RECEIVED
AUG 10 1998
BUREAU OF AIR REGULATION

F.J. GANNON STATION
UNIT 3

APPLICATION FOR WOOD DERIVED FUEL TEST BURN/AIR OPERATING PERMIT AMENDMENT

TECO
TAMPA ELECTRIC

0570040-008-AC

AUGUST 1998

BEST AVAILABLE COPY

FedEx USA Airbill FedEx Tracking Number 805858540204 Form I.D. No. 0210

SLA12 Recipient's Copy

1 From

Date 4/7/98 [redacted]

Sender's Name THERESA WATLEY Phone (813) 671-3361

Company TAMPA ELECTRIC CO/PROD ENGR

Address 6944 US HIGHWAY 41 N ENV. PLAN. Dept./Floor/Suite/Room

City APOLLO BEACH State FL ZIP 33572

2 Your Internal Billing Reference Information 445-506-59-18-359

3 To

Recipient's Name MR. AL LINERO Phone (850) 488-1344

Company FLA. DEPT. OF ENV. PROTECTION

Address 111 S. MAGNOLIA DR. STE 4 Dept./Floor/Suite/Room

(To "HOLD" at FedEx location, print FedEx address here)

Check here if residence (Extra charge applies for FedEx Express Saver)

City TALLAHASSEE State FL ZIP 32301

For HOLD at FedEx Location check here
- Hold Weekday (Not available with FedEx First Overnight)
- Hold Saturday (Not available at all locations) (Available for FedEx Priority Overnight and FedEx 2Day only)

For WEEKEND Delivery check here (Extra Charge. Not available at all locations)
- Saturday Delivery (Available for FedEx Priority Overnight and FedEx 2Day only)
- NEW Sunday Delivery (Available for FedEx Priority Overnight only)

8 0 5 8 5 8 5 4 0 2 0 4

4a Express Package Service *Packages under 150 lbs.* Delivery commitment may be later in some areas.

- [X] FedEx Priority Overnight (Next business morning)
- [ ] FedEx Standard Overnight (Next business afternoon)
- [ ] FedEx First Overnight (Earliest next business morning delivery to select locations) (Higher rates apply)
- [ ] FedEx 2Day (Second business day)
- [ ] FedEx Express Saver (Third business day)

FedEx Letter Rate not available. Minimum charge: One pound rate.

4b Express Freight Service *Packages over 150 lbs.* Delivery commitment may be later in some areas.

- [ ] FedEx Overnight Freight (Next business day)
- [ ] FedEx 2Day Freight (Second business day)
- [ ] FedEx Express Saver Freight (Up to 3 business days)

(Call for delivery schedule. See back for detailed descriptions of freight services.)

5 Packaging
- [ ] FedEx Letter
- [ ] FedEx Pak
- [X] FedEx Box
- [ ] FedEx Tube
- [ ] Other Pkg.

Declared value limit $500.

6 Special Handling

Does this shipment contain dangerous goods?* (One box must be checked) [ ] No [ ] Yes (As per attached Shipper's Declaration) [ ] Yes (Shipper's Declaration not required)

[ ] Dry Ice Dry Ice, 9, UN 1845 ____ x ____ kg.

[ ] Cargo Aircraft Only

*Dangerous Goods cannot be shipped in FedEx packaging.

7 Payment

Bill to: [X] Sender (Account No. in Section 1 will be billed) [ ] Recipient [ ] Third Party [ ] Credit Card [ ] Cash/Check [ ] Obtain Recipient FedEx Account No.

(Enter FedEx Account No. or Credit Card No. below)

[redacted]

Total Packages	Total Weight	Total Declared Value*	Total Charges
1	1	$ .00	$

*When declaring a value higher than $100 per shipment, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE, AND LIMIT OF LIABILITY section for further information.

Credit Card Auth.

8 Release Signature

Your signature authorizes Federal Express to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Federal Express from any resulting claims.

321

Questions?
Call 1·800·Go·FedEx® (800)463-3339

005365381

Terms And Conditions

Definitions On this Airbill, "we," "our" and "us" refer to Federal Express Corporation, its employees, and agents. "You" and "your" refer to the sender, its employees, and agents.

Agreement To Terms By giving us your package to deliver, you agree to all the terms in our current Service Guide, which is available on request. You also agree to those terms on behalf of any third party with an interest in the package. If there is a conflict between the Service Guide and this Airbill, the Service Guide will control. No one is authorized to change the terms of our Agreement.

Responsibility For Packaging And Completing Airbill You are responsible for adequately packaging your goods and properly filling out this Airbill. If you omit the number of *packages and/or weight per package, our billing will be based on* our best estimate of the number of packages we received and/or an estimated "default" weight per package as determined by us.

Responsibility For Payment Even if you give us different payment instructions, you will always be primarily responsible for all delivery costs, as well as any cost we incur in either returning your package to you or warehousing it pending disposition.

Limitations On Our Liability And Liabilities Not Assumed

- Our liability for loss or damage to your package is limited to your actual damage or $100, unless you declare a higher value, pay an additional charge, and document your actual loss in a timely manner. You may pay an additional charge for each additional $100 of declared value. The declared value does not constitute, nor do we provide cargo liability insurance.
- In any event, we will not be liable for any damage, whether direct, incidental, special, or consequential in excess of the declared value of a shipment, whether or not Federal Express had knowledge that such damages might be incurred including but not limited to loss of income or profits.
- We won't be liable:
  - for your acts or omissions including but not limited to improper or insufficient packing, securing, marking, or addressing or those of the recipient or anyone else with an interest in the package
  - *if you or the recipient violate any of the terms of our Agreement*
  - for loss or damage to shipments of prohibited items
  - for loss, damage, or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, acts of public enemies, war, strikes, civil commotions, or acts of public authorities with actual or apparent authority.

