88	0.20	0.835	112	94		63	4		
	28											

TURN PAGE

* ADJUSTED POINT

NORTH →

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3360/62 (Rev. 11-78)

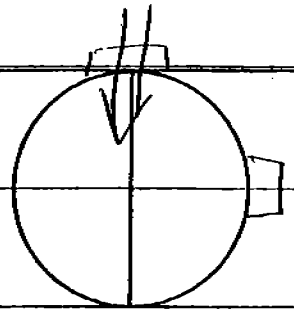
PLANT: 6CA	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 78	BAROMETRIC PRESSURE, IN HG: —	
OPERATOR: CARPENTER	DATE: 14 MAY 80		ASSUMED MOISTURE, %: 2.7	HEATER BOX SETTING: OFF	
RUN NO.: 5-6	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60	
METER BOX NO.: 3	METER $\Delta H_@$: 1.98		NOZZLE I.D. NO.: 4-4-INC	NOZZLE DIAMETER, in.: 0.245	
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: — @ —

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F.	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
15	28	45	89	0.18	0.75	112	94	AMBIENT	63	3 3/4	AMBIENT	
16	30	46	88	0.21	0.875	111	95		64	4		
17	32	47	87	0.24	1.0	111	95		63	4 1/2		
18	34	49	86	0.255	1.05	111	96		62	4 3/4		
19	36	50	86	0.265	1.1	112	97		61	5		
20	38	51	86	0.275	1.15	113	97		60	5		
21	40	52	86	0.295	1.25	113	97		60	5 1/4		
22	42	53	87	0.305	1.25	113	98		61	5 1/4		
23	44	55	86	0.31	1.3	113	98		61	5 1/4		
24	46	56	86	0.325	1.35	113	99		62	5 1/4		
25	48	57	86	0.325	1.35	113	99		62	5 1/4		
* 26	50	59	85	0.32	1.35	113	99		63	5 1/4		
TOTAL	52	60.358	CHANGE PORTS &		READ CLOCK &		READ	METER				
AVERAGE	1035		TURN PAGE									

*ADJUSTED POINTS

NORTH →

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 60A	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 78 85	BAROMETRIC PRESSURE, IN HG: —
OPERATOR: CARPENTER	DATE: 14 MAY 80		ASSUMED MOISTURE, %: 2.7	HEATER BOX SETTING: OFF
RUN NO.: 5-6	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER $\Delta H_@$: 1.98		NOZZLE I.D. NO.: 1/4-4-INC	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: — @ —

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
* 1 27	1056 0	60.358	86	0.585	2.35	90	89	AMBIENT	70	7½	AMB	AMB
2 28	2	61	86	0.59	2.35	90	91		59	7½		
3 29	4	63	86	0.575	2.35	94	92		52	7½		
4 30	6	65	86	0.575	2.35	103	92		50	7½		
5 31	8	67	86	0.57	2.35	106	93		51	7½		
6 32	10	69	86	0.57	2.35	110	93		53	7½		
7 33	12	70	86	0.55	2.3	111	94		54	7½		
8 34	14	72	87	0.545	2.3	113	94		56	7½		
9 35	16	74	86	0.525	2.2	114	94		56	7½		
10 36	18	75	86	0.49	2.05	115	95		56	7½		
11 37	20	77	87	0.44	1.85	116	96		58	7		
12 38	22	79	86	0.385	1.6	116	96		58	6¼		
13 TOTAL	24	80	87	0.28	1.2	116	97		61	5		
14 AVERAGE 40	26	81	87	0.20	0.84	116	97		62	4		

28

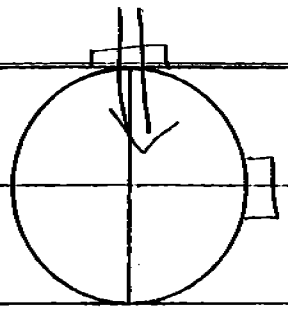
TURN PAGE

D-93

*ADJUSTED POINT

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH →



PLANT	LOCATION		AMBIENT TEMPERATURE	BAROMETRIC PRESSURE, IN HG
604	NAAF PENSACOLA		78 85	29.88
OPERATOR	DATE		ASSUMED MOISTURE, %	HEATER BOX SETTING
CARPENTER	14 MAY 80		2.7	OFF
RUN NO.	SAMPLE BOX NO.		PROBE # (PITOT #)	PROBE LENGTH, in.
5-6	1		5-5	60
METER BOX NO.	METER ΔH@		NOZZLE I.D. NO.	NOZZLE DIAMETER, in.
3	1.98		1/4-4-INC	0.245
C FACTOR (Nomograph)	PITOT COEFFICIENT, CP	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING	PROBE LINER MATERIAL	LEAK RATE (CFM) @ " HG
N/A	0.84		OFF	PYREX	0.004 @ 17

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER		SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
						Inlet (T min) °F.	Outlet (T mout) °F.					
41 15	3 28	82	87	0.22	0.925	115	98	AMBIENT	58	4 1/4	AMBIENT	
42 16	30	83	87	0.24	1.0	113	99		57	4 1/2		
43 17	32	84	87	0.24	1.0	113	99		57	4 1/2		
44 18	34	86	87	0.245	1.0	114	99		57	4 1/2		
45 19	36	87	87	0.24	1.0	114	99		57	4 1/2		
46 20	38	88	87	0.235	0.985	115	100		57	4 1/4		
47 21	40	89	87	0.24	1.0	115	100		57	4 1/2		
48 22	42	90	87	0.24	1.0	116	102		59	4 1/2		
49 23	44	91	87	0.23	0.97	117	102		60	4 1/4		
50 24	46	93	86	0.23	0.97	117	103		60	4 1/4		
*51 25	48	94	85	0.23	0.97	117	103		61	4 1/4		
*52 26	50	95	85	0.23	0.97	117	103		61	4 1/4		
TOTAL	52	96.370	END OF TEST @ READ CLOCK @ READ METER									
AVERAGE	1150		@ READ BAROMETER @ LEAK CHECK @ PTL									

FILTER NOs		

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 0935

DATE 15 MAY 80

LOCATION NARF PENSACOLA

RUN NO. 7

PLANT 604

STACK NO. SEF6

SOURCE SEF 6

SAMPLE BOX NO. 5

A. Stack Pressure, P_s (inch water)	-0.25	A
B. Barometric Pressure, P_b (inch Hg)		B
C. Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$		C
D. P_s/P_b		D
E. Meter Temperature, t_m ($^\circ$F), $t_{ambient}$ + 30		E
F. Meter ΔH@ (inch water)		F
G. Meter Correction Factor, γ	0.9979	G
H. Assumed Moisture Content (%)	3	H
I. Nomograph Correction Factor, C_f	N/A	I
J. High Stack ΔP (inch water)		J
Average Stack ΔP (inch water)		
Low Stack ΔP (inch water)		
K. High Stack Temperature, t_s ($^\circ$F)		K
Average Stack Temperature, t_s ($^\circ$F)		
Low Stack Temperature, t_s ($^\circ$F)		
L. Ideal Probe Tip Diameter, Dn (inch)		L
M. Actual Probe Tip Diameter, Dn (inch)	0.245	M
N. Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)		N

TAPE H1
FILE -7

404.4
MT 37.8

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

DATE: 15 MAY 80
PLANT: 604
LOCATION: NARF PENSACOLA
PREP. BY: CKY

RUN NO.: SEF 6-7
STACK NO: SEF 6-7
SAMPLE BOX NO.: 5

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
6-	1. 100 ml		569.1	587.1	18.0	
6-	2. 100 ml		591.0	597.6	6.6	
6-	3. Dry		473.3	475.8	2.5	TOTAL
6-	4. 175 g silica gel		703.1	715.1	12	39.10

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

11ND-CBC-3960/71 (12-78)

TRAVERSE POINTS

CIRCULAR	Dia. 45 in.	Bldg. No. 604	Location NARF PENSACOLA
RECTANGULAR	Length in / Width in.	Date 15 MAY 80	Run Number SEF-6-7

Equivalent Diameter

$D_e = \frac{2LW}{L+W} =$ _____ in.

Length from downstream disturbance	7.5833	ft. 91"	Diameter from upstream disturbance	0.69	dia.
Diameters from downstream disturbance	2.02	dia.	Required number of traverse points	48	ea.
Length from upstream disturbance	2.5833	ft. 31"	Number of traverse points used	48	ea.

TRAVERSE POINT LOCATION

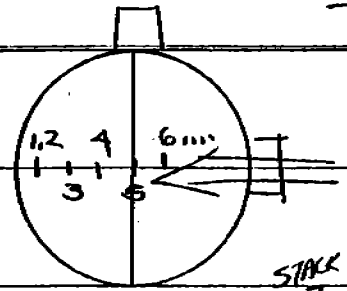
Point No.	Ideal Location (in) L	W	Actual Location (in) L	W	Point No.	Ideal Location (in) L	W	Actual Location (in) L	W
ARTWEST FROM 1	0.47		1 1/2		26	1.45		1 1/2	
PORT 2	1.45		1 1/2		27	2.48		2 1/2	
3	2.48		2 1/2		28	3.56		3 1/2	
4	3.56		3 1/2		29	4.71		4 3/4	
5	4.71		4 3/4		30	5.94		6	
6	5.94		6		31	7.27		7 1/4	
7	7.27		7 1/4		32	8.72		8 3/4	
8	8.72		8 3/4		33	10.35		10 3/8	
9	10.35		10 3/8		34	12.23		10 3/8	
10	12.23		12 1/4	WEST	35	14.55		10 3/8	NORTH
11	14.55		14 1/2	PORT	36	17.91		10 3/8	PORT
12	17.91		17 7/8		37	27.09		27 1/8	
13	27.09		27 1/8		38	30.45		30 1/2	
14	30.45		30 1/2		39	32.77		32 3/4	
15	32.77		32 3/4		40	35.65		35 5/8	
16	35.65		35 5/8		41	36.28		35 5/8	
17	36.28		36 1/4		42	37.73		35 5/8	
18	37.73		37 3/4		43	39.06		35 5/8	
19	39.06		39		44	40.29		35 5/8	
20	40.29		40 1/4		45	41.44		35 5/8	
21	41.44		41 1/2		46	42.55		35 5/8	
CLOSEST 22	42.52		42 1/2		47	43.55		35 5/8	
TO 23	43.55		43 1/2		48	44.53		35 5/8	
PORT 24	44.53		43 1/2		49				
25	0.47		1 1/2		50				

* ADJUSTED POINTS

→ NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NAS PENSACOLA		AMBIENT TEMPERATURE: 79	BAROMETRIC PRESSURE, IN HG: 29.87
OPERATOR: CARPENTER	DATE: 15 MAY 80		ASSUMED MOISTURE, %: 3	HEATER BOX SETTING: OFF
RUN NO.: SEF6-7	SAMPLE BOX NO.: 5		PROBE # (PITOT #): [redacted] 3-	PROBE LENGTH, in.: 36/[redacted]
METER BOX NO.: 3	METER $\Delta H_@$: 1.95		NOZZLE I.D. NO.: 1/4-4-INCONEL	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, C_P: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points) → STACK	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: INCONEL/[redacted]	LEAK RATE (CFM) @ " HG: 0.013 @ 25



TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
13	0 (935)	96.820	80	0.31	1.25	80	79	AMBIENT	69	2	AMBIENT	
14	2	98	80	0.33	1.3	80	80		62	2		
15	4	99	79	0.35	1.4	86	80		58	2		
16	6	100	78	0.375	1.55	94	80		56	2 1/2		
* 16	8	102	79	0.395	1.6	9[redacted]	81		56	2 1/2		
* 16	10	103	80	0.40	1.65	98	82		56	2 1/2		
* 16	12	104	80	0.41	1.7	101	83		57	2 1/2		
* 16	14	106	80	0.41	1.7	104	83		57	2 1/2		
* 16	16	108	80	0.41	1.7	108	84		58	2 1/2		
* 16	18	109	80	0.41	1.7	111	85		60	2 1/2		
* 16	20	110	80	0.40	1.7	113	86		60	2 1/2		
* 16	22	112	80	0.395	1.65	113	87		61	2 1/2		
TOTAL	24	113.696	TURN PACE @			STOP	CHANGE TO 5 FT PROBE					
AVERAGE	959		@ READ CLOCK @ READ METER									

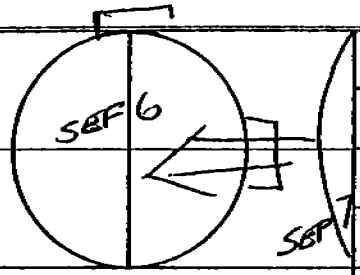
← ACTUAL POINT LOCATION

↑ TAPE # (9815)

* ADJUSTED POINTS

→ NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 79	BAROMETRIC PRESSURE, IN HG: —	
OPERATOR: CARPENTER	DATE: 15 MAY 80		ASSUMED MOISTURE, %: 3	HEATER BOX SETTING: OFF	
RUN NO.: SEF 6-7	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60	
METER BOX NO.: 3	METER ΔH@: 1.95		NOZZLE I.D. NO.: 1/4-4-INCONEL	NOZZLE DIAMETER, in.: 0.245	
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: — @ —

	TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
*	1	1000											
*	2	24 (14)	113.696	81	0.22	0.90	100	88	AMBIENT	70	1 3/4	AMBIENT	
	2	26	115	81	0.235	0.955	95	89		67	1 3/4		
	3	28 (15)	116	82	0.235	0.96	98	89		64	2		
	4	30 (16)	117	82	0.245	1.0	103	90		61	2		
	5	32 (17)	118	82	0.245	1.01	105	90		59	2		
	6	34 (18)	119	82	0.275	1.15	107	91		59	2		
	7	36 (19)	120	82	0.30	1.25	107	91		59	2 1/4		
	8	38 (20)	122	82	0.33	1.4	111	92		61	2 1/4		
	9	40 (21)	123	81	0.365	1.55	113	92		59	2 1/2		
*	9 10	42 (22)	125	82	0.365	1.55	115	93		61	2 1/2		
*	9 11	44 (23)	126	82	0.375	1.6	116	94		61	2 1/2		
*	9 12	46 (24)	127	82	0.37	1.55	117	94		61	2 1/2		
	TOTAL	48	128.932	CHANGE PORTS & READ CLOCK & READ METER									
	AVERAGE	1032		° TURN PAGE									

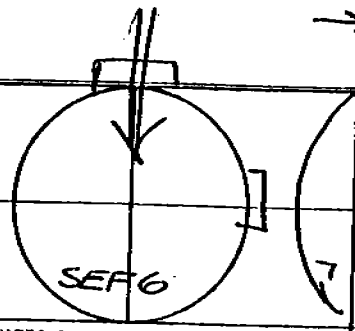
D-99

↑ ACTUAL POINT LOCATION
↑ ADJUSTED POINT #
↑ TAPE # (9815 NOMO TAPE)