Declared Value Limits

- The highest declared value allowed for FedEx Letter and FedEx Pak shipments is $500.
- For other shipments, the highest declared value allowed is *$50,000 unless your package contains items of "extraordinary value,"* in which case the highest declared value allowed is $500.
- Items of "extraordinary value" include shipments containing such items as artwork, jewelry, furs, precious metals, negotiable instruments, and other items listed in our Service Guide.
- You may send more than one package on this Airbill and fill in the total declared value for all packages, not to exceed the $100, $500 or $50,000 per package limit described above. (Example: 5 packages can have a total declared value of up to $250,000.) In that case, our liability is limited to the actual value of the package(s) lost or damaged, but may not exceed the maximum allowable declared value(s) or the total declared value, whichever is less. *You are responsible for proving the actual loss or damage.*

Filing A Claim YOU MUST MAKE ALL CLAIMS IN WRITING and notify us of your claim within strict time limits set out in the current Service Guide.

We'll consider your claim filed if you notify our Customer Service Department at 1•800•Go•FedEx® (800)463-3339 and make your claim in writing as soon as possible.

Within 90 days after you notify us of your claim, you must send us all the information you have about it. We aren't obligated to act on any claim until you have paid all transportation charges, and you may not deduct the amount of your claim from those charges.

If the recipient accepts your package without noting any damage on the delivery record, we will assume the package was delivered in good condition. For us to process your claim, you must make the original shipping cartons and packing available for inspection.

Right To Inspect We may, at our option, open and inspect your packages before or after you give them to us to deliver.

Right Of Rejection We reserve the right to reject a shipment when such shipment would be likely to cause delay or damage to other shipments, equipment, or personnel or if its shipment is prohibited by law; or if the shipment would violate any terms of our Agreement or our current Service Guide.

C.O.D. Services C.O.D. SERVICE IS NOT AVAILABLE WITH THIS AIRBILL. If C.O.D. Service is required, please use a Federal Express C.O.D. Airbill.

Air Transportation Tax Included A feder[illegible]se tax when required by the Internal Revenue Code on [illegible] transportation portion of this service, if any, is paid by [illegible]

Money-Back Guarantee In the event of untimely delivery, Federal Express will at your request and with some limitations, refund or credit all transportation charges. See current Service Guide for more information.

Freight Services There are several freight service options, depending on your transit time needs.

- **FedEx Overnight Freight:** Next business-day service to all points in the 48 states; rates are based upon the distance shipped.
- **FedEx 2Day Freight:** Second business-day service to all points in the 48 states; rates are based upon the distance shipped.
- **FedEx Express Saver Freight:** Up to 3 business-day service to all points in the 48 states; rates are based upon the distance shipped.

TABLE OF CONTENTS

FLORIDA DEP LOGO

Department of
Environmental Protection

DIVISION OF AIR RESOURCES MANAGEMENT

APPLICATION FOR AIR PERMIT - LONG FORM

See Instructions for Form No. 62-210.900(1)

I. APPLICATION INFORMATION

This section of the Application for Air Permit form identifies the facility and provides general information on the scope and purpose of this application. This section also includes information on the owner or authorized representative of the facility (or the responsible official in the case of a Title V source) and the necessary statements for the applicant and professional engineer, where required, to sign and date for formal submittal of the Application for Air Permit to the Department. If the application form is submitted to the Department using ELSA, this section of the Application for Air Permit must also be submitted in hard-copy.

Identification of Facility Addressed in This Application

Enter the name of the corporation, business, governmental entity, or individual that has ownership or control of the facility; the facility site name, if any; and the facility's physical location. If known, also enter the facility identification number.

1. Facility Owner/Company Name: Tampa Electric Company	
2. Site Name: F.J. Gannon Station	
3. Facility Identification Number: 0570040	[ ] Unknown
4. Facility Location: Street Address or Other Locator: Port Sutton Road City: Tampa County: Hillsborough Zip Code: 33619	
5. Relocatable Facility? [ ] Yes [X] No	6. Existing Permitted Facility? [X] Yes [ ] No

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	
2. Permit Number:	
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official: Gregory M. Nelson, P.E. Manager, Environmental Planning	
2. Owner/Authorized Representative or Responsible Official Mailing Address: Organization/Firm: Tampa Electric Company Street Address: 6944 US Highway 41 North City: Apollo Beach State: Florida Zip Code: 33572-9200	
3. Owner/Authorized Representative or Responsible Official Telephone Numbers: Telephone: (813) 641-5016 Fax: (813) 641-5081	
4. Owner/Authorized Representative or Responsible Official Statement: *I, the undersigned, am the owner or authorized representative* of the non-Title V source addressed in this Application for Air Permit or the responsible official, as defined in Rule 62-210.200, F.A.C., of the Title V source addressed in this application, whichever is applicable. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof. I understand that a permit, if granted by the Department, cannot be transferred without authorization from the Department, and I will promptly notify the Department upon sale or legal transfer of any permitted emissions unit.* Gregory M. Nelson 8/6/98 Signature Date	

* Attach letter of authorization if not currently on file.

Scope of Application

This Application for Air Permit addresses the following emissions unit(s) at the facility. An Emissions Unit Information Section (a Section III of the form) must be included for each emissions unit listed.

Emissions Unit ID	Description of Emissions Unit	Permit Type
003	Unit No. 3, Solid Fuel Steam Generator	AC1B

Purpose of Application and Category

Check one (except as otherwise indicated):

Category I: All Air Operation Permit Applications Subject to Processing Under Chapter 62-213, F.A.C.

This Application for Air Permit is submitted to obtain:

[ ] Initial air operation permit under Chapter 62-213, F.A.C., for an existing facility which is classified as a Title V source.

[ ] Initial air operation permit under Chapter 62-213, F.A.C., for a facility which, upon start up of one or more newly constructed or modified emissions units addressed in this application, would become classified as a Title V source.

Current construction permit number: ______________________

[ ] Air operation permit renewal under Chapter 62-213, F.A.C., for a Title V source.

Operation permit to be renewed: ______________________

[ ] Air operation permit revision for a Title V source to address one or more newly constructed or modified emissions units addressed in this application.

Current construction permit number: ______________________

Operation permit to be revised: ______________________

[ ] Air operation permit revision or administrative correction for a Title V source to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application. Also check Category III.

Operation permit to be revised/corrected: ______________________

[X] Air operation permit revision for a Title V source for reasons other than construction or modification of an emissions unit. Give reason for the revision; e.g., to comply with a new applicable requirement or to request approval of an "Early Reductions" proposal.

Operation permit to be revised: A029-172179

Reason for revision: Amendment to allow combustion of coal/wood-derived fuel blend.

Category II: All Air Operation Permit Applications Subject to Processing Under Rule 62-210.300(2)(b), F.A.C.

This Application for Air Permit is submitted to obtain:

[ ] Initial air operation permit under Rule 62-210.300(2)(b), F.A.C., for an existing facility seeking classification as a synthetic non-Title V source.

Current operation/construction permit number(s): ____________________

[ ] Renewal air operation permit under Rule 62-210.300(2)(b), F.A.C., for a synthetic non-Title V source.

Operation permit to be renewed: ____________________

[ ] Air operation permit revision for a synthetic non-Title V source. Give reason for revision; e.g., to address one or more newly constructed or modified emissions units.

Operation permit to be revised: ____________________

Reason for revision: ____________________

____

Category III: All Air Construction Permit Applications for All Facilities and Emissions Units

This Application for Air Permit is submitted to obtain:

[ ] Air construction permit to construct or modify one or more emissions units within a facility (including any facility classified as a Title V source).

Current operation permit number(s), if any: ____________________

[ ] Air construction permit to make federally enforceable an assumed restriction on the potential emissions of one or more existing, permitted emissions units.

Current operation permit number(s): ____________________

[ ] Air construction permit for one or more existing, but unpermitted, emissions units.

Application Processing Fee

Check one:

[ ] Attached - Amount: $_________________ [X] Not Applicable.

Construction/Modification Information

1. Description of Proposed Project or Alterations: Tampa Electric Company (TEC) was authorized by FDEP to conduct a test burn of an 80-percent coal/20-percent wood-derived fuel (WDF) fuel blend for comparison to baseline coal emissions (see Attachment A for a copy of the FDEP test burn letters of authorization). TEC conducted the test burn from March 4 through May 27, 1998. The results from the test burn enabled TEC to conduct a screening analysis to determine whether future long-term firing of coal/WDF blends would constitute a modification subject to Prevention of Significant Deterioration (PSD) review pursuant to Chapter 62-212.400, Florida Administrative Code (F.A.C.). The analysis of PSD applicability as shown in Attachment B was conducted by comparing the fuel blend test results with actual past emissions and the 100-percent coal baseline emission test data in accordance with the FDEP authorization letter dated March 20, 1997. This comparison shows that PSD review is not applicable to this permit amendment request. Based on the test burn results, TEC requests the F.J. Gannon Station Unit No. 3 permit be modified to allow for the combustion of coal and WDF blends on a permanent basis as an alternative method of operation to the currently approved use of 100-percent coal. Specifically, approval to combust blends of coal and WDF containing up to 10 weight percent WDF is requested. As indicated, an analysis of PSD applicability along with the complete test burn report are provided in Attachments B and D, respectively. In addition, a no-threat-level guidance analysis is provided in Attachment C for those metals cited in FDEP's test burn approval.
2. Projected or Actual Date of Commencement of Construction: N/A
3. Projected Date of Completion of Construction: N/A

Professional Engineer Certification

1. Professional Engineer Name: Thomas W. Davis Registration Number: 36777
2. Professional Engineer Mailing Address: Organization/Firm: Environmental Consulting & Technology, Inc. Street Address: 3701 Northwest 98th Street City: Gainesville State: Florida Zip Code: 32606
3. Professional Engineer Telephone Numbers: Telephone: (352) 332-0444 Fax: (352) 332-6722

4. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

If the purpose of this application is to obtain a Title V source air operation permit (check here [✓] if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [ ] if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [ ] if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Thomas R. Davis | 8/5/98

Signature | Date

(seal)

* Attach any exception to certification statement.

Application Contact

1. Name and Title of Application Contact: Theresa J.L. Watley Consulting Engineer, Environmental Planning	
2. Application Contact Mailing Address: Organization/Firm: Tampa Electric Company Street Address: 6944 US Highway 41 North City: Apollo Beach State: Florida Zip Code: 33572-9200	
3. Application Contact Telephone Numbers: Telephone: (813) 641-5034	Fax: (813) 641-5081

Application Comment

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates: Zone: 17	East (km): 360.0	North (km): 3,087.5	
2. Facility Latitude/Longitude: Latitude (DD/MM/SS):	Longitude (DD/MM/SS):		
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 49	6. Facility SIC(s): 4911
7. Facility Comment (limit to 500 characters): N/A			

Facility Contact

1. Name and Title of Facility Contact: Cindy Barringer			
2. Facility Contact Mailing Address: Organization/Firm: Tampa Electric Company Street Address: Port Sutton Road City: Tampa	State: Florida	Zip Code: 33619	
3. Facility Contact Telephone Numbers: Telephone: (813) 641-5497	Fax: (813) 641-5566		