* ADJUSTED POINTS

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

→ NORTH

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 79	BAROMETRIC PRESSURE, IN HG: —
OPERATOR: CARPENTER	DATE: 15 MAY 80		ASSUMED MOISTURE, %: 3	HEATER BOX SETTING: OFF
RUN NO.: SEP 6-7	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER $\Delta H_@$: 1.95		NOZZLE I.D. NO.: 1/4-4-INCONEL	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A -	PITOT COEFFICIENT, C_P: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX

LEAK RATE (CFM) — @ — in. Hg

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
1	1044											
* 25	0	128.932	81	0.40	1.65	97	91	AMBIENT	68	2½	AMBIENT	
2 26	2	131	80	0.40	1.65	99	93		64	2½		
3 27	4	132	79	0.39	1.6	99	94		56	2½		
4 28	6	133	79	0.39	1.6	105	94		55	2½		
5 29	8	135	79	0.385	1.6	111	95		56	2½		
6 30	10	136	79	0.38	1.6	113	95		57	2½		
7 31	12	137	79	0.385	1.65	115	95		57	2½		
8 32	14	139	79	0.37	1.55	117	96		57	2½		
9 33	16	140	79	0.37	1.55	117	96		56	2½		
10 34	18	140	78	0.37	1.6	118	97		55	2½		
11 35	20	142	78	0.355	1.5	118	97		56	2½		
12 36	22	144	77	0.35	1.5	119	98		56	2½		
TOTAL	24		TURN	PAGE								
AVERAGE												

0100

* ADJUSTED POINT

→ NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 79	BAROMETRIC PRESSURE, IN HG: 29.86
OPERATOR: CARPENTER	DATE: 15 MAY 80		ASSUMED MOISTURE, %: 3	HEATER BOX SETTING: OFF
RUN NO.: SEF 6-7	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER ΔH@: 1.95		NOZZLE I.D. NO.: 1/4-4-INCONEL	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: 0.009 @ 12

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
37	13–24	146	78	0.33	1.4	120	98	AMBIENT	58	2½	AMBIENT	
38	14–26	147	78	0.33	1.4	120	99		59	2½		
39	15–28	149	77	0.32	1.35	120	99		57	2¼		
40	16–30	150	76	0.34	1.45	121	100		56	2½		
41	17–32	151	77	0.32	1.35	120	101		58	2½		
42	18–34	153	77	0.325	1.4	121	101		60	2½		
43	19–36	154	78	0.31	1.35	121	102		62	2½		
44	20–38	155	77	0.325	1.4	121	102		62	2½		
45	21–40	157	77	0.315	1.35	121	102		61	2¼		
46	22–42	158	78	0.29	1.25	122	102		59	2¼		
47	23–44	159	78	0.27	1.15	123	103		58	2		
*48	24–46	161	78	0.255	1.1	123	103		58			
TOTAL	48	162.310	END OF TEST ✓ READ CLOCK ✓ READ BAROMETER									
AVERAGE	1132		✓ READ METER ✓ LEAK CHECK ✓ PTL									

PITOT

FILTER NOs		

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 1311

DATE 15 MAY 80

LOCATION 604 NARF PENSACOLA

RUN NO. 8

PLANT 604

STACK NO. SEF 6-8

SOURCE SEF-6-8

SAMPLE BOX NO. 4

A.	Stack Pressure, P_s (inch water)	-.021 A
B.	Barometric Pressure, P_b (inch Hg)	B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m ($^\circ$F), $t_{ambient}$ + 30	E
F.	Meter $\Delta H@$ (inch water)	1.95 F
G.	Meter Correction Factor, γ	0.9979 ~~1.95~~ G
H.	Assumed Moisture Content (%)	3 H
I.	Nomograph Correction Factor, C_f	~~3~~ I
J.	High Stack ΔP (inch water)	J
	Average Stack ΔP (inch water)	
	Low Stack ΔP (inch water)	
K.	High Stack Temperature, t_s ($^\circ$F)	K
	Average Stack Temperature, t_s ($^\circ$F)	
	Low Stack Temperature, t_s ($^\circ$F)	
L.	Ideal Probe Tip Diameter, Dn (inch)	L
M.	Actual Probe Tip Diameter, Dn (inch)	0.245 M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	N

444
MT 36.8

PARTICULATE SAMPLE BOX SET UP CHECKLIST

DATE: _____

PLANT: _____ RUN NO.: _____

LOCATION: _____ STACK NO: _____

PREP. BY: _____ SAMPLE BOX NO.: 4

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
4	1. 100 ml		595.7	611.3	15.6	
4	2. 100 ml		594.7	603.9	9.2	
4	3. Dry		524.7	528.5	3.8	TOTAL
4	4. 175 g silica gel		706.7	719.4	12.7	41.3

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

11ND-CBC-3960/71 (12-78)

TRAVERSE POINTS

CIRCULAR	Dia. 45 in.	Bldg. No. 604	Location NARF PENSACOLA
RECTANGULAR	Length in / Width in.	Date 15 MAY 80	Run Number SEF-6

Equivalent Diameter

$D_e = \frac{2LW}{L+W}$ = _____ in.

31 91

Length from downstream disturbance	75833 ft.	Diameter from upstream disturbance	0,69 dia.
Diameters from downstream disturbance	2.02 dia.	Required number of traverse points	ea.
Length from upstream disturbance	2,5833 ft.	Number of traverse points used	ea.

TRAVERSE POINT LOCATION

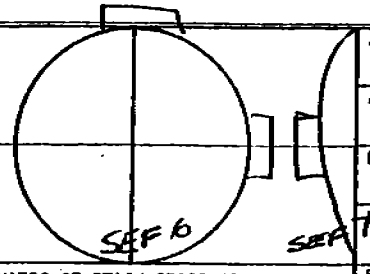
Point No.	Ideal Location (in) L	Ideal Location (in) W	Actual Location (in) L	Actual Location (in) W	Point No.	Ideal Location (in) L	Ideal Location (in) W	Actual Location (in) L	Actual Location (in) W
1	0.47	1 1/2			26				
2	1.45	1 1/2			27				
3	2.48	2 1/2			28				
4	3.56		3 1/2		29				
5	4.71		4 3/4		30				
6	5.94		6		31				
7	7.27		7 1/4		32				
8	8.72		8 3/4		33				
9	10.35		10 3/8		34				
10	12.23		12 1/4		35				
11	14.55		14 1/2		36				
12	17.91		17 7/8		37				
13	27.09		27 1/8		38				
14	30.45		30 1/2		39				
15	32.77		32 3/4		40				
16	35.65		35 5/8		41				
17	36.28		36 1/4		42				
18	37.73		37 3/4		43				
19	39.06		39		44				
20	40.29		40 1/4		45				
21	41.44		41 1/2		46				
22	42.52		42 1/2		47				
23	43.65		43 1/2		48				
24	44.53		43 1/2		49				
25					50				

* ADJUSTED POINT

→ NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.88
OPERATOR: CARPENTER	DATE: 15 MAY 80		ASSUMED MOISTURE, %: 3	HEATER BOX SETTING: OFF
RUN NO.: SEF 6-8	SAMPLE BOX NO.: 4		PROBE # (PITOT #): 3-	PROBE LENGTH, in.: 36
METER BOX NO.: 3	METER $\Delta H_@$: 1.95		NOZZLE I.D. NO.: 1/4-4-INCONEL	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: INCONEL	LEAK RATE (CFM) @ " HG: 0.009 @ 21



TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
13	1311 0	162.674	85	0.32	1.3	89	89	AMBIENT	70	4 1/2	AMBIENT	
14	2 2	164	85	0.325	1.3	90	89		67	4 1/2		
15	4 3	165	85	0.35	1.4	94	90		63	4 3/4		
16 17	6 4 5	166	84	0.41	1.65	99	90		63	6		
*16 18	8 6	168	85	0.415	1.7	104	90		63	6		
*16 19	10 7	169	87	0.415	1.7	108	91		66	6		
*16 20	12 8	170	86	0.415	1.7	111	91		66	6		
*16 21	14 9	172	86	0.415	1.75	114	92		66	6		
*16 22	16 10	174	86	0.405	1.7	116	93		69	6		
*16 23	18 11	175	86	0.405	1.7	118	94		69	6		
*16 24	20 12	177	87	0.400	1.7	120	95		72	6		
*16	22	178	87	0.405	1.7	122	95		72	6		
TOTAL	24	179.921	CHANGE PROBES & READ CLOCK & READ METER									
AVERAGE	1335		TURN PAGE									

D-105

↖ ACTUAL POINT LOCATION

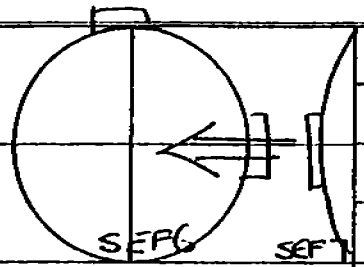
↑ ADJUSTED POINT #

↑ HP TAPE # (NOMO PROGRAM II FILE 8)

*ADJUSTED POINTS

→ NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: —
OPERATOR: CARPENTER	DATE: 15 MAY 80		ASSUMED MOISTURE, %: 3	HEATER BOX SETTING: OFF
RUN NO.: SCF 6-8	SAMPLE BOX NO.: 4		PROBE # (PITOT #): 5-S	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER ΔH@: 1.95		NOZZLE I.D. NO.: 1/4-4-INCONEL	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX

LEAK RATE (CFM) @ " HG: — @ —

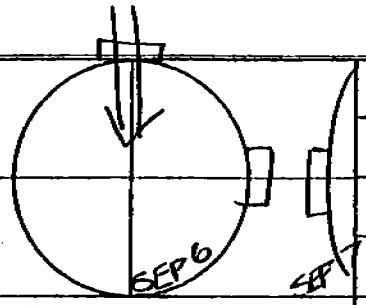
TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
*2 1	24 1342	179.921	91	0.23	0.935	106	96	AMBIENT	72	3 1/2	AMBIENT	
2 14	26	181	92	0.225	0.915	107	97		72	3 1/2		
3 15	28	182	92	0.235	0.965	110	98		70	3 1/2		
4 16	30	183	92	0.24	0.99	112	99		68	3 3/4		
5 17	32	184	92	0.26	1.05	114	99		67	4		
6 18	34	185	92	0.28	1.15	117	99		66	4 1/4		
7 19	36	187	92	0.31	1.3	120	99		66	4 1/2		
8 20	38	188	93	0.33	1.4	122	101		68	4 3/4		
9 21	40	189	94	0.365	1.55	124	102		69	5 1/4		
*9 10 22	42	191	94	0.37	1.55	125	103		68	5 1/4		
*9 11 23	44	192	94	0.375	1.6	127	103		68	5 1/4		
*9 12 24	46	193	94	0.375	1.6	128	104		67	5 1/4		
TOTAL	48	195.216	CHANGE PORTS @			READ	CLOCK & READ METER					
AVERAGE	1408		TURN	PAGE								

D-106

* ADJUSTED POINT

→ NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: —
OPERATOR: CARPENTER	DATE: 15 MAY 80		ASSUMED MOISTURE, %: 3	HEATER BOX SETTING: OFF
RUN NO.: SEF 6-8	SAMPLE BOX NO.: 4		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER $\Delta H_@$: 1.95		NOZZLE I.D. NO.: 1/4-4-INCONEL	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX

LEAK RATE (CFM) @ " HG: — @ —

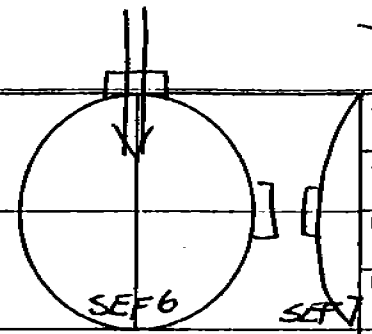
TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
1	1424 / 0											
*25	0	195.216	90	0.38	1.55	107	103	AMBIENT	72	5 1/4	AMBIENT	
2 26	2	197	90	0.37	1.5	109	104		63	5 1/4		
3 27	4	198	91	0.37	1.55	~~109~~ 113	105		57	5 1/4		
4 28	6	199	91	0.37	1.55	116	105		58	5 1/4		
5 29	8	201	91	0.37	1.55	120	105		57	5 1/4		
6 30	10	202	91	0.365	1.55	122	105		60	5 1/4		
7 31	12	203	~~91~~ 91	0.365	1.55	124	106		62	5 1/4		
8 32	14	205	90	0.365	1.55	125	106		63	5 1/4		
9 33	16	206	90	0.365	1.55	127	106		63	5 1/4		
10 34	18	208	90	0.36	1.55	129	106		64	5 1/4		
11 35	20	209	91	0.36	1.55	129	107		65	5 1/4		
12 36	22 / 24	211	91	0.356	1.5	130	108		67	5 1/4		
TOTAL	24		TURN	PACE								
AVERAGE												

↑ POINT # ON RAIL

D-107

* ADJUSTED POINT

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)



PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.87
OPERATOR: CARPENTER	DATE: 15 MAY 80		ASSUMED MOISTURE, %: 3	HEATER BOX SETTING: OFF
RUN NO.: SEF 6-8	SAMPLE BOX NO.: 4		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER ΔH@: 1.95		NOZZLE I.D. NO.: 1/4-4-INCONEL	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: 0.001 @ 16 1/2

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
13 37	24	212	92	0.35	1.5	131	108	AMBIENT	68	5 1/4	AMBIENT	
14 38	26	214	92	0.35	1.5	132	109		69	5 1/4		
15 39	28	215	93	0.35	1.5	132	109		70	5 1/4		
16 40	30	216	93	0.340	1.45	133	109		70	5		
17 41	32	218	95	0.34	1.45	133	110		72	5		
18 42	34	219	96	0.335	1.4	134	111		72	4 3/4		
19 43	36	221	96	0.33	1.4	135	111		72	4 3/4		
20 44	38	222	97	0.325	1.4	135	112		70	4 3/4		
21 45	40	223	98	0.320	1.35	135	112		70	4 3/4		
22 46	42	224	98	0.32	1.35	135	113		69	4 3/4		
23 47	44	226	98	0.315	1.35	135	113		70	4 3/4		
*24 48	46	227	97	0.31	1.3	136	114		70	4 1/2		
TOTAL	480	228.794	END OF TEST @ READ CLOCK @ READ METER									
AVERAGE	1512		@ READ BAROMETER @ LEAK CHECK @ PTL									