Facility Regulatory Classifications

1. Small Business Stationary Source? [ ] Yes	[X] No	[ ] Unknown
2. Title V Source? [X] Yes	[ ] No	
3. Synthetic Non-Title V Source? [ ] Yes	[X] No	
4. Major Source of Pollutants Other than Hazardous Air Pollutants (HAPs)? [X] Yes	[ ] No	
5. Synthetic Minor Source of Pollutants Other than HAPs? [ ] Yes	[X] No	
6. Major Source of Hazardous Air Pollutants (HAPs)? [X] Yes	[ ] No	
7. Synthetic Minor Source of HAPs? [ ] Yes	[X] No	
8. One or More Emissions Units Subject to NSPS? [ ] Yes	[X] No	
9. One or More Emission Units Subject to NESHAP? [ ] Yes	[X] No	
10. Title V Source by EPA Designation? [ ] Yes	[X] No	
11. Facility Regulatory Classifications Comment (limit to 200 characters): N/A		

B. FACILITY REGULATIONS

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

N/A

<u>List of Applicable Regulations</u> (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

A complete listing of all federal and state applicable requirements has been submitted with the initial F.J. Gannon Station Title V permit application.	

C. FACILITY POLLUTANTS

Facility Pollutant Information

1. Pollutant Emitted	2. Pollutant Classification
Provided with the initial F.J. Gannon Station Title V permit application.	

D. FACILITY POLLUTANT DETAIL INFORMATION

Facility Pollutant Detail Information: Pollutant __1__ of __1__

1. Pollutant Emitted: SO2		
2. Requested Emissions Cap:	21,200 (lb/hour)	N/A (tons/year)
3. Basis for Emissions Cap Code: Ambient FDEP Rule 62-296.405(1)(c)2.a., F.A.C.		
4. Facility Pollutant Comment (limit to 400 characters): Hourly emissions cap represents total sulfur dioxide emissions from F.J. Gannon Station Unit No. 1 through Unit No. 6 for a weekly average period. This is an existing requirement per FDEP Rule 62-296.405(1)(c)2.a, F.A.C.		

Facility Pollutant Detail Information: Pollutant ______ of ______

1. Pollutant Emitted:		
2. Requested Emissions Cap:	(lb/hour)	(tons/year)
3. Basis for Emissions Cap Code:		
4. Facility Pollutant Comment (limit to 400 characters):		

E. FACILITY SUPPLEMENTAL INFORMATION

Supplemental Requirements for All Applications

1. Area Map Showing Facility Location: [X] Attached, Document ID: II.E.1.1 [ ] Not Applicable [ ] Waiver Requested
2. Facility Plot Plan: [X] Attached, Document ID: II.E.2.1 [ ] Not Applicable [ ] Waiver Requested
3. Process Flow Diagram(s): [X] Attached, Document ID: II.E.3.1 [ ] Not Applicable [ ] Waiver Requested
4. Precautions to Prevent Emissions of Unconfined Particulate Matter: [ ] Attached, Document ID:________[X] Not Applicable [ ] Waiver Requested
5. Fugitive Emissions Identification: [ ] Attached, Document ID:______ [X] Not Applicable [ ] Waiver Requested
6. Supplemental Information for Construction Permit Application: [ ] Attached, Document ID:______ [X] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

7. List of Proposed Exempt Activities: [ ] Attached, Document ID:______ [X] Not Applicable
8. List of Equipment/Activities Regulated under Title VI: [ ] Attached, Document ID:________ [ ] Equipment/Activities On site but Not Required to be Individually Listed [X] Not Applicable
9. Alternative Methods of Operation: [ ] Attached, Document ID: Described in Application [ ] Not Applicable
10. Alternative Modes of Operation (Emissions Trading): [ ] Attached, Document ID:________ [X] Not Applicable

11. Identification of Additional Applicable Requirements: [ ] Attached, Document ID:________ [X] Not Applicable
12. Compliance Assurance Monitoring Plan: [ ] Attached, Document ID:________ [X] Not Applicable
13. Risk Management Plan Verification: [ ] Plan Submitted to Implementing Agency - Verification Attached, Document ID:________ [ ] Plan to be Submitted to Implementing Agency by Required Date [X] Not Applicable
14. Compliance Report and Plan: [X] Attached, Document ID: _______ [ ] Not Applicable
15. Compliance Certification (Hard-copy Required): [X] Attached, Document ID: _______ [ ] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through L as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application. Some of the subsections comprising the Emissions Unit Information Section of the form are intended for regulated emissions units only. Others are intended for both regulated and unregulated emissions units. Each subsection is appropriately marked.

A. TYPE OF EMISSIONS UNIT
(Regulated and Unregulated Emissions Units)

Type of Emissions Unit Addressed in This Section

1. Regulated or Unregulated Emissions Unit? Check one:

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

2. Single Process, Group of Processes, or Fugitive Only? Check one:

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

B. GENERAL EMISSIONS UNIT INFORMATION
(Regulated and Unregulated Emissions Units)

Emissions Unit Description and Status

1. Description of Emissions Unit Addressed in This Section (limit to 60 characters): Unit No. 3, Solid Fuel Steam Generator		
2. Emissions Unit Identification Number: 003 [ ] No Corresponding ID [ ] Unknown		
3. Emissions Unit Status Code: A	4. Acid Rain Unit? [X] Yes [ ] No	5. Emissions Unit Major Group SIC Code: 49
6. Emissions Unit Comment (limit to 500 characters): N/A		

Emissions Unit Control Equipment

A.

1. Description (limit to 200 characters): Electrostatic precipitator system
2. Control Device or Method Code: 010

B.

1. Description (limit to 200 characters): N/A
2. Control Device or Method Code:

C.

1. Description (limit to 200 characters): N/A
2. Control Device or Method Code:

C. EMISSIONS UNIT DETAIL INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Details

1. Initial Startup Date: N/A	
2. Long-term Reserve Shutdown Date: N/A	
3. Package Unit: N/A Manufacturer:	Model Number:
4. Generator Nameplate Rating:	180 MW
5. Incinerator Information: N/A Dwell Temperature: Dwell Time: Incinerator Afterburner Temperature:	 °F seconds °F

Emissions Unit Operating Capacity

1. Maximum Heat Input Rate:		1,599 MMBtu/hr
2. Maximum Incineration Rate: N/A	lb/hr	tons/day
3. Maximum Process or Throughput Rate: N/A		
4. Maximum Production Rate: N/A		
5. Operating Capacity Comment (limit to 200 characters): Maximum fuel heat input rate of 1,599 MMBtu/hr is on a monthly average basis.		

Emissions Unit Operating Schedule

Requested Maximum Operating Schedule:		
	24 hours/day	7 days/week
	52 weeks/year	8,760 hours/year

D. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

Rule Applicability Analysis (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

N/A

Emissions Unit Information Section 1 **of** 1

List of Applicable Regulations (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

A complete listing of all federal and state requirements for Unit No. 3 has been submitted with the initial F.J. Gannon Station Title V permit application.	

E. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: CS-003	
2. Emission Point Type Code: [X] 1 [ ] 2 [ ] 3 [ ] 4	
3. Descriptions of Emissions Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): N/A	
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: N/A	
5. Discharge Type Code: [ ] D [ ] F [ ] H [ ] P [ ] R [X] V [ ] W	
6. Stack Height:	315 feet
7. Exit Diameter:	10.6 feet
8. Exit Temperature:	290 °F

9. Actual Volumetric Flow Rate:	537,259 acfm
10. Percent Water Vapor : N/A	%
11. Maximum Dry Standard Flow Rate: N/A	dscfm
12. Nonstack Emission Point Height: N/A	feet
13. Emission Point UTM Coordinates: Zone: 17 East (km): 360.0 North (km): 3,087.5	
14. Emission Point Comment (limit to 200 characters):	

F. SEGMENT (PROCESS/FUEL) INFORMATION
(Regulated and Unregulated Emissions Units)

Segment Description and Rate: Segment: 1 of 3

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters): Coal in Unit No. 3.	
2. Source Classification Code (SCC): 1-01-002-03	
3. SCC Units: Tons burned (all solid fuels)	
4. Maximum Hourly Rate: 65.0	5. Maximum Annual Rate: 569,400
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur: 1.3	8. Maximum Percent Ash: 7.9
9. Million Btu per SCC Unit: 25	
10. Segment Comment (limit to 200 characters): No. 2 fuel oil used for ignition during startups (see Segment 3). Fluxing agents may be added to fuel Maximum hourly rate (Field 4), maximum annual rate (Field 5), and Btu/SCC unit (Field 9) based on average heat content of 12,300 Btu/hr. Solid fuel blend may be supplemented with up to 48 gal/min used oil combustion, including liquid oil and oil-contaminated solids (i.e., oil absorbent, oily soil, etc.). Up to 50 gal/min of nonhazardous boiler cleaning waste may be injected into boiler during firing as a routine maintenance activity.	

F. SEGMENT (PROCESS/FUEL) INFORMATION
(Regulated and Unregulated Emissions Units)

Segment Description and Rate: Segment: 2 of 3

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters): Coal/WDF blends in Unit No. 3.	
2. Source Classification Code (SCC): 1-01-002-03	
3. SCC Units: Tons burned (all solid fuels)	
4. Maximum Hourly Rate: 65.0	5. Maximum Annual Rate: 569,400
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur: 1.3	8. Maximum Percent Ash: 7.9
9. Million Btu per SCC Unit: 25	
10. Segment Comment (limit to 200 characters): No. 2 fuel oil used for ignition during startups (see Segment 3). Fluxing agents may be added to fuel Maximum hourly rate (Field 4), maximum annual rate (Field 5), and Btu/SCC unit (Field 9) based on average heat content of 12,300 Btu/hr. Solid fuel blend may be supplemented with up to 48 gal/min used oil combustion, including liquid oil and oil-contaminated solids (i.e., oil absorbent, oily soil, etc.). Up to 50 gal/min of nonhazardous boiler cleaning waste may be injected into boiler during firing as a routine maintenance activity.	

F. SEGMENT (PROCESS/FUEL) INFORMATION
(Regulated and Unregulated Emissions Units)

Segment Description and Rate: Segment: 3 of 3

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) (limit to 500 characters): Distillate (No. 2) fuel oil burned in Unit 3 for startup.	
2. Source Classification Code (SCC): 1-01-005-01	
3. SCC Units: Thousand gallons burned (all liquid fuels)	
4. Maximum Hourly Rate: 1.08	5. Maximum Annual Rate: 700.0
6. Estimated Annual Activity Factor:	
7. Maximum Percent Sulfur: 0.50	8. Maximum Percent Ash:
9. Million Btu per SCC Unit: 136	
10. Segment Comment (limit to 200 characters): No. 2 fuel oil used for ignition during startup. Startup includes cold start, hot start, bringing an additional mill or cyclone into service, maintenance activities, etc. Btu per Scc unit value (Field 9) based on average fuel heat content of 136,280 Btu/gal. Maximum annual rate (Field 5) is estimated based on past practice.	