D-108

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 757

DATE 16 MAY 80

LOCATION 604 NARF PENSACOLA

RUN NO. SEF 6-9

PLANT 604

STACK NO. SEF 6

SOURCE SEF 6

SAMPLE BOX NO. 5

A.	Stack Pressure, P_s (inch water)	-0.2 A
B.	Barometric Pressure, P_b (inch Hg)	- B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	- C
D.	P_s/P_b	- D
E.	Meter Temperature, t_m ($^\circ$F), $t_{ambient} + 30$	- E
F.	Meter ΔH@ (inch water)	1.95 F
G.	Meter Correction Factor, γ	0.9979 G
H.	Assumed Moisture Content (%)	3.2 H
I.	Nomograph Correction Factor, C_f	N/A I
J.	High Stack ΔP (inch water)	- J
	Average Stack ΔP (inch water)	-
	Low Stack ΔP (inch water)	-
K.	High Stack Temperature, t_s ($^\circ$F)	- K
	Average Stack Temperature, t_s ($^\circ$F)	-
	Low Stack Temperature, t_s ($^\circ$F)	-
L.	Ideal Probe Tip Diameter, Dn (inch)	- L
M.	Actual Probe Tip Diameter, Dn (inch)	0.245 M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	- N

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

472.5
MT 30.5

DATE: 16 MAY 80
PLANT: GA
LOCATION: LARF PENSACOLA
PREP. BY: CRY

RUN NO.: SEF 6-9
STACK NO: SEF-6
SAMPLE BOX NO.: 5

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
6-	1. 100 ml		568.4	593.8	25.4	
6-	2. 100 ml		594.9	599.9	5	
6-	3. Dry		473.2	474.8	1.6	TOTAL
6-	4. 175 g silica gel		709.4	719.6	10.2	42.2

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

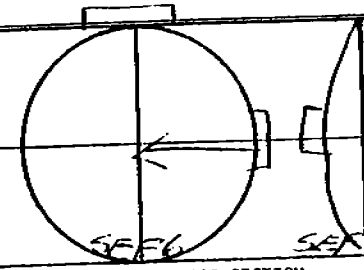
( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

* ADJUSTED POINT

→ NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NARF PENSACOLA	AMBIENT TEMPERATURE: 81	BAROMETRIC PRESSURE, IN HG: 29.88
OPERATOR: CARPENTER	DATE: 15 MAY 80	ASSUMED MOISTURE, %: 3.2	HEATER BOX SETTING: OFF
RUN NO.: SEF 6-9	SAMPLE BOX NO.: 4	PROBE # (PITOT #): 3	PROBE LENGTH, in.: 36
METER BOX NO.: 3	METER ΔH@: 1.95	NOZZLE I.D. NO.: 1/4-4-INCONEL	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: INCONEL
			LEAK RATE (CFM) @ " HG: 0.014 @ 25



SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)

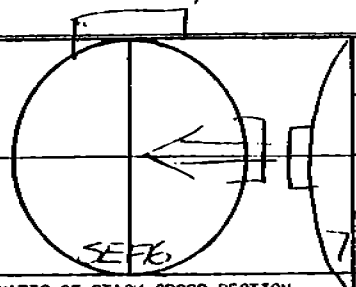
TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER Inlet (T_{min}) °F	Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
13	757 / 0	228.198	81	0.315	1.25	82	81	AMBIENT	67	2½	AMB	ENT
14	2 / 2	229	84	0.33	1.30	83	81		64	2½		
15	4 / 3	230	84	0.36	1.45	87	81		62	2¾		
16	6 / 4	232	84	0.41	1.65	93	82		58	3		
* 16 / 17	8 / 5	233	84	0.405	1.65	96	82		58	3		
* 16 / 18	10 / 6	235	84	0.415	1.7	101	83		57	3		
* 16 / 19	12 / 7	236	84	0.405	1.65	106	83		57	3		
* 16 / 20	14 / 8	237	84	0.41	1.7	109	84		58	3		
* 16 / 21	16 / 9	239	84	0.42	1.75	112	85		58	3		
* 16 / 22	18 / 10	241	84	0.42	1.75	115	86		61	3		
* 16 / 23	20 / 11	242	85	0.42	1.75	116	87		62	3		
* 16 / 24	22 / 12	243	85	0.415	1.75	118	88		63	3		
TOTAL	24	245.225	CHANGE	TO	5 FT	PROBE	⌀	READ CLOCK	⌀	READ METER		
AVERAGE	820		TURN	PAGE								

ACTUAL POINT LOCATION
– ADJUSTED POINT NUMBER
[illegible] PROGRAM II FILE 8 TABLE 1)

* ADJUSTED POINTS

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

→ NORTH



PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 81	BAROMETRIC PRESSURE, IN HG: —	
OPERATOR: CARPENTER	DATE: 15 MAY 80		ASSUMED MOISTURE, %: 3,2	HEATER BOX SETTING: OFF	
RUN NO.: SEF 6-9	SAMPLE BOX NO.: 4		PROBE # (PITOT #): 3	PROBE LENGTH, in.: 60	
METER BOX NO.: 3	METER ΔH@: 1.95		NOZZLE I.D. NO.: 1/4-4-TYCONEL	NOZZLE DIAMETER, in.: 0.245	
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: PYREX	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " Hg: — @ —

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
1	808											
2	24	245.225	86	0.225	0.915	103	90	AMBIENT	71	2	AMBIENT	
14												
2	26	246	86	0.225	0.925	107	91		68	2		
15												
3	28	247	86	0.225	0.925	109	92		60	2		
16												
4	30	248	86	0.23	0.95	112	93		58	2		
17												
5	32	249	86	0.23	0.955	113	94		60	2		
18												
6	34	251	86	0.25	1.05	115	94		61	2¼		
19												
7	36	252	86	0.27	1.25	117	95		62	2¾		
20												
8	38	253	87	0.295	1.25	120	96		62	2¾		
21												
9	40	254	87	0.34	1.45	121	97		61	3		
* 9 10	42	22 256	87	0.34	1.45	123	98		59	3		
* 9 11	44	23 257	87	0.335	1.4	125	98		57	3		
* 9 12	46	24 258	89	0.345	1.45	127	99		61	3		
TOTAL	48	259.980	CHANGE PORT & READ CLOCK & END METER									
AVERAGE	854		TURN	PAGE								

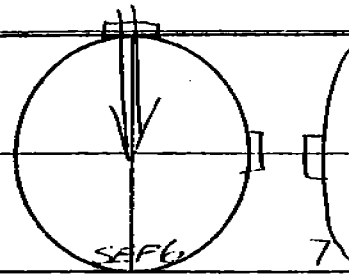
D-112

↑ ADJUSTED POINT #
↑ HP TARE #

* ADJUSTED POINTS

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

→ NORTH

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: —
OPERATOR: CARPENTER	DATE: 16 MAY 80		ASSUMED MOISTURE, %: 3.2	HEATER BOX SETTING: OFF
RUN NO.: SEF 6-9	SAMPLE BOX NO.: 4		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 6.0
METER BOX NO.: 3	METER ΔH@: 1.95		NOZZLE I.D. NO.: 1/4 - 4 - INCONEL	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX

LEAK RATE (CFM) @ — in HG: —

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
25 1	SEF1 0	259.980	90	0.45	1.85	111	100	AMBIENT	66	3 1/4	AMB	EAU
26 2	2	261	90	0.45	1.85	116	102		65	3 1/4		
27 3	4	263	90	0.46	1.9	119	103		61	3 1/4		
28 4	6	264	91	0.455	1.9	121	104		60	3 1/4		
29 5	8	266	91	0.43	1.8	124	104		62	3 1/4		
30 6	10	267	91	0.43	1.8	126	105		65	3 1/4		
31 7	12	269	92	0.43	1.8	128	105		67	3 1/4		
32 8	14	271	92	0.42	1.75	128	105		67	3		
33 9	16	272	92	0.405	1.7	129	106		67	3		
34 10	18	274	92	0.38	1.6	129	107		68	3		
35 11	20	275	92	0.355	1.5	130	107		68	3		
36 12	22	276	92	0.355	1.4	130	108		69	2 3/4		
TOTAL	24		TURN PAGE									
AVERAGE												

POINT # ON RAIL

D-113

* ADJUSTED POINT

→ NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 81	BAROMETRIC PRESSURE, IN HG: 29.90
OPERATOR: CARPENTER	DATE: 16 MAY 80		ASSUMED MOISTURE, %: 3.2	HEATER BOX SETTING: OFF
RUN NO.: SEF 6-9	SAMPLE BOX NO.: 4		PROBE # (PITOT #): 5-5	PROBE LENGTH, in.: 60
METER BOX NO.: 3	METER ΔH@: 1.95		NOZZLE I.D. NO.: ¼-4-INCONEL	NOZZLE DIAMETER, in.: 0.245
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: 0.008 @ 15

SEF6

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
13 37	24	278	92	0.315	1.35	130	108	AMBIENT	67	2 3/4	AMBIENT	
14 38	26	279	92	0.295	1.25	130	109		68	2 3/4		
15 39	28	280	93	0.305	1.3	131	109		66	2 3/4		
16 40	30	281	94	0.295	1.25	131	110		66	2 3/4		
17 41	32	283	94	0.29	1.2	131	110		66	2 1/2		
18 42	34	284	95	0.29	1.2	131	111		66	2 1/2		
19 43	36	285	95	0.29	1.2	131	111		67	2 1/2		
20 44	38	287	96	0.28	1.15	131	111		68	2 1/2		
21 45	40	288	96	0.28	1.15	131	112		67	2 1/2		
22 46	42	289	97	0.265	1.1	131	112		67	2 1/2		
23 47	44	290	97	0.23	0.965	131	112		67	2 1/4		
24 48	46	292	97	0.26	1.1	131	113		67	2 1/2		
TOTAL	48	293.286	END OF TEST & READ METER & READ CLOCK									
AVERAGE	947		& READ BAROMETER & LEAK CHECK & P.T.									

D-114

TAPE 1 FILE -9

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME _____

DATE 15 MAY 8C

LOCATION NAVF PENSACOLA

RUN NO. SEF-10

PLANT 604

STACK NO. SEF 7

SOURCE PLATING SHOP

SAMPLE BOX NO. 1

A. Stack Pressure, P_s (inch water)	-10	A
B. Barometric Pressure, P_b (inch Hg)	29.37	B
C. Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$		C
D. P_s/P_b		D
E. Meter Temperature, t_m (^oF), $t_{ambient}$ + 30		E
F. Meter $\Delta H@$ (inch water)	1.9314	F
G. Meter Correction Factor, γ	1.0001	G
H. Assumed Moisture Content (%)	2	H
I. Nomograph Correction Factor, C_f		I
J. High Stack ΔP (inch water)		J
Average Stack ΔP (inch water)	.27	
Low Stack ΔP (inch water)		
K. High Stack Temperature, t_s (^oF)		K
Average Stack Temperature, t_s (^oF)	53	
Low Stack Temperature, t_s (^oF)		
L. Ideal Probe Tip Diameter, Dn (inch)	.233	L
M. Actual Probe Tip Diameter, Dn (inch)	.248	M
N. Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)		N

11ND-CBC-3960/68 (11-78)

MT 422.1
↳ 36.2

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

DATE: ISMAY 80
PLANT: CC4
LOCATION: NARF PENSACOLA
PREP. BY: VEE

RUN NO.: SEF 7-10
STACK NO: SEF 7
SAMPLE BOX NO.: 1

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
1	1. 100 ml		628.8	643.7	14.9	
1	2. 100 ml		608.2	614.5	6.3	
1	3. Dry		478.9	481.3	2.4	TOTAL
1	4. 175 g silica gel		720.8	732.5	11.7	35.3

Filter No	Tare	Final	Net	
				TOTAL

(X) 7. Assemble flask, cyclone, and filter holder.

(X) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

TRAVERSE POINTS

CIRCULAR	Dia. 12 in.	Bldg. No. 604	Location NAF PENSACOLA
RECTANGULAR	Length in | Width in.	Date 15 Mar 83	Run Number [illegible]

Equivalent Diameter

$$D_e = \frac{2LW}{L+W} = \text{\_\_\_\_\_ in.}$$

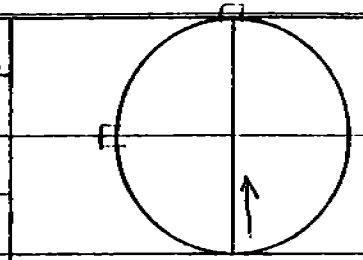
Length from downstream disturbance	10.33 ft.	Diameter from upstream disturbance	dia.
Diameters from downstream disturbance	dia.	Required number of traverse points	ea.
Length from upstream disturbance	2.42 ft.	Number of traverse points used	ea.

TRAVERSE POINT LOCATION

Point No.	Ideal Location (in) L	Ideal Location (in) W	Actual Location (in) L	Actual Location (in) W	Point No.	Ideal Location (in) L	Ideal Location (in) W	Actual Location (in) L	Actual Location (in) W
1	.51		1/2		26				
2	1.55		1 1/2		27				
3	2.65		2 5/8		28				
4	3.8		3 3/4		29				
5	5.03		5		30				
6	6.32		6 3/8		31				
7	7.75		7 3/4		32				
8	9.3		9 1/4		33				
9	11.04		11		34				
10	13.05		13		35				
11	15.51		15 1/2		36				
12	19.1		19 1/8		37				
13	25.9		25 7/8		38				
14	32.49		32 1/2		39				
15	34.95		35		40				
16	36.96		37		41				
17	38.7		38 3/4		42				
18	40.25		40 1/4		43				
19	41.66		41 5/8		44				
20	42.97		43		45				
21	44.2		44 1/4		46				
22	45.35		45 3/8		47				
23	46.45		45 3/8	*	48				
24	47.49		45 3/8	*	49				
25					50				

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604	LOCATION: NAVF Pensacola		AMBIENT TEMPERATURE: 70	BAROMETRIC PRESSURE, IN HG: 29.87	
OPERATOR: Hickenbottom	DATE: 15 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —	
RUN NO.: SEF 7-16	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 60	
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .245	
C FACTOR (Nomograph): —	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: —	PROBE LINER MATERIAL: PYREX	LEAK RATE (CFM) @ " HG: .006 @ 15

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN (1000)	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F.	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
1*	0	502.6	84	.33	1.38	80	80	AMBIENT	69	2	AMBIENT	
2	2	503.9	86	.33	1.39	83	80		69	2		
3	4	505.2	85	.33	1.40	87	80		67	2		
4	6	506.52	85	.33	1.41	92	80		66	2		
5	8	507.87	85	.33	1.42	96	81		66	2		
6	10	509.22	85	.32	1.38	100	81		67	2		
7	12	510.54	85	.31	1.33	105	82		68	2		
8	14	511.86	85	.30	1.29	108	83		69	2		
9	16	513.2	85	.30	1.32	113	84		70	3		
10	18	514.48	85	.29	1.29	114	85		70	3		
11	20	515.77	85	.28	1.25	116	86		70	3		
12	22	517.01	85	.27	1.21	118	87		70	3		
TOTAL												
AVERAGE												