G. EMISSIONS UNIT POLLUTANTS
(Regulated and Unregulated Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
SO2			EL
NOX			NS
PM	10		EL
PM10	10		NS
CO			NS
VOC			NS
HAPS			NS
H106 HCl			NS
H107 HF			NS
SAM			NS

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Pollutant Detail Information:

1. Pollutant Emitted: SO2		
2. Total Percent Efficiency of Control:		0.0 %
3. Potential Emissions:	3,837.6 lb/hour	16,808.7 tons/year
4. Synthetically Limited? [ ] Yes [X] No		
5. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3		_______ to _______ tons/year
6. Emission Factor: 2.40 lb/MMBtu Reference: Allowable emissions		
7. Emissions Method Code: [X] 0 [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5		
8. Calculation of Emissions (limit to 600 characters): Potential hourly and annual emission rates set equal to equivalent allowable emission rates.		
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters): N/A		

Allowable Emissions (Pollutant identified on front of page)

A.

1. Basis for Allowable Emissions Code: RULE		
2. Future Effective Date of Allowable Emissions: NA		
3. Requested Allowable Emissions and Units: 2.4 lb/MMBtu		
4. Equivalent Allowable Emissions:	3,837.6 lb/hour	16,808.7 tons/year
5. Method of Compliance (limit to 60 characters): Weekly composite fuel sampling and analysis or continuous emissions monitoring, per FDEP Rule 62-296.405(1)(f)1.b, F.A.C.		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters): Requested allowable emissions represent a weekly average, per Specific Condition No. 4 of Permit A029-172179 and FDEP Rule 62-296.405(1)(c)2.a., F.A.C.		

B.

1. Basis for Allowable Emissions Code:		
2. Future Effective Date of Allowable Emissions:		
3. Requested Allowable Emissions and Units:		
4. Equivalent Allowable Emissions:	lb/hr	tons/year
5. Method of Compliance (limit to 60 characters):		
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):		

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Pollutant Detail Information:

1. Pollutant Emitted: PM			
2. Total Percent Efficiency of Control:			99.07 %
3. Potential Emissions:		479.7 lb/hour	875.5 tons/year
4. Synthetically Limited? [ ] Yes [X] No			
5. Range of Estimated Fugitive/Other Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year			
6. Emission Factor: 0.30 lb/MMBtu Reference: Allowable emissions			
7. Emissions Method Code: [X] 0 [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5			
8. Calculation of Emissions (limit to 600 characters): Potential hourly and annual emission rates set equal to equivalent allowable emission rates.			
9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters): N/A			

Allowable Emissions (Pollutant identified on front of page)

A.

1. Basis for Allowable Emissions Code: RULE	
2. Future Effective Date of Allowable Emissions: NA	
3. Requested Allowable Emissions and Units: 0.3 lb/MMBtu	
4. Equivalent Allowable Emissions: 479.7 lb/hour	875.5 tons/year
5. Method of Compliance (limit to 60 characters): Annual testing using EPA Reference Method 5, 5B, or 17.	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters): 0.3 lb/MMBtu applicable during soot-blowing (3 hours per day [hr/day]). 0.1 lb/MMBtu applicable during nonsoot-blowing. Per FDEP Rules 62-210.700(3) and 62-296.405(1)(b), F.A.C. Hourly equivalent allowable emissions based on 0.3 lb/MMBtu. Annual equivalent allowable emissions based on 3 hr/day at 0.3 lb/MMBtu and 21 hr/day at 0.1 lb/MMBtu.	

B.

1. Basis for Allowable Emissions Code:	
2. Future Effective Date of Allowable Emissions:	
3. Requested Allowable Emissions and Units:	
4. Equivalent Allowable Emissions: lb/hr	tons/year
5. Method of Compliance (limit to 60 characters):	
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) (limit to 200 characters):	

I. VISIBLE EMISSIONS INFORMATION
(Regulated Emissions Units Only)

Visible Emissions Limitation: Visible Emissions Limitation 1 of 5

1. Visible Emissions Subtype: VE20			
2. Basis for Allowable Opacity:	[X] Rule	[ ] Other	
3. Requested Allowable Opacity: Normal Conditions: 20 % Maximum Period of Excess Opacity Allowed:	Exceptional Conditions:		27 % 6 min/hour
4. Method of Compliance: Continuous emissions monitoring			
5. Visible Emissions Comment (limit to 200 characters): FDEP Rule 62-296.405(1)(a), F.A.C.			

Visible Emissions Limitation: Visible Emissions Limitation 2 of 5

1. Visible Emissions Subtype: VE60			
2. Basis for Allowable Opacity:	[X] Rule	[ ] Other	
3. Requested Allowable Opacity: Normal Conditions: % Maximum Period of Excess Opacity Allowed:	Exceptional Conditions:		60 % 60 min/hour
4. Method of Compliance: Continuous emissions monitoring.			
5. Visible Emissions Comment (limit to 200 characters): Maximum period of excess opacity allowed for 3 hours in any 24-hour period during soot blowing and load change. FDEP Rule 62-210.700(3), F.A.C.			

I. VISIBLE EMISSIONS INFORMATION
(Regulated Emissions Units Only)

Visible Emissions Limitation: Visible Emissions Limitation __3__ of __5__

1. Visible Emissions Subtype: VE100	
2. Basis for Allowable Opacity: [X] Rule [ ] Other	
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: 100 % Maximum Period of Excess Opacity Allowed: 24 min/hour	
4. Method of Compliance: Continuous emissions monitoring	
5. Visible Emissions Comment (limit to 200 characters): Excess emission resulting from boiler cleaning and load change. Maximum period of excess opacity allowed is four 6-minute periods during a single 3-hour period. FDEP Rule 62-210.700(3), F.A.C.	