D-118

* ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604	LOCATION: NAS Pensacola		AMBIENT TEMPERATURE: 75	BAROMETRIC PRESSURE, IN HG: 29.87	
OPERATOR: Hickenbottom	DATE: 15 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —	
RUN NO.: SEF 7-10	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 60	
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248	
C FACTOR (Nomograph): —	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING	PROBE LINER MATERIAL: Pyrex	LEAK RATE (CFM) @ " HG: @

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
13	24	518.35	85	.24	1.08	120	88	AMBIENT	71	5		
14	26	519.58	85	.24	1.08	120	90		71	3		
15	28	520.8	85	.26	1.17	122	91		70	3		
16	30	522.04	85	.26	1.17	123	92		70	3		
17	32	523.32	85	.26	1.17	124	93		69	3		
18	34	524.58	85	.21	1.22	125	94		69	3		
19	36	525.81	85	.28	1.27	126	95		69	3		
20	38	527.16	86	.27	1.23	128	96		70	3		
21	40	528.48	86	.27	1.23	128	97		70	3		
22	42	529.77	86	.26	1.18	128	98		70	3		
23 *	44	531.07	86	.25	1.13	128	98		70	3		
24 *	46	532.33	86	.25	1.13	128	98		70	3		
TOTAL	48											
AVERAGE												

D-119

*ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NAVY PENSACOLA	NORTH	AMBIENT TEMPERATURE: 75	BAROMETRIC PRESSURE, IN HG: 29.87
OPERATOR: HICKENBOTTOM	DATE: 15 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: SEF 7-10	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph): —	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: -	PROBE LINER MATERIAL: PYREX
				LEAK RATE (CFM) @ " HG: ●

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER Inlet (T min) °F	Outlet (T mout) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
25*	0	533.517	86	.30	1.27	89	89	AMBIENT	70	3	AMBIENT	
26	2	535.0	86	.29	1.24	92	91		68	3		
27	4	536.18	86	.29	1.25	97	91		66	3		
28	6	537.47	87	.28	1.21	102	91		65	3		
29	8	538.14	87	.27	1.18	108	91		66	3		
30	10	540.01	87	.26	1.15	112	92		67	3		
31	12	541.27	87	.26	1.15	115	92		69	3		
32	14	542.53	87	.25	1.11	117	93		70	3		
33	16	543.77	87	.25	1.12	120	94		70	3		
34	18	545.02	87	.24	1.08	122	95		71	3		
35	20 **	546.244	88	.24	1.05	111	96		69	3		
36	22	547.46	88	.24	1.05	114	97		70	3		
TOTAL												
AVERAGE												

** CHANGE PROBES

* ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604	LOCATION: NARF Pensacola		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.86
OPERATOR: Hickenbottom	DATE: 15MAY80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: --
RUN NO.: SFF 1-10	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .218
C FACTOR (Nomograph): —	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: -	PROBE LINER MATERIAL: Pyrex	LEAK RATE (CFM) @ " HG: .005 @ 6

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
37	24	548.68	88	.25	1.22	118	97	AMBIENT	70	3	AMBIENT	
38	26	549.9	88	.26	1.16	121	98		71	3		
39 *	28	551.2	88	.27	1.21	123	99		71	3		
40 *	30	552.41	88	.28	1.26	125	99		70	3		
41 *	32	553.75	88	.28	1.26	127	101		70	3		
42 *	34	555.05	88	.28	1.27	129	102		70	3		
43 *	36	556.31	88	.28	1.21	131	103		71	3		
44 *	38	558.	90	.28	1.27	132	104		71	3		
45 *	43	559.0	89	.28	1.21	133	105		71	3		
46 *	42	560.33	89	.28	1.28	134	105		70	3		
47 *	44	561.64	90	.28	1.28	135	106		70	3		
48 *	46	563	89	.28	1.28	136	107		69	3		
TOTAL	48	564.39										
AVERAGE												

* ADJUSTED

EPA 1221

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 1325

DATE 15 MAY 90

LOCATION NARF PENSACOLA

RUN NO. SEF 7 - 11

PLANT 6C4

STACK NO. SEF 7

SOURCE Plating Shop

SAMPLE BOX NO. 6

A.	Stack Pressure, P_s (inch water) →	-.1 A
B.	Barometric Pressure, P_b (inch Hg) →	29.88 B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m (°F), $t_{ambient}$ + 30	E
F.	Meter $\Delta H@$ (inch water)	F
G.	Meter Correction Factor, δ	G
H.	Assumed Moisture Content (%)	2 H
I.	Nomograph Correction Factor, C_f →	I
J.	High Stack ΔP (inch water)	J
	Average Stack ΔP (inch water)	.27
	Low Stack ΔP (inch water)	
K.	High Stack Temperature, t_s (°F)	K
	Average Stack Temperature, t_s (°F)	87
	Low Stack Temperature, t_s (°F)	
L.	Ideal Probe Tip Diameter, Dn (inch)	L
M.	Actual Probe Tip Diameter, Dn (inch) →	.248 M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	N

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

MT 611.8 36.3

DATE: 15 MAY 86
PLANT: GCA
LOCATION: NARF PENSACOLA
PREP. BY: YEE

RUN NO.: SEF 7-11
STACK NO: SEF 1
SAMPLE BOX NO.: 6

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
2	1. 100 ml		624.3	645.1	20.8	
2	2. 100 ml		577.4	580.0	2.6	
2	3. Dry		518.7	522.7	4.0	TOTAL
2	4. 175 g silica gel		699.9	713.5	13.6	41.0

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

11ND-CBC-3960/47 (REV. 11-78)

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 6024	LOCATION: NNRF PENSACOLA		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.85
OPERATOR: HICKEY/BOTTOM	DATE: 15 MAY 86		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: -
RUN NO.: SEF 7-11	SAMPLE BOX NO.: 6		PROBE # (PITOT #): 5.6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph):	PITOT COEFFICIENT, Cp: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: -	PROBE LINER MATERIAL: PYREX / LEAK RATE (CFM) @ " HG: 0.005 @ 15

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F.	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
1 *	0 / 1335	564.56	90	.32	1.37	97	97	AMBIENT	71	3	NOT TESTED	
2	2	565.81	90	.32	1.38	103	99		71	3		
3	4	567.18	90	.33	1.44	109	98		67	3		
4	6	568.52	90	.33	1.45	114	98		64	3		
5	8	569.87	90	.32	1.42	120	99		62	3		
6	10	571.24	90	.31	1.39	124	99		61	3		
7	12	572.6	91	.31	1.39	128	100		62	3		
8	14	573.96	91	.30	1.36	131	102		63	3		
9	16	575.3	91	.29	1.33	134	102		61	3		
10	18	576.65	91	.29	1.33	137	103		60	3		
11	20	577.99	91	.28	1.28	140	105		60	3		
12	22 / 1357	579.31	91	.26	1.20	141	105		59	3		
TOTAL												
AVERAGE												

PT-124

* ADJUSTED

NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT 604	LOCATION NAVY PENSACOLA		AMBIENT TEMPERATURE 80	BAROMETRIC PRESSURE, IN HG 29.88
OPERATOR HICKENBOTTOM	DATE 15 MAY 86		ASSUMED MOISTURE, % 2	HEATER BOX SETTING —
RUN NO. SEF 7-11	SAMPLE BOX NO. 6		PROBE # (PITOT #) 5-6	PROBE LENGTH, in. 60
METER BOX NO. 4	METER ΔH@ 1.9314		NOZZLE I.D. NO. 3	NOZZLE DIAMETER, in. .248
C FACTOR (Nomograph)	PITOT COEFFICIENT, CP .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING	PROBE LINER MATERIAL PYREX / LEAK RATE(CFM) @ " HG

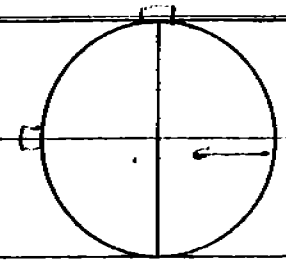
TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER Inlet (T min) °F.	Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
13	24	580.6	91	.23	1.06	143	106	AMBIENT	59	3	AMBIENT	
14	26	581.81	91	.24	1.11	143	107		60	3		
15	28	583.06	91	.25	1.15	143	108		59	3		
16	30	584.4	91	.26	1.20	145	109		59	3		
17	32	585.62	90	.27	1.25	145	109		59	3		
18	34	586.95	90	.27	1.25	146	110		59	3		
19	36	588.28	91	.27	1.25	147	111		61	3		
20	38	589.6	91	.26	1.21	148	112		61	3		
21	40	590.93	91	.26	1.21	149	113		61	3		
22	42	591.22	91	.25	1.16	149	113		61	3		
23*	44	593.61	91	.25	1.17	150	114		61	3		
24*	46	594.82	91	.25	1.17	150	115		61	3		
TOTAL	48	5960										
AVERAGE												

* ADJUSTED

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604	LOCATION: NARF Pensacola	AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.88
OPERATOR: Hickenbottom	DATE: 15 MAY 80	ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: -
RUN NO.: SEF 7-11	SAMPLE BOX NO.: 6	PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314	NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph): -	PITOT COEFFICIENT, CP: .84	PROBE HEATER SETTING: -	PROBE LINER MATERIAL: Pyrex
			LEAK RATE (CFM) @ " HG: @



SCHEMATIC OF STACK CROSS SECTION
(Show Traverse Points)

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER Inlet (T min) °F.	Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
25*	0	596.10	91	.29	1.30	127	115	AMBIENT	67	3	AMBIENT	
26	2	597.45	91	.29	1.31	130	115		67	3		
27	4	598.78	91	.28	1.27	133	115		54	3		
28	6	600.13	91	.27	1.23	137	115		53	3		
29	8	601.55	91	.27	1.24	141	115		55	3		
30	10	602.8	91	.27	1.25	143	115		55	3		
31	12	604.13	91	.25	1.15	145	116		56	3		
32	14	605.41	91	.25	1.16	147	116		56	3		
33	16	606.69	91	.25	1.16	147	116		57	3		
34	18	607.97	91	.24	1.12	148	117		57	3		
35	20	609.242	91	.24	1.12	148	117		57	3	*	**
36	22	610.5	91	.24	1.09	136	117		60	3		
TOTAL												
AVERAGE												

* ADJUSTED (WALL)

** Change to 3' probe

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604	LOCATION: NAVY Pensacola		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.87
OPERATOR: Hickenbottom	DATE: 15 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: —
RUN NO.: Sef 7-11	SAMPLE BOX NO.: 6		PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 60
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph): —	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: —	PROBE LINER MATERIAL:
				LEAK RATE (CFM) @ " HG: .008 @ 10

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER Inlet (T min) °F.	Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
37	24	611.75	91	.24	1.10	139	117	AMBIENT	58	3	AMBIENT	
38	26	612.99	91	.24	1.10	140	117		59	3		
39	28	614.26	91	.26	1.20	142	117		58	3		
40 *	30	615.5	91	.26	1.20	144	117		57	3		
41 *	32	616.83	91	.26	1.20	145	117		57	3		
42 *	34	618.13	91	.27	1.25	147	117		57	3		
43 *	36	619.45	91	.26	1.21	148	118		57	3		
44 *	38	620.75	91	.26	1.21	149	118		58	3		
45 *	40	622.07	91	.26	1.21	150	119		58	3		
46 *	42	623.37	91	.27	1.26	150	119		58	3		
47 *	44	624.68	91	.26	1.22	151	119		59	3		
48 *	46	626.0	91	.27	1.26	152	120		60	3		
TOTAL	48	627.322										
AVERAGE	1515											

* ADJUSTED DUE TO CLOSENESS OF SEF6 STACK

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 0800

DATE 16 MAY 86

LOCATION NARF PENSACOLA

RUN NO. SEF 7-12

PLANT 604

STACK NO. SEF 7

SOURCE

SAMPLE BOX NO. 1

A.	Stack Pressure, P_s (inch water) →	-.2 A
B.	Barometric Pressure, P_b (inch Hg) →	29.77 B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m (°F), $t_{ambient}$ + 30	E
F.	Meter $\Delta H@$ (inch water)	1.9514 F
G.	Meter Correction Factor, γ	1.0220 G
H.	Assumed Moisture Content (%)	3 H
I.	Nomograph Correction Factor, C_f →	I
J.	High Stack ΔP (inch water)	J
	Average Stack ΔP (inch water)	.27
	Low Stack ΔP (inch water)	
K.	High Stack Temperature, t_s (°F)	K
	Average Stack Temperature, t_s (°F)	91
	Low Stack Temperature, t_s (°F)	
L.	Ideal Probe Tip Diameter, Dn (inch)	.235 L
M.	Actual Probe Tip Diameter, Dn (inch) →	.247 M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	N

789.2
MT 36.7

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

DATE: 16 MAY 8[illegible]
PLANT: [illegible]
LOCATION: NAFF Pensacola
PREP. BY: YEE

RUN NO.: SEF 7 - 12
STACK NO: SEF -
SAMPLE BOX NO.: 1

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
1-	1. 100 ml		630.8	650.4	19.6	
1-	2. 100 ml		608.4	614.0	5.6	
1-	3. Dry		478.9	480.8	1.9	TOTAL
1-	4. 175 g silica gel		724.0	733.4	9.4	

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

11ND-CBC-3960/47 (REV. 11-78)

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604	LOCATION: NARF Roosevelt		AMBIENT TEMPERATURE: 75	BAROMETRIC PRESSURE, IN HG: 29.88
OPERATOR: Hickerson/Bottom	DATE: 16 Mar 80		ASSUMED MOISTURE, %: 3	HEATER BOX SETTING: -
RUN NO.: SEF 7-12	SAMPLE BOX NO.: 1		PROBE # (PITOT #): S-15	PROBE LENGTH, in.: 6.0
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .244
C FACTOR (Nomograph):	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: -	PROBE LINER MATERIAL: PYREX / LEAK RATE (CFM) @ " HG: .003 @ 15

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
1 *	0 / 0800	627.56	85	.31	1.27	83	83	AMBIENT	72	3	AMBIENT	
2	2	628.85	85	.33	1.38	87	82		68	3		
3	4	630.18	85	.34	1.42	91	84		60	3		
4	6	631.49	85	.34	1.42	97	84		59	3		
5	8	632.80	85	.33	1.40	101	85		60	3		
6	10	634.14	86	.33	1.41	106	86		63	3		
7	12	635.5	85	.31	1.33	109	86		64	3		
8	14	636.79	85	.30	1.30	112	87		65	3		
9	16	638.12	85	.29	1.26	115	88		65	3		
10	18	639.4	86	.27	1.18	117	90		65	3		
11	20	640.69	86	.26	1.14	119	91		65	3		
12	20	641.94	85	.24	1.06	121	92		65	3		
TOTAL												
AVERAGE												