Visible Emissions Limitation: Visible Emissions Limitation __4__ of __5__

1. Visible Emissions Subtype: VE100	
2. Basis for Allowable Opacity: [X] Rule [ ] Other	
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: 100 % Maximum Period of Excess Opacity Allowed: 60 min/hour	
4. Method of Compliance: Continuous emissions monitoring.	
5. Visible Emissions Comment (limit to 200 characters): Excess emission resulting from boiler startup and shut down. FDEP Rule 62-210.700(2), F.A.C.	

I. VISIBLE EMISSIONS INFORMATION
(Regulated Emissions Units Only)

Visible Emissions Limitation: Visible Emissions Limitation 5 of 5

1. Visible Emissions Subtype: VE100	
2. Basis for Allowable Opacity: [X] Rule [ ] Other	
3. Requested Allowable Opacity: Normal Conditions: 20 % Exceptional Conditions: 100 % Maximum Period of Excess Opacity Allowed: 60 min/hour	
4. Method of Compliance: Continuous emissions monitoring	
5. Visible Emissions Comment (limit to 200 characters): Excess emission resulting from startup, shutdown, and malfunction. Maximum period of excess opacity allowed is 2 hours during any 24-hour period. FDEP Rule 62-210.700(1), F.A.C.	

Visible Emissions Limitation: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:	
2. Basis for Allowable Opacity: [ ] Rule [ ] Other	
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment (limit to 200 characters):	

J. CONTINUOUS MONITOR INFORMATION
(Regulated Emissions Units Only)

Continuous Monitoring System: Continuous Monitor __1__ of __5__

1. Parameter Code: VE	2. Pollutant(s): NA
3. CMS Requirement:	[X] Rule [ ] Other
4. Monitor Information: Manufacturer: Thermo Environmental Corporation Model Number: M400 Serial Number: 400B-3500	
5. Installation Date: 10/01/93	
6. Performance Specification Test Date:	
7. Continuous Monitor Comment (limit to 200 characters): Required by FDEP Rule 62-296.405(1)(f)1.a, F.A.C., and 40 CFR 75. System includes one opacity monitor.	

Continuous Monitoring System: Continuous Monitor __2__ of __5__

1. Parameter Code: EM	2. Pollutant(s): SO2
3. CMS Requirement:	[X] Rule [ ] Other
4. Monitor Information: Manufacturer: Thermo Environmental Corporation Model Number: 43B Serial Number: 43B-48171-279	
5. Installation Date: 07/01/94	
6. Performance Specification Test Date:	
7. Continuous Monitor Comment (limit to 200 characters): Required by FDEP Rule 62-296.405(1)(f)1.b, F.A.C., and 40 CFR 75. System includes one SO_2 monitor with a backup system shared among Emissions Unit Nos. 1, 2, and 3.	

J. CONTINUOUS MONITOR INFORMATION
(Regulated Emissions Units Only)

Continuous Monitoring System: Continuous Monitor 3 of 5

1. Parameter Code: EM	2. Pollutant(s): NA
3. CMS Requirement:	[X] Rule [ ] Other
4. Monitor Information: Manufacturer: Thermo Environmental Corporation Model Number: 42D	Serial Number: 42D-47872-279
5. Installation Date: 07/01/94	
6. Performance Specification Test Date:	
7. Continuous Monitor Comment (limit to 200 characters): Required by 40 CFR 75. System includes one NO_x monitor with a backup system shared among Emissions Unit Nos. 1, 2, and 3.	

Continuous Monitoring System: Continuous Monitor 4 of 5

1. Parameter Code: FLOW	2. Pollutant(s): NA
3. CMS Requirement:	[X] Rule [ ] Other
4. Monitor Information: Manufacturer: USI Model Number: Ultraflow 100	Serial Number: 9401629
5. Installation Date: 07/01/94	
6. Performance Specification Test Date:	
7. Continuous Monitor Comment (limit to 200 characters): Required by 40 CFR 75. System includes one flow monitor.	

J. CONTINUOUS MONITOR INFORMATION
(Regulated Emissions Units Only)

Continuous Monitoring System: Continuous Monitor 5 of 5

1. Parameter Code: CO2	2. Pollutant(s): NA
3. CMS Requirement:	[X] Rule [ ] Other
4. Monitor Information: Manufacturer: Siemens Model Number: Ultramat 5E	Serial Number: E3-727
5. Installation Date: 07/01/94	
6. Performance Specification Test Date:	
7. Continuous Monitor Comment (limit to 200 characters): Required by 40 CFR 75. System includes one CO_2 monitor with a backup system shared among Emissions Unit Nos. 1, 2, and 3.	

Continuous Monitoring System: Continuous Monitor ______ of ______

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number:	Serial Number:
5. Installation Date:	
6. Performance Specification Test Date:	
7. Continuous Monitor Comment (limit to 200 characters):	

K. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT TRACKING INFORMATION
(Regulated and Unregulated Emissions Units)

PSD Increment Consumption Determination

1. Increment Consuming for Particulate Matter or Sulfur Dioxide?

   If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

   [ ] The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.

   [X] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

2. Increment Consuming for Nitrogen Dioxide?

   If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

   [ ] The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

   [ ] For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.

   [X] None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

3. Increment Consuming/Expanding Code:			
PM	[ ] C	[ ] E	[ ] Unknown
SO2	[ ] C	[ ] E	[ ] Unknown
NO2	[ ] C	[ ] E	[ ] Unknown
4. Baseline Emissions:			
PM		lb/hour	tons/year
SO2		lb/hour	tons/year
NO2			tons/year
5. PSD Comment (limit to 200 characters):			
Emission unit is part of baseline PSD emission inventory. Use of coal/WDF blends will result in a net decrease in emissions in comparison to 100-percent baseline coal.			