D-130

* ADJACENT, close to wall

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604	LOCATION: [illegible]		AMBIENT TEMPERATURE: [illegible]	BAROMETRIC PRESSURE, IN HG: [illegible]
OPERATOR: [illegible]	DATE: 1 6 [illegible]		ASSUMED MOISTURE, %: [illegible]	HEATER BOX SETTING: -
RUN NO.: NF7-12	SAMPLE BOX NO.: 1		PROBE # (PITOT #): [illegible]	PROBE LENGTH, in.: [illegible]
METER BOX NO.: 4	METER ΔH@: 1.934		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .242
C FACTOR (Nomograph): -	PITOT COEFFICIENT, Cp: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: -	PROBE LINER MATERIAL: PYREX
				LEAK RATE (CFM) @ " HG: @

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
13	21	643.13	86	.23	1.01	122	93	Ambient	66	3	Ambient	
14	26	644.31	86	.25	1.10	123	95		66	3		
15	31	645.54	86	.26	1.15	124	96		66	3		
16	36	646.72	86	.24	1.09	121	97		66	3		
17	32	648.2	86	.29	1.29	123	98		66	3		
18	34	649.44	86	.24	1.09	120	99		65	3		
19	36	650.74	86	.28	1.26	131	101		64	3		
20	38	650.05	87	.21	1.01	130	102		65	3		
21	40	653.31	87	.26	1.61	133	103		65	3		
22	42	654.6	81	.24	1.07	133	104		66	3		
23 AA	44	655.83	86	.24	1.05	134	105		66	3		
24 *	46	657.04	81	.24	1.08	134	106		67	3		
TOTAL	48	658.20										
AVERAGE												

* Adjusted, (wall)
** Adjusted (port)

D-131

NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: Naff Pennsylvania		AMBIENT TEMPERATURE: [illegible]	BAROMETRIC PRESSURE, IN HG: 29.88
OPERATOR: Hickenbottom	DATE: 16 May 80		ASSUMED MOISTURE, %: 3	HEATER BOX SETTING:
RUN NO.: SCF 7-12	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 5-6	PROBE LENGTH, in.: 20
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 3	NOZZLE DIAMETER, in.: .248
C FACTOR (Nomograph):	PITOT COEFFICIENT, CP: 84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING:	PROBE LINER MATERIAL: [illegible] / LEAK RATE (CFM) @ " HG: @

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_e) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER Inlet (T min) °F.	Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
25	0	658.256	88	.29	1.25	111	106	Ambient	70	3		
26	2	659.5[illegible]	87	.28	1.21	113	106		69	3		
27	4	660.86	87	.27	1.18	118	106		65	3		
28	8	662.13	87	.25	1.10	122	107		65	3		
29	8	663.31	87	.24	1.06	125	107		66	3		
30	10	664.51	88	.24	1.06	128	107		67	3		
31	12	665.77	88	.23	1.02	130	108		68			
32	14	666.98	88	.23	1.03	132	108		68	3		
33	16	668.17	89	.24	1.07	133	109		67	3		
34	18	669.48	89	.24	1.07	135	110		66	3		
35 ◇	20	670.6	89	.25	1.10	123	109		69	3		
36	22	671.85	89	.24	1.06	127	110		67	3		
TOTAL												
AVERAGE												

◇ [illegible] probe [illegible]

SOURCE EMISSIONS TESTING DATA SHEET
1110-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT	LOCATION		AMBIENT TEMPERATURE	BAROMETRIC PRESSURE, IN HG
OPERATOR	DATE		ASSUMED MOISTURE, %	HEATER BOX SETTING
RUN NO.	SAMPLE BOX NO.		PROBE # (PITOT #)	PROBE LENGTH, in.
METER BOX NO.	METER ΔH@		NOZZLE I.D. NO.	NOZZLE DIAMETER, in.
C FACTOR (Nomograph)	PITOT COEFFICIENT, CP	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING	PROBE LINER MATERIAL / LEAK RATE (CFM) @ " HG

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F.	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
37 - 43	24	613.05	89	.21	1.06	121	110	AMBIENT	65	3	AVG	
38	26	674.2	89	.20	1.16	131	110		60	3		
39	28	685	89	.21	1.20	133	111		64	3		
40 A	30	696.8	89	.21	1.21	134	111		64	3		
41 A	32	678.1	89	.21	1.21	135	112		64	3		
42 A	34	679.4	89	.21	1.21	136	112		64	3		
43 A	36	680.7	84	.21	1.22	134	113		66	3		
44 A	38	682.0	90	.21	1.21	137	113		66	3		
45 A	40	683.3	90	.21	1.22	141	114		66	3		
46 A	42	684.62	90	.21	1.22	142	114		66	3		
47 A	44	686.01	90	.21	1.22	141	114		66	3		
48 A	46	687.21	90	.21	1.22	141	114		66	3		
TOTAL	48	688.22										
AVERAGE												

D-133

A AMBIENT [illegible]

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 0844

DATE 20 MAY 80

LOCATION NARF PENSACOLA

RUN NO. CN(8)-10 Run 2

PLANT 604

STACK NO. CN (8)

SOURCE CN (8) STACK

SAMPLE BOX NO. 6

A.	Stack Pressure, P_s (inch water) →	-0.06 A
B.	Barometric Pressure, P_b (inch Hg) →	B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m (°F), $t_{ambient}$ + 30	E
F.	Meter $\Delta H@$ (inch water)	F
G.	Meter Correction Factor, γ	0.9979 G
H.	Assumed Moisture Content (%)	3 H
I.	Nomograph Correction Factor, C_f →	I
J.	High Stack ΔP (inch water)	J
	Average Stack ΔP (inch water)	0.06
	Low Stack ΔP (inch water)	
K.	High Stack Temperature, t_s (°F)	K
	Average Stack Temperature, t_s (°F)	85
	Low Stack Temperature, t_s (°F)	
L.	Ideal Probe Tip Diameter, Dn (inch)	0.414 L
M.	Actual Probe Tip Diameter, Dn (inch) →	0.374 M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	N

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

DATE: 20 MAY 80
PLANT: GA NARF
LOCATION: NARF PENSACOLA
PREP. BY: CKY

RUN NO.: 10
STACK NO: CN(8)
SAMPLE BOX NO.: 16

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
2 -	1. 100 ml		625.6	640.5	14.9	
2 -	2. 100 ml		579.5	582.0	2.5	
2 -	3. Dry		518.7	521.1	2.4	TOTAL
2 -	4. 175 g silica gel		681.7	692.0	10.3	30.1

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

11ND-CBC-3960/47 (REV. 11-78)

* ADJUSTED POINT

↑ NORTH

CL PRESSURE = 40 psig

SOURCE EMISSIONS TESTING DATA SHEET 500#/24hr CL(G) BATCH CN
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: WARF PENSACOLA		AMBIENT TEMPERATURE: 75	BAROMETRIC PRESSURE, IN HG: 29.82
OPERATOR: CARPENTER	DATE: 20 MAY 80		ASSUMED MOISTURE, %: 3	HEATER BOX SETTING: OFF
RUN NO.: 10	SAMPLE BOX NO.: 6		PROBE # (PITOT #): 3	PROBE LENGTH, in.: 36
METER BOX NO.: 3	METER ΔH@: 1.95		NOZZLE I.D. NO.: 3/8-7-INCONEL	NOZZLE DIAMETER, in.: 0.374
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: INCONEL	LEAK RATE (CFM) @ " HG: 0.009 @ 24

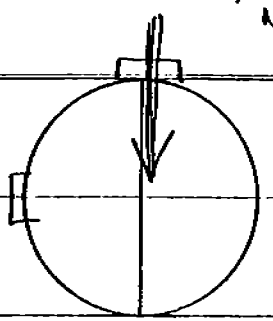
TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
	0814											
* 1	0	348.781	85	0.09	1.9	77	77	AMBIENT	58	4	AMBIENT	
2	4	352	85	0.09	1.95	88	77		58	4		
3	8	355	84	0.09	2.0	97	78		52	4		
4	12	358	84	0.09	2.0	108	80		54	4		
5	16	361	85	0.085	1.9	111	82		56	4		
6	20	365	85	0.065	1.5	118	83		56	4		
7	24	367	84	0.06	1.35	119	86		57	3		
8	28	369	84	0.075	1.7	120	88		58	3½		
* 9	32	372	78	0.07	1.65	124	91		58	3½		
* 10	36	375	75	0.06	1.4	126	93		58	3		
	40	378.290	CHANGE PORTS, & READ METER									
	0954		& READ CLOCK									
TOTAL												
AVERAGE												

9-136

* ADJUSTED POINT

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH



PLANT: 604	LOCATION: WARF PENSACOLA		AMBIENT TEMPERATURE: 75	BAROMETRIC PRESSURE, IN HG: 29.84	
OPERATOR: CARPENTER	DATE: 20 MAY 80		ASSUMED MOISTURE, %: 3	HEATER BOX SETTING: OFF	
RUN NO.: 10	SAMPLE BOX NO.: 6		PROBE # (PITOT #): 3	PROBE LENGTH, in.: 36	
METER BOX NO.: 3	METER ΔH@: 1.95		NOZZLE I.D. NO.: 3/8-7-INCONEL	NOZZLE DIAMETER, in.: 0.374	
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.85	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: INCONEL	LEAK RATE (CFM) @ " HG: 0.006 @ 15

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
* 11 1	0 (0911)	378.290	83	0.09	2.0	101	96	AMBIENT	72	4	AMBIENT	
12 2	4	381	85	0.09	2.05	112	97		57	4		
13 3	8	384.	85	0.085	1.95	120	97		57	4		
14 4	12	387	85	0.08	1.85	126	98		57	3 3/4		
15 5	16	391	85	0.07	1.65	129	100		57	3 1/2		
16 6	20	394	85	0.05	1.15	130	102		58	2 3/4		
17 7	24	396	84	0.055	1.3	129	103		59	2 3/4		
18 8	28	399	83	0.035	0.82	129	103		59	2		
* 19 9	32	401	80	0.055	1.3	129	105		61	2 3/4		
* 20 10	36	403	77	0.055	1.3	130	106		60	2 3/4		
	40 (0951)	406.267	END OF TEST, ✓READ BAROMETER			READ	CLOCK, ✓LEAK	✓READ METER CHECK PTL				
TOTAL												
AVERAGE												

D-137

* ADJUSTED POINT

↑ NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3360/62 (Rev. 11-78)

PLANT: 604	LOCATION: WARP PENSACOLA		AMBIENT TEMPERATURE	BAROMETRIC PRESSURE, IN HG
OPERATOR: CARPENTER	DATE		ASSUMED MOISTURE, %	HEATER BOX SETTING: OFF
RUN NO.	SAMPLE BOX NO.: 6		PROBE # (PITOT #)	PROBE LENGTH, in.
METER BOX NO.: 3	METER $\Delta H_@$		NOZZLE I.D. NO.	NOZZLE DIAMETER, in.
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL / LEAK RATE (CFM) @ " HG: @

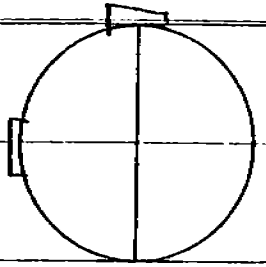
TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F.	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
								AMBIENT			AMBIENT	
TOTAL												
AVERAGE												

D-138

*ADJUSTED POINT

↑NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE	BAROMETRIC PRESSURE, IN HG	
OPERATOR: CARPENTER	DATE		ASSUMED MOISTURE, %	HEATER BOX SETTING: OFF	
RUN NO.	SAMPLE BOX NO.: 6		PROBE # (PITOT #)	PROBE LENGTH, in.	
METER BOX NO.: 3	METER ΔH@		NOZZLE I.D. NO.	NOZZLE DIAMETER, in.	
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: N/A	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL	LEAK RATE (CFM) @ " HG @

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
TOTAL												
AVERAGE												

D-139

Cl(g) CONTINUOUS 500 #/24 HR SOLUTION
FLOW RATE

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 1310

DATE 19 MAY 80

LOCATION NARF PENSACOLA

RUN NO. CN(8)-1/ Run 1

PLANT 604

STACK NO. CN (8)

SOURCE CN

SAMPLE BOX NO. +

A.	Stack Pressure, P_s (inch water)	0.045 A
B.	Barometric Pressure, P_b (inch Hg)	B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m (°F), $t_{ambient}$ + 30	– E
F.	Meter ΔH@ (inch water)	F
G.	Meter Correction Factor, γ	0.9979 G
H.	Assumed Moisture Content (%)	2% H
I.	Nomograph Correction Factor, C_f	N/A I
J.	High Stack ΔP (inch water)	J
	Average Stack ΔP (inch water)	
	Low Stack ΔP (inch water)	
K.	High Stack Temperature, t_s (°F)	K
	Average Stack Temperature, t_s (°F)	
	Low Stack Temperature, t_s (°F)	
L.	Ideal Probe Tip Diameter, Dn (inch)	L
M.	Actual Probe Tip Diameter, Dn (inch)	0.374 M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	N

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

DATE: 19 MAY 80
PLANT: 604
LOCATION: NARF PENSACOLA
PREP. BY: CKY

RUN NO.: CN(8)-11
STACK NO: CN.
SAMPLE BOX NO.: 4

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
4	1. 100 ml		596.9	612.0	15.1	
4	2. 100 ml		595.0	600.9	5.9	
4	3. Dry		524.7	527.1	2.4	TOTAL
4	4. 175 g silica gel		713.2	723.4	10.2	33.6

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

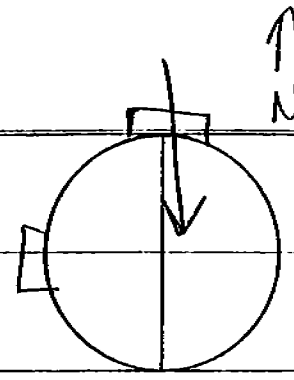
( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

11ND-C8C-3960/47 (REV. 11-78)

*ADJUSTED POINT

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

1 3/4



PLANT: 604	LOCATION: NAAF PENSACOLA		AMBIENT TEMPERATURE: 85	BAROMETRIC PRESSURE, IN HG: 29.95	
OPERATOR: CARPENTER	DATE: 19 MAY 80		ASSUMED MOISTURE, %: 2	HEATER BOX SETTING: OFF	
RUN NO.: 11	SAMPLE BOX NO.: 4		PROBE # (PITOT #): 3	PROBE LENGTH, in.: 36	
METER BOX NO.: 3	METER ΔH@: 1.95		NOZZLE I.D. NO.: 3/8-7-INC	NOZZLE DIAMETER, in.: 0.374	
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL:	LEAK RATE (CFM) @ " HG: 0.009 @ 21

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft^3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
* 1	1 1310 / 0	295.018	85	0.09	1.95	85	85	AMBIENT	71	10	AMBIENT	
*	2 2	296	90	0.085	1.85	89	88		67	9 3/4		
2	3 4	298	90	0.085	1.85	95	88		67	9 3/4		
	4 6	299	90	0.085	1.9	98	89		66	10		
3	5 8	301	90	0.08	1.8	105	89		67	9 3/4		
	6 10	302	90	0.08	1.8	110	90		68	9 1/2		
4	7 12	304	90	0.075	1.7	114	90		68	9		
	8 14	305	90	0.075	1.7	117	91		67	9		
5	9 16	307	90	0.065	1.5	120	92		66	7 3/4		
	10 18	308	89	0.060	1.4	122	93		66	7 1/2		
			TURN	PAGE								
TOTAL												
AVERAGE												

D-142

HP 9815 TAPE #

*ADJUSTED POINTS

SOURCE EMISSIONS TESTING DATA SHEET
1IND-CBC-3360/62 (Rev. 11-78)

PLANT: 604	LOCATION: WARF PEUSACOLA	AMBIENT TEMPERATURE: 85	BAROMETRIC PRESSURE, IN HG: —
OPERATOR: CARPENTER	DATE: 19 MAY 80	ASSUMED MOISTURE, %: 2½	HEATER BOX SETTING: OFF
RUN NO.: CN(8)-11	SAMPLE BOX NO.: 4	PROBE # (PITOT #): 3-	PROBE LENGTH, in.: 36
METER BOX NO.: 3	METER ΔH@: 1.95	NOZZLE I.D. NO.: 3/8-7-INCONEL	NOZZLE DIAMETER, in.: 0.374
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF / PROBE LINER MATERIAL: INCONEL / LEAK RATE (CFM) @ " HG: — @ —

TRAVERSE POINT NUMBER		SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
6	11	20	310	88	0.045 ~~0.05~~	1.05	123	94	AMBIENT	65	6½	AMB	CUT
	12	22	311	88	0.045	1.05	125	96		66	6½		
7	13	24	312	88	0.035	0.815	125	96		66	5		
	14	26	313	88	0.04	0.93	126	98		66	6		
8	15	28	314	88	0.025	0.685	127	99		65	4		
	16	30	315	88	0.03	0.70	127	101		67	4½		
* 9	17	32	316	88	0.035	0.815	127	103		67	5		
*	18	34	317	87	0.035	0.82	128	103		67	5		
*10	19	36	318	87	0.035	0.82	129	104		67	5		
*	20	38	319	87	0.025	0.59	131	105		67	4		
		40 / 1360	320.340	CHANGE PORTS & READ METER & READ CLOCK & TURN PAGE									
TOTAL													
AVERAGE													

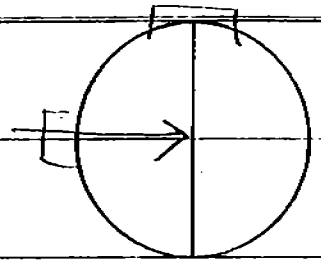
HP 9815 TAPE #

D-143

* ADJUSTED POINTS

NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

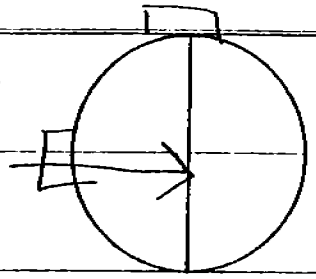
PLANT: 604	LOCATION: NAVY PENSACOLA		AMBIENT TEMPERATURE: 85	BAROMETRIC PRESSURE, IN HG: —
OPERATOR: CARPENTER	DATE: 19 MAY 80		ASSUMED MOISTURE, %: 2½	HEATER BOX SETTING: OFF
RUN NO.: CN(8) -11	SAMPLE BOX NO.: 4		PROBE # (PITOT #): 3-	PROBE LENGTH, in.: 36
METER BOX NO.: 3	METER ΔH@: 1.95		NOZZLE I.D. NO.: 3/8-7-INCONEL	NOZZLE DIAMETER, in.: 0.374
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: INCONEL	LEAK RATE (CFM) @ " HG: — @ —

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft^3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
21	1400											
* 11	0	320.340	87	0.08	1.85	115	108	AMBIENT	66	9	AMBIENT	
22												
*	2	322	88	0.08	1.85	121	109		65	9		
23												
P 12	4	323	88	0.08	1.85	126	109		64	9		
24												
	6	325	87	0.08	1.85	129	110		64	9		
25												
13	8	326	87	0.08	1.9	133	110		65	9		
26												
	10	328	88	0.08	1.9	134	111		65	9		
27												
14	12	329	88	0.08	1.9	138	111		66	9		
28												
	14	331	87	0.08	1.9	138	112		66	9		
29												
15	16	333	88	0.075	1.8	140	113		65	8¾		
30												
	18	334	88	0.07	1.65	141	113		65	8		
			TURN	PAGE								
TOTAL												
AVERAGE												

* ADJUSTED POINT

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 85	BAROMETRIC PRESSURE, IN HG: 29.92	
OPERATOR: CARPENTER	DATE: 19 MAY 80		ASSUMED MOISTURE, %: 2½	HEATER BOX SETTING: OFF	
RUN NO.: CW(8)-11	SAMPLE BOX NO.: 4		PROBE # (PITOT #): 3-	PROBE LENGTH, in.: 36	
METER BOX NO.: 3	METER ΔH@: 1.95		NOZZLE I.D. NO.: 3/8-7-INCONEL	NOZZLE DIAMETER, in.: 0.374	
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: INCONEL	LEAK RATE (CFM) @ " HG: 0.008 @ 15

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (-H) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T min) °F.	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T mout) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
16 (31)	20	336	88	0.05	1.2	141	114	AMBIENT	66	6½	Analyzer	
(32)	22	337	88	0.045	1.1	141	114		65	6¼		
17 (33)	24	338	88	0.045	1.1	141	115		65	6¼		
(34)	26	339	87	0.045	1.1	141	115		65	6		
18 (35)	28	340	88	0.04	0.955	141	116		66	5½		
(36)	30	342	87	0.05	1.2	141	117		67	6½		
* 19 (37)	32	343	86	0.06	1.45	141	117		67	.7		
* (38)	34	344	86	0.05	1.3	142	118		67	7		
* 20 (39)	36	345	86	0.045	1.1	143	118		67	6¼		
* (40)	38	347	86	0.045	1.1	143	119		68	6¼		
	40 / 1440	348.563	END OF TEST • READ CLOCK ✓ READ METER ✓ READ BAROMETER ✓ LEAK CHECK • PTL									
TOTAL												
AVERAGE												

— HP TAPE #

D-145

FILTER NOs		

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME _____

DATE 21 MAY 80

LOCATION NARF PENSACOLA

RUN NO. CN (8) - 13

PLANT 604

STACK NO. CN (EF-2)

SOURCE CN (EF-2)

SAMPLE BOX NO. 5

A.	Stack Pressure, P_s (inch water)	0.045 A
B.	Barometric Pressure, P_b (inch Hg)	B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m (^oF), $t_{ambient}$ + 30	E
F.	Meter $\Delta H@$ (inch water)	F
G.	Meter Correction Factor, γ	0.9979 G
H.	Assumed Moisture Content (%)	3.6 H
I.	Nomograph Correction Factor, C_f	— I
J.	High Stack ΔP (inch water)	— J
	Average Stack ΔP (inch water)	0.06
	Low Stack ΔP (inch water)	—
K.	High Stack Temperature, t_s (^oF)	— K
	Average Stack Temperature, t_s (^oF)	85
	Low Stack Temperature, t_s (^oF)	—
L.	Ideal Probe Tip Diameter, Dn (inch)	L
M.	Actual Probe Tip Diameter, Dn (inch)	0.374 M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	— N

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

DATE: 21 MAY 80
PLANT: 004
LOCATION: NARF PENSACOLA
PREP. BY: CKY

RUN NO.: CN(2)-13
STACK NO: CN-
SAMPLE BOX NO.: 5

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
4-	1. 100 ml		597.3	607.3	10.0	
4-	2. 100 ml		595.6	599.9	4.3	
4-	3. Dry		525	525.8	0.8	TOTAL
4-	4. 175 g silica gel		709.9	717.1	7.2	22.3

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

* ADJUSTED POINTS

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

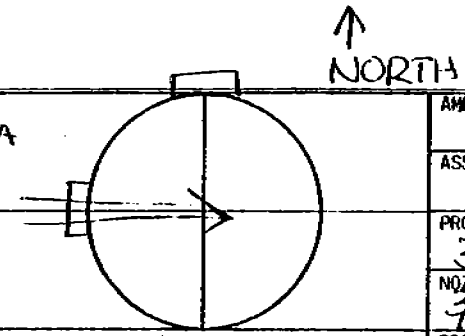
↑ NORTH

PLANT: 604	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 79	BAROMETRIC PRESSURE, IN HG: 29.92
OPERATOR: CARPENTER	DATE: 21 MAY 80		ASSUMED MOISTURE, %: 2.6	HEATER BOX SETTING: OFF
RUN NO.: CN(8)-13	SAMPLE BOX NO.: 5		PROBE # (PITOT #): 3	PROBE LENGTH, in.: 36
METER BOX NO.: 3	METER ΔH@: 1.95		NOZZLE I.D. NO.: 3/8-7-INCONEL	NOZZLE DIAMETER, in.: 0.374
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, Cp: 0.84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: INCONEL	LEAK RATE (CFM) @ " HG: 0.002 @ 20

	TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
*	1	0 (0810)	449.483	88	0.075	1.6	80	80	AMBIENT	63	6	AMBIENT	
	2	3	452	88	0.07	1.5	86	81		50	5 3/4		
	3	6	453	88	0.07	1.55	93	81		50	5 3/4		
	4	9	456	88	0.06	1.35	100	81		51	5 1/4		
	5	12	457	88	0.05	1.1	105	82		52	4 1/2		
	6	15	459	88	0.04	0.905	110	84		54	4		
	7	18	461	88	0.035	0.795	111	86		55	3 1/4		
	8	21	462	87	0.035	0.795	113	87		54	3 1/4		
*	9	24	464	87	0.035	0.80	115	88		56	3 1/4		
*	10	27	466	87	0.04	0.92	118	90		57	3 1/4		
		30 (0848)	467.391	CHANGE PORTS @ READ CLOCK									
			@ READ METER										
	TOTAL												
	AVERAGE												

D-148

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)



PLANT: 604	LOCATION: NARF PENSACOLA	AMBIENT TEMPERATURE: 79	BAROMETRIC PRESSURE, IN HG: 29.93
OPERATOR: CARPENTER	DATE: 21 MAY 80	ASSUMED MOISTURE, %: 26	HEATER BOX SETTING: OFF
RUN NO.: CN(8)-13	SAMPLE BOX NO.: 5	PROBE # (PITOT #): 3	PROBE LENGTH, in.: 36
METER BOX NO.: 3	METER $\Delta H_@$: 1.95	NOZZLE I.D. NO.: 3/8-7-INCONEL	NOZZLE DIAMETER, in.: 0.374
C FACTOR (Nomograph): N/A	PITOT COEFFICIENT, CP: 0.84	PROBE HEATER SETTING: OFF	PROBE LINER MATERIAL: INCONEL
			LEAK RATE (CFM) @ " HG: 0.002 @ 17

SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER Inlet (T_{min}) °F	Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
* 11 1	0 / 904	467.391	89	0.065	1.45	102	96	AMBIENT	65	5 1/4	AMBIENT	
12 2	3	469	89	0.065	1.45	112	98		58	5 1/4		
13 3	6	471	89	0.065	1.5	115	98		55	5 1/4		
14 4	9	473	89	0.06	1.4	121	99		55	5 1/4		
15 5	12	475	89	0.055	1.25	125	100		57	4 3/4		
16 6	15	477	89	0.035	0.815	127	102		58	3 1/4		
17 7	18	479	89	0.035	0.815	127	103		61	3 1/4		
18 8	21	480	89	0.035	0.815	127	104		62	3 1/4		
* 19 9	24	482	89	0.04	0.93	128	105		63	3 1/2		
* 20 10	27	483	89	0.04	0.935	130	107		64	3 1/2		
	30	485.533	END OF TEST, Ø READ CLOCK, Ø READ BAROMETER									
	934	Ø READ METER Ø LEAK CHECK Ø PTL										
TOTAL												
AVERAGE												

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 1350

DATE 20 MAY 80

LOCATION NARF PENSACOLA

RUN NO. 3557-15

PLANT 3557

STACK NO. 3557

SOURCE STRIPPING

SAMPLE BOX NO. 1

A.	Stack Pressure, P_s (inch water)	A
B.	Barometric Pressure, P_b (inch Hg)	29.84 B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m ($^\circ$F), $t_{ambient}$ + 30	E
F.	Meter ΔH@ (inch water)	1.931 F
G.	Meter Correction Factor, δ	1.0000 G
H.	Assumed Moisture Content (%)	3.4 H
I.	Nomograph Correction Factor, C_f	I.
J.	High Stack ΔP (inch water)	J
	Average Stack ΔP (inch water)	.596
	Low Stack ΔP (inch water)	
K.	High Stack Temperature, t_s ($^\circ$F)	K
	Average Stack Temperature, t_s ($^\circ$F)	75
	Low Stack Temperature, t_s ($^\circ$F)	
L.	Ideal Probe Tip Diameter, Dn (inch)	.231 L
M.	Actual Probe Tip Diameter, Dn (inch)	.131 M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	N

363.1
MT 36.0

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

DATE: 20 MAY 80
PLANT: 3551
LOCATION: NARF PENSACOLA
PREP. BY: YEE

RUN NO.: 3557-15
STACK NO: 3557
SAMPLE BOX NO.: 1

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
1	1. 100 ml		631.5	643.8	12.3	
1	2. 100 ml		610.0	611.5	1.5	
1	3. Dry		478.9	479.3	.4	TOTAL
1	4. 175 g silica gel		754.6	758.3	3.7	20.1
		473.3	581.4	584.2	2.8	

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

11ND-CBC-3960/47 (REV. 11-78)

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

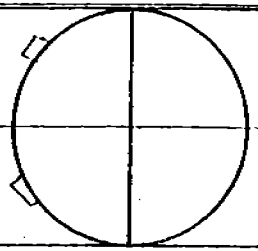
PLANT: 3557	LOCATION: NAAP Lenoir City		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.84
OPERATOR: Hickenbottom	DATE: 20 MAY 80		ASSUMED MOISTURE, %: 34	HEATER BOX SETTING: —
RUN NO.: 3557-15	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 1 — 10'	PROBE LENGTH, in.: 132
METER BOX NO.: 4	METER $\Delta H_@$: 1.1314		NOZZLE I.D. NO.: 2	NOZZLE DIAMETER, in.: .131
C FACTOR (Nomograph)	PITOT COEFFICIENT, C_P: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING	PROBE LINER MATERIAL: Inconel	LEAK RATE (CFM) @ " HG: 0.00 @ 16

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F.	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F.	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
1 *	0 / 1330	778.48	81	.45	.14	80	83	Ambient	73	0	Ambient	
2 *	6	779.86	81	.43	.14	85	83		71	0		
3	12	781.23	81	.43	.14	89	83		66	0		
4	18	782.51	81	.45	.15	91	83		63	0		
5	24	783.98	84	.50	.16	92	84		62	1		
6	30	785.45	81	.59	.19	94	84		63	1		
7	36	787.03	80	.72	.24	95	84		62	1		
8	42	788.71	80	.72	.24	96	85		62	1		
9	48	790.53	79	.69	.23	96	85		63	1		
10	54	792.21	80	.72	.24	97	86		63	1		
11	60	793.98	80	.63	.21	97	86		64	1		
12 *	66	795.63	81	.63	.21	98	87		63	1		
TOTAL	72	711.286										
AVERAGE												

D-152

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 3557	LOCATION: NAPF Pensacola		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.82
OPERATOR: HICKENBOTTOM	DATE: 26 MAY 86		ASSUMED MOISTURE, %: 3	HEATER BOX SETTING: —
RUN NO.: 3557-15	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 1	PROBE LENGTH, in.: 12
METER BOX NO.: 4	METER ΔH@: 1.9314		NOZZLE I.D. NO.: 2	NOZZLE DIAMETER, in.: .151
C FACTOR (Nomograph)	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: —	PROBE LINER MATERIAL: Inconel	LEAK RATE (CFM) @ " HG: .005 @ 16

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
13 *	0	797.286	82	.66	.211	84	84	AMBIENT	67	1	AVG:	AVG:
14 *	6	798.98	82	.69	.22	81	85		63	1		
15	12	800.68	82	.69	.22	91	85		61	1		
16	18	802.38	82	.66	.22	95	86		62	1		
17	24	804.14	82	.70	.23	96	86		63	1		
18	30	805.87	82	.64	.21	91	86		64	1		
19	36	807.6	80	.51	.17	97	87		65	.1		
20	42	809.13	83	.42	.14	96	86		67	1		
21	48	810.51	83	.39	.13	94	86		69	1		
22	54	811.96	84	.35	.11	93	86		69	1		
23	60	813.76	84	.36	.12	92	85		70	1		
24 *	66	814.55	84	.36	.12	92	84		70	1		
TOTAL	72	815.84										
AVERAGE												

1515

D-153

A = 95 SF

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 0840

DATE 21 MAY 80

LOCATION NARF PENSACOLA

RUN NO. 3557-16

PLANT 3557

STACK NO. 3557

SOURCE STRIPPING

SAMPLE BOX NO. 4

A.	Stack Pressure, P_s (inch water)	-.01 A
B.	Barometric Pressure, P_b (inch Hg)	29.92 B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m ($^\circ$F), $t_{ambient} + 30$	E
F.	Meter ΔH@ (inch water)	1.89 F
G.	Meter Correction Factor, γ	1.0021 G
H.	Assumed Moisture Content (%)	2.8 H
I.	Nomograph Correction Factor, C_f	I
J.	High Stack ΔP (inch water)	J
	Average Stack ΔP (inch water)	.558
	Low Stack ΔP (inch water)	
K.	High Stack Temperature, t_s ($^\circ$F)	K
	Average Stack Temperature, t_s ($^\circ$F)	80
	Low Stack Temperature, t_s ($^\circ$F)	
L.	Ideal Probe Tip Diameter, Dn (inch)	.235 L
M.	Actual Probe Tip Diameter, Dn (inch)	.131 M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	N

PARTICULATE SAMPLE BOX SET UP
CHECKLIST

DATE: 2C MAY 86
PLANT: 3557
LOCATION: NAS PENSACOLA
PREP. BY: YEE

RUN NO.: 3557-16
STACK NO: 3557
SAMPLE BOX NO.: 4

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
	1. 100 ml		608.2	621	12.8	
	2. 100 ml		601.6	602.5	.9	
	3. Dry		463.4	464.0	.6	TOTAL
	4. 175 g silica gel		749.3	753.9	4.6	20.6
		495.4	583.7	585.4	1.7	

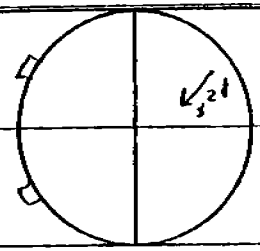
Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

PLANT: 3557	LOCATION: NARF Pensacola		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.92
OPERATOR: HICKENBOTTOM	DATE: 20 MAY 80		ASSUMED MOISTURE, %: 2.8	HEATER BOX SETTING: —
RUN NO.: 3557-16	SAMPLE BOX NO.: 4		PROBE # (PITOT #): 1	PROBE LENGTH, in.: 132
METER BOX NO.: 4	METER ΔH@: 1.89		NOZZLE I.D. NO.: 2	NOZZLE DIAMETER, in.: .131
C FACTOR (Nomograph): —	PITOT COEFFICIENT, Cp: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: —	PROBE LINER MATERIAL: INCONEL	LEAK RATE (CFM) @ " HG: .007 @ 15

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft³	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
1 *	0840 / 0	816.40	76	8.00	.19	87	88	AMBIENT	68	1	AMB	IENT
2 *	6	817.99	76	.60	.19	88	88		62	1		
3	12	819.61	77	.65	.21	93	88		61	1		
4	18	821.3	78	.67	.22	97	91		62	1		
5	24	822.95	79	.76	.23	98	92		61	1		
6	30	824.63	79	.61	.20	98	91		60	1		
7	36	826.26	79	.51	.17	98	91		61	1		
8	42	827.76	79	.43	.14	97	90		63	1		
9	48	829.1	79	.37	.12	96	90		66	1		
10	54	830.4	80	.34	.11	96	90		68	1		
11	60	831.68	81	.34	.11	96	90		68	1		
12 **	66 / 72	832.95	81	.34	.11	95	89		69	1		
TOTAL		894.165										
AVERAGE												

* ADJUSTED (PROBE TOO SHORT)
** ADJUSTED

DT156

NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 3557	LOCATION: NAF Pensacola		AMBIENT TEMPERATURE: 80	BAROMETRIC PRESSURE, IN HG: 29.95
OPERATOR: Hickenbottom	DATE: 2 May 80		ASSUMED MOISTURE, %: 2.8	HEATER BOX SETTING: —
RUN NO.: 3557-16	SAMPLE BOX NO.: 4		PROBE # (PITOT #): 1	PROBE LENGTH, in.: 13.2
METER BOX NO.: 4	METER $\Delta H_@$: 1.89		NOZZLE I.D. NO.: 2	NOZZLE DIAMETER, in.: .131
C FACTOR (Nomograph): —	PITOT COEFFICIENT, C_P: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: —	PROBE LINER MATERIAL: Inconel / LEAK RATE (CFM) @ in HG: .009 @ 11

TRAVERSE POINT NUMBER	SAMPLING TIME (e) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
13 *	1012 / 0	834.165	82	.38	.12	87	86	AMBIENT	66	1	AMB	AMBT
14 *	6	835.45	82	.38	.12	88	88		65	1		
15	12	836.75	82	.38	.12	91	88		64	1		
16	18	838.05	82	.41	.13	93	87		64	1		
17	24	839.31	82	.47	.15	94	87		60	1		
18	30	840.81	82	.56	.18	96	87		58	1		
19	36	842.35	82	.71	.23	97	88		58	1		
20	42	844.06	82	.74	.24	99	88		58	1		
21	48	845.83	82	.69	.23	102	89		60	1		
22	54	847.51	83	.64	.21	103	89		61	1		
23	60	849.26	83	.66	.22	103	90		63	1		
24	66 /	851.0	83	.66	.22	102	90		64	1		
TOTAL	72	852.675										
AVERAGE												

FILTER NOs	

PRELIMINARY DATA FOR SOURCE SAMPLING

START TIME 1320

DATE 21 MAY 80

LOCATION NARF PENSACOLA

RUN NO. 3557-17

PLANT 3557

STACK NO. 3557

SOURCE STRIPPING

SAMPLE BOX NO. 1

A.	Stack Pressure, P_s (inch water) →	.01 A
B.	Barometric Pressure, P_b (inch Hg) →	29.94 B
C.	Absolute Stack Pressure, P_s (inch Hg), $P_b + P_s/13.6$	C
D.	P_s/P_b	D
E.	Meter Temperature, t_m (^oF), $t_{ambient}$ + 30	E
F.	Meter $\Delta H@$ (inch water)	1.84 F
G.	Meter Correction Factor, γ	1.0001 G
H.	Assumed Moisture Content (%)	2.7 H
I.	Nomograph Correction Factor, C_f →	I
J.	High Stack ΔP (inch water)	J
	Average Stack ΔP (inch water)	.535
	Low Stack ΔP (inch water)	
K.	High Stack Temperature, t_s (^oF)	K
	Average Stack Temperature, t_s (^oF)	80
	Low Stack Temperature, t_s (^oF)	
L.	Ideal Probe Tip Diameter, Dn (inch)	.236 L
M.	Actual Probe Tip Diameter, Dn (inch) →	.131 M
N.	Align t_s and Actual Dn to obtain ΔP, ΔP (inch water)	N

MT 383.1
38.3

PARTICULATE SAMPLE BOX SET UP CHECKLIST

DATE: 21 MAY 80

PLANT: 3557

LOCATION: NAF PENSACOLA

PREP. BY: YEE

RUN NO.: 3557-17

STACK NO: 3557

SAMPLE BOX NO.: 1

( ) 1. Wash all glassware with distilled water and then acetone.

( ) 2. Place approx. 100 ml distilled water in the first impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 3. Place approx. 100 ml distilled water in the second impinger, a standard Greenburg-Smith impinger (caricell tip). Record exact weight to 1/10 of a gram.

( ) 4. Impinger three is a dry modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record dry tare weight to 1/10 of a gram.

( ) 5. Place approx. 175 ml of silica gel in the fourth impinger, a modified Greenburg-Smith with straight tube 1/2 inch from the impinger bottom. Record exact weight to 1/10 of a gram.

( ) 6. PLACE TARED FILTER INTO FILTER HOLDER ON THE CYCLONE SIDE OF THE HOLDER. Smooth side of filter is to face frittered glass of filter holder. Record filter number and weight.

Impinger No.	Impinger weights (GRAMS)	Tare	Initial	Final	Condensate	
2	1. 100 ml		625.9	638.4	12.5	
2	2. 100 ml		578.6	579.4	.8	
2	3. Dry		518.8	519.2	.4	TOTAL
2	4. 175 g silica gel		689.4	693.2	3.8	20.7
	6-3A	473.3	580.0	583.2	3.2	

Filter No	Tare	Final	Net	
				TOTAL

( ) 7. Assemble flask, cyclone, and filter holder.

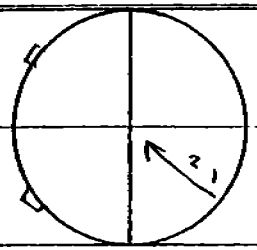
( ) 8. Assemble impinger bottles and glass elbows so air flows from a small hole to a larger hole.

Carbon

MT 145.7
36.1

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

NORTH

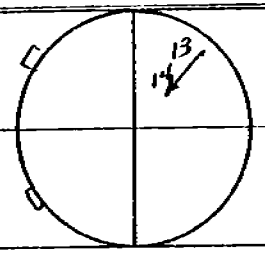
PLANT: 3557	LOCATION: NARF PENSACOLA		AMBIENT TEMPERATURE: 85	BAROMETRIC PRESSURE, IN HG: 29.99
OPERATOR: HICKENBOTTOM	DATE: 21 MAY 80		ASSUMED MOISTURE, %: 2.9	HEATER BOX SETTING: —
RUN NO.: 3557.17	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 1	PROBE LENGTH, in.: 132
METER BOX NO.: 4	METER ΔH@: 1.89		NOZZLE I.D. NO.: 2	NOZZLE DIAMETER, in.: .131
C FACTOR (Nomograph): —	PITOT COEFFICIENT, Cp: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: —	PROBE LINER MATERIAL: INCONEL	LEAK RATE (CFM) @ in HG: .007 @ 15

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
1 *	1300 / 0	853.05	89	.38	.12	84	84	AMBIENT	75	2	AMBIENT	
2 *	6	854.13	86	.38	.12	86	84		74	2		
3	12	855.39	86	.38	.12	89	84		70	2		
4	18	856.71	86	.36	.12	92	85		71	2		
5	24	858.0	85	.43	.14	94	85		69	2		
6	30	859.33	84	.56	.16	96	86		70	2		
7	36	860.8	83	.64	.21	97	87		68	2		
8	42	862.3	83	.65	.21	99	87		69	2		
9	48	863.85	84	.62	.20	99	88		70	3		
10	54	865.8	83	.58	.19	100	88		70	3		
11	60	867.38	84	.57	.19	102	87		72	3		
12 *	66	868.98	84	.57	.19	101	89		74	3		
TOTAL	72	810.58										
AVERAGE												

D-160

NORTH

SOURCE EMISSIONS TESTING DATA SHEET
11ND-CBC-3960/62 (Rev. 11-78)

PLANT: 3557	LOCATION: NARF Pensacola		AMBIENT TEMPERATURE: 85	BAROMETRIC PRESSURE, IN HG: 29.93	
OPERATOR: HICKENBOTTOM	DATE: 21 MAY 80		ASSUMED MOISTURE, %: 2.7	HEATER BOX SETTING: —	
RUN NO.: 3557.17	SAMPLE BOX NO.: 1		PROBE # (PITOT #): 1	PROBE LENGTH, in.: 132	
METER BOX NO.: 4	METER ΔH@: 1.84		NOZZLE I.D. NO.: 2	NOZZLE DIAMETER, in.: .131	
C FACTOR (Nomograph): —	PITOT COEFFICIENT, CP: .84	SCHEMATIC OF STACK CROSS SECTION (Show Traverse Points)	PROBE HEATER SETTING: —	PROBE LINER MATERIAL: INCONEL	LEAK RATE (CFM) @ " HG: .006 @ 10

TRAVERSE POINT NUMBER	SAMPLING TIME (θ) MIN	GAS METER READING (V_m) ft3	STACK TEMPERATURE (T_s) °F	VELOCITY HEAD (ΔP_s) In. H_2O	PRESSURE ACROSS ORIFICE (ΔH) In. H_2O	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Inlet (T_{min}) °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: Outlet (T_{mout}) °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE IMPINGER °F	SAMPLE VACUUM in. Hg.	CO_2 %	O_2 %
13 *	H2O 0	870.545	82	.61	.20	88	86	AMBIENT	70	3	AMBIENT	
14 *	6	872.21	83	.61	.20	93	89		70	3		
15	12	873.86	84	.61	.20	96	90		70	3		
16	18	875.55	84	.68	.22	99	90		69	3		
17	24	877.25	83	.63	.21	100	89		68	3		
18	30	878.94	81	.48	.16	99	88		67	3		
19	36	880.45	81	.39	.13	99	88		68	3		
20	42	881.91	81	.41	.13	98	88		70	3		
21	48	883.3	82	.37	.12	98	89		70	3		
22	54	884.58	83	.33	.11	97	89		72	3		
23	60	885.85	83	.33	.11	96	89		72	3		
24 **	66	887.11	83	.33	.11	96	89		73	3		
TOTAL	72	888.362										
AVERAGE												

* ADJUSTED

* ADJUSTED

D-161

Reid H. Leonard, Ph. D., Biochemist, 537 Brent Lane, Pensacola, Florida 32503

Tel. 904 — 476-4616

June 10, 1980

Sir:

These reports are for DTO/ N00204-80-M-P144.
Work is complete.

For NESO, Port Hueneme, Ca. 93043

Sincerely yours,

Reid H. Leonard

Reid H. Leonard

D-162 Enclosure (1)

Reid H. Leonard, Ph. D., Biochemist, 537 Brent Lane, Pensacola, Florida 32503

Tel. 904 – 476-4616

67705

mple: Bldg 604; NARFB; SEF-1, runs 1, 2 & 3
Contract N00204-80-M-p1444

Report:

Run No:	1	2	3	
Chloride	0.06	0.18	0.12	mgm/L
Nitrate N	.08	.03	.11	mgm/L
Sulfate, SO_4	<1.	<1.	<1.	mgm/L
Chromium	.005	.007	.050	mgm/L
Sodium	1.7	1.2	2.2	mgm/L

May 12, 1980

Reid H. Leonard

Reid H. Leonard

Reid H. Leonard, Ph. D., Biochemist, 537 Brent Lane, Pensacola, Florida 32503

67706

ample: Bldg 604; NARFP; SEF-2, runs 1, 2 & 3

Contract N00204-80-M-P144

Tel. 904 - 476-4616

Report:

Run No:	1	2	3	
Chromium	< 0.008	< 0.008	< 0.008	mgm/L

May 12, 1980

Reid H. Leonard

Reid H. Leonard

Reid H. Leonard, Ph. D., Biochemist, 537 Brent Lane, Pensacola, Florida 32503

Tel. 904 – 476-4616

67718

mple: Bldg 604; NARFP; SEF-3, runs 1, 2 & 3
Contract No. N00204-80-M-P144

Report:

Run No.:	1	2	3	
Sulfate, SO_4	<1.	1.2	<1.	mgm/L
Chromium	<.008	<.008	<.008	"
Sodium	1.7	1.6	1.9	"

May 20, 1980

Reid H Leonard

Reid H. Leonard

Reid II. Leonard, Ph. D., Biochemist, 537 Brent Lane, Pensacola, Florida 32503

67712

Sample: Bldg 604, NARFP; SEF-4, runs 1, 2 & 3

Tel. 904 – 476-4616

Contract N00204-80-M-P144

Report:

Run No:	1	2	3	
Chloride	2.9	1.4	1.4	mgm/L
Cyanide, CN	.2	.45	.4	mgm/L
Nitrate N	.422	.59	.63	mgm/L
Phosphate, P	<.05	<.05	<.05	mgm/L
Sulfate, SO_4	2.9	<1.	<1.	mgm/L
Copper	<.1	<.1	<.1	mgm/L
Sodium	1.5	1.5	1.7	mgm/L
Ammonia N	.14	.50	.04	mgm/L
Tin	<1.4	<1.4	<1.4	mgm/L

May 19, 1980

Reid H Leonard

Reid H. Leonard

8110?

Reid H. Leonard, Ph. D., Biochemist, 537 Brent Lane, Pensacola, Florida 32503

67719

mple: Bldg 604, NARFP; SEF-5, runs 1, 2 & 3

Contract N00204-80-M-P144

Tel. 904 – 476-4616

Report: WATER SAMPLES:

Run No:	1	2	3	
Chloride	3.8	2.9	1.7	mgm/L
Cyanide, CN	1.7	2.0	2.0	mgm/L
Silver	<.003	<.003	<.003	mgm/L
Copper	<.1	<.1	<.1	mgm/L
Nickel	.02	.02	.02	mgm/L
Sodium	1.1	1.8	.8	mgm/L

May 20, 1980

CARBON SAMPLES:

Run NO.:	1	2	
Ethyl acetate	122.	43.	PPM
Dichloromethane	38.	16.	PPM
Dichloroethane	22.	7.	PPM
Toluene	5.	4.	PPM

June 5, 1980

Reid H Leonard

Reid H. Leonard

Reid H. Leonard, Ph. D., Biochemist, 537 Brent Lane, Pensacola, Florida 32503

67724

ample: Bldg 604, NARFP; SEF-6, runs 1, 2 & 3

Contract N00204-80-M-P144

Tel. 904 – 476-4616

Report:

Run No:	1	2	3	
Cyanide, CN	0.28	0.73	0.73	mgm/L
Nitrate N	.03	.43	.26	mgm/L
Cadmium	.008	.018	<.003	mgm/L
Chromium	.015	<.008	<.008	mgm/L
Sodium	2.4	1.9	2.1	mgm/L
Ammonia N	.52	.52	.22	mgm/L

May 23, 1980

Reid H Leonard

Reid H. Leonard

Reid H. Leonard, Ph. D., Biochemist, 537 Brent Lane, Pensacola, Florida 32503

67725

ample: Bldg 604, NARFP; SEF-7, runs 1, 2 & 3

Tel. 904 – 476-4616

Contract N00204-80-M-P144

Report:

Run No:	1	2	3	
Cyanide, CN	1.9	2.6	2.0	mgm/L
Sulfate, SO_4	.8	.5	1.0	mgm/L
Cadmium	.040	.006	.008	mgm/L
Chromium	.022	<.008	<.008	mgm/L
Sodium	2.4	2.4	2.4	

May 23, 1980

Reid H. Leonard

Reid H. Leonard

Reid H. Leonard, Ph. D., Biochemist, 537 Brent Lane, Pensacola, Florida 32503

Tel. 904 – 476-4616

67726

Sample: Bldg 604, NARFP; EF-2, runs 1, 2, 3 &4
Contract N00204-80-M-P144

Report:

Run No.	1	2	3	4	
Chloride	0.9	1.6	0.7	0.4	mgm/L
Cyanide, CN	.04	.10	.10	.04	mgm/L
Sodium	2.5	2.7	3.6	2.3	

May 23, 1980

Reid H. Leonard

Reid H. Leonard

Reid H. Leonard, Ph. D., Biochemist, 537 Brent Lane, Pensacola, Florida 32503

67727

Sample: Bldg 3557; NARFP, runs 1, 2, 3, 4 & 5

Tel. 904 – 476-4616

Contract N00204-80-M-P144

Report:

WATER SAMPLES:

Run No.:	1	2	3	4	5	
Fluoride	<0.1	0.1	<0.1	<0.1	<0.1	mgm/l
Chromium	.037	.301	.102	.046	.061	mgm/l
Sodium	2.8	4.6	2.6	2.0	2.5	mgm/l
Ammonia N	2.4	1.9	<.02	<.02	<.02	mgm/L
Phenol	14.8	14.4	25.6	16.0	27.4	mgm/l

May 23, 1980
RHL

CARBON SAMPLES:

Run No.:	1	2	3	4	5	
Methylethlyketone	34.	23.	60.	41.	41.	PPM
Dichloromethane	343.	419.	359.	326.	645.	PI
Dichloroethane	74.	26.	52.	17.	29.	PPM
Toluene	9.	5.	44.	5.	5.	PI
Trichloroethylene	41.	21.	13.	<9.	11.	PPM
m & p-xylene	15.	<4.	8.	<4.	<4.	PPM
O-xylene	270.	15.	94.	<10.	24.	PI
Chlorobenzene	22.	<8.	<8.	<8.	<8.	PPM
O-cresol	16.	4.	4.	<4.	<4.	PI
m & p cresol	43.	8.	30.	4.	<4.	PPM

June 5, 1980

Reid H. Leonard

Reid H. Leonard

Reid H. Leonard, Ph. D., Biochemist, 537 Brent Lane, Pensacola, Florida 32503

ample: Contract N00204-80-M-P144

Tel. 904 – 476-4616

Report: Methods used for water analyses:

	Our Laboratory Detection limit &	S. D.	Method
Chloride	0.1	13%	EPA 325.3 ultramicro buret
Cyanide	.15	13%	EPA 335.2 " "
Chromium	.008	7%	EPA-AA
Fluoride	.02	10%	EPA 340.1
Nitrate N	.005	15%	EPA 352-1
Phosphorus	.05	12%	Std Met. AWWA
Sulfate	.4	4%	EPA 375.4
Silver	.003	10%	EPA-AA
Cadmium	.003	2%	EPA-AA
Copper	.1	10%	EPA-AA
Sodium	1.	2%	EPA-AA
Ammonia N	.02	3%	Std Met. AWWA
Nickel	.02	3%	EPA AA
Tin	1.4	25%	EPA-AA
Phenol	.4	13%	EPA 420-1

June 9, 1980

Reid H. Leonard

Reid H. Leonard

Reid H. Leonard, Ph. D., Biochemist, 537 Brent Lane, Pensacola, Florida 32503

Tel. 904 – 476-4616

mple: Contract N00204-80-M-P144

Report: Methods used for carbon samples:

Organic compounds were eluted from the carbon with carbon disulfide, 1.0 gram of carbon with 1.00 ml CS_2. This must stand at least 30 min. before analysis.

Ten microliter aliquots of the solution were chromatographed on a 7' X 1/8" SS column packed with 12% Carbowax 20M liquid phase on Anakrom ABS support. Detection was by flame ionization.

All substances except cresols were run ay 65°C with 12 ml of N_2 carrier per min. Relative retentions, detection limits and deviations were as follows:

	Relative retention	Detection limit, PPM	S. D. (on triplicates)
Hexane	0.131		
Ethyl acetate	.387		
Methylethylketone	.434	7.	6.4
Dichloromethane	.504	28	36.
Decane	.732		
Dichloroethane	.746	7	17.
Toluene	1.00	2	4.5
Trichloroethylene	1.15	9	22.
m & p-xylene	1.88	4	6.5
O-xylene	2.46	10	11.
Chlorobenzene	2.92	8	
Run at 165°C:			
O-cresol		4	
p & m-cresol		4.	

June 9, 1980

Reid H. Leonard

Reid H. Leonard

Reid H. Leonard, Ph. D., Biochemist, 537 Brent Lane, Pensacola, Florida 32503

Tel. 904 - 476-4616

umple: Contract N00204-80-M-P144

Report:

COMMENT:

All results have been corrected for the background values from 0.1 N KOH. Values obtained were:

Chloride	1.7 PPM	Cadmium	0.010
Cyanide	.02	Copper	< .1
Chromium	.033	Magnesium	.04
Fluoride	.5	Sodium	2.1
Nitrate N	.07	Ammonia N	.34
Phosphouus	.02	Nickel	.05
Sulfate	.4	Tin	< 1.4
Silver	< .003		

The carbon background showed a trace of methylethylketone, 7 PPM, and Dichloromethane, 28 PPM.

The pheols in runs from 3557 are cresols. This was contirmed by direct runs of water on the chromatograph. Methylethlyketone could not be detected by chromatographing the water.

June 10, 1980

Reid H Leonard

Reid H. Leonard

$1107

APPENDIX E

TEAM RESUMES

R E S U M É

Set Engineer

Charles K. Yee

1963 BS Chemical Engineering
Auburn University

1969 MS Environmental Systems Engineering
Clemson University

1965-72 Public Health Engineer: Air Pollution Control
Commission, State Health Department
Montgomery, Alabama

1972-Present Chemical Engineer
Field Operations Department
Navy Environmental Support Office
Port Hueneme, CA

R E S U M E

Set Leader

David A. Carpenter

1972- BS Applied Science & Engineering
Portland State University

1972- Field Engineer: Source & Ambient Testing
Dept. of Environmental Quality
State of Oregon

1972-1974- General Engineer

Source Emission Measurements Branch
National Environmental Research Center
Environmental Protection Agency
Research Traingle Park, NC

1974-Present- Mechanical Engineer

Field Operations Department
Navy Environmental Support Office
Port Hueneme, CA

R E S U M E

SET Engineer

Barry R. Hickenbottom

1971 -	Monitor; Air Pollution Ventura County Air Pollution Control District Ventura, CA
1972 -	BS Mechanical Engineer California State University San Luis Obispo, CA
1972 - 1973	Environmental Products/Dynasciences Chatsworth, CA
1973 - 1975	Engineer-Supervisor Custom Component Switches Chatsworth, CA
1975 - Present	Mechanical Engineer Field Operations Department Navy Environmental Support Office Port Hueneme, CA

R E S U M E

SET Technician

Edward G. Cobos

1972 - 1975	Prototype Welder Technical Support Branch Civil Engineering Laboratory Port Hueneme, CA
1975 - Present	Engineering Technician (Air Division) Field Operations Department Navy Environmental Support Office Port Hueneme, CA

RESUME

SET TECHNICIAN

Gilbert Siqueido

1977-1979	Undergraduate Studies Moorpark College Moorpark, CA
1979-Present	Engineering Technician (Air Division) Field Operations Department Navy Environmental Support Office Port Hueneme, CA

NAVAL FACILITIES ENGINEERING COMMAND
2144 MELBOURNE ST., P. O. BOX 10068
CHARLESTON, S. C. 29411

PLEASE ADDRESS REPLY TO THE COMMANDING OFFICER. NOT TO THE SIGNER OF THIS LETTER. REFER TO:

AUTOVON #794-5510

Code 114C

26 SEP 1980

From: Commanding Officer, Southern Division, Naval Facilities Engineering Command
To: Commanding Officer, Naval Air Rework Facility, Bldg. 604, Naval Air Station, Pensacola, FL Attn: J. M. Sims (Code 64001)

Subj: Source Emission Testing Results for Buildings 604 & 3557, NARF Pensacola

Ref: (a) FONECON btwn Mr. J. M. Sims, NARF Pensacola and Mr. S. D. Chambliss, SOUTHNAVFACENGCOM on 25 Sep 1980

1. In accordance with reference (a), a copy of NESO 2-095 "Source Emission Tests at Buildings 604 & 3557," prepared by Navy Environmental Support Office, is forwarded for your retention.

D. R. Spell

D. R. SPELL
By direction