Emissions Unit Information Section __1__ of __1__

L. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements for All Applications

1.	Process Flow Diagram [X] Attached, Document ID: II.E.3.1 [ ] Not Applicable [ ] Waiver Requested
2.	Fuel Analysis or Specification [ ] Attached, Document ID:________ [X] Not Applicable [ ] Waiver Requested
3.	Detailed Description of Control Equipment [ ] Attached, Document ID:______ [X] Not Applicable [ ] Waiver Requested
4.	Description of Stack Sampling Facilities [ ] Attached, Document ID:________ [X] Not Applicable [ ] Waiver Requested
5.	Compliance Test Report [ ] Attached, Document ID:________ [ ] Previously submitted, Date:______________ [X] Not Applicable
6.	Procedures for Startup and Shutdown [ ] Attached, Document ID:________ [X] Not Applicable
7.	Operation and Maintenance Plan [ ] Attached, Document ID:________ [X] Not Applicable
8.	Supplemental Information for Construction Permit Application [ ] Attached, Document ID:________ [X] Not Applicable
9.	Other Information Required by Rule or Statute [ ] Attached, Document ID:________ [X] Not Applicable

Additional Supplemental Requirements for Category I Applications Only

10. Alternative Methods of Operation [ ] Attached, Document ID:________ [X] Not Applicable
11. Alternative Modes of Operation (Emissions Trading) [ ] Attached, Document ID:________ [X] Not Applicable
12. Identification of Additional Applicable Requirements [ ] Attached, Document ID:________ [X] Not Applicable
13. Compliance Assurance Monitoring Plan [ ] Attached, Document ID:________ [X] Not Applicable
14. Acid Rain Application (Hard-copy Required) [ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID:________ [ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID:________ [ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID:________ [ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID:________ [X] Not Applicable

ATTACHMENT A

FDEP TEST BURN AUTHORIZATION LETTERS

BEST AVAILABLE COPY

PA 9

Department of Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell
Secretary

CERTIFIED MAIL
Ms. Laura A. Rector
Engineer, Environmental Planning
Tampa Electric Company
Post Office Box 111
Tampa, FL 33619

RECEIVED
MAR 20 1997
ENVIRONMENTAL PLANNING

Re: Tampa Electric Company
F.J. Gannon Station Unit No. 3
Letter of Authorization to Conduct
Paper Pellets/Yard Trash/Wood Chips Test Burn
FDEP Permit No. AO29-172179

Dear Ms. Rector:

The Department has reviewed the request dated August 20, 1996. We have also considered the Department's legal authority to allow Tampa Electric Company (TEC) F. J. Gannon Unit 3 to conduct the performance test. Paragraph 403.061(15), Florida Statutes (F.S.) authorizes the Department to consult with any person proposing to construct, install or otherwise acquire a pollution control device or system concerning the efficacy of such device or system, or the pollution problem which may be related to the source, device, or system. Paragraph 403.061(16), F.S., authorizes the Department to encourage voluntary cooperation by persons in order to achieve the purposes of the state environmental control act. Paragraph 403.061(18), F.S., authorizes the Department to encourage and conduct studies, investigations, and research relating to causes and control of pollution. Florida Administrative Code (F.A.C.) Rule 62-210.700(5) authorized the Department to consider variation in industrial equipment and make allowance for excess emissions that provide practical regulatory controls consistent with the public interest.

Ms. Laura A. Rector
Tampa Electric Company

In accordance with the provisions of Paragraphs 403.061(15), (16), and (18), F.S., you are hereby authorized to conduct performance tests for pollutant emissions of F. J. Gannon Unit 3 while firing a blend of paper pellets/yard trash/wood chips and coal (herein after referred to as fuel blend).

Emissions tests are being proposed in order to gather data regarding pollutant emissions while firing a blend of the above materials. Screening to determine whether this change results in a modification or to determine Prevention of Significant Deterioration (PSD) applicability shall be in accordance with Chapter 403, F.S.; F.A.C. Chapters 62-210 through 62-297, and 62-4; and, Title 40 Code of Federal Regulations (CFR; July, 1993 version), which will compare the actual pollutant emissions of the performance tests while firing the fuel blend and while firing coal only. The performance test results will be evaluated by Southwest District and involved parties (i.e., Bureau of Air Regulation (BAR), Environmental Protection Commission of Hillsborough County (EPHC), etc.).

The performance tests shall be subject to the following conditions:

1. The permittee shall notify, in writing, the Southwest District and EPCHC at least 15 days prior to commencement of each of the 1)baseline coal and 2)trial fuel blend performance tests so that each has the opportunity to conduct a Type II stack audit. Two copies of the written report shall be submitted to both agencies within 45 days upon completion of the last test run.

2. Baseline performance testing during coal-only firing shall be conducted over a seven-day period. Baseline emissions testing shall be conducted during this time, with all test runs completed within 5 consecutive days. The trial fuel blend performance testing shall be conducted for not more than 21 days. Fuel blend emissions testing shall be within 5 consecutive days. All testing shall be conducted within 60 days after the date the fuel blend is first introduced into Gannon Unit 3. All testing shall be concluded by the 60th day after first introducing fuel blend into Unit 3, or as modified by letter. The coal utilized in Unit 3 during all

testing shall be typical of previous fuels. This shall be demonstrated by submittal of a composite analysis of coal burned in this unit for the previous twelve months.

3. As-burned fuel samples shall be obtained daily and composited and tested weekly. In the event that a fuel change is made in mid-week, samples collected prior to and after the change shall be composited separately. All coal and fuel blend analysis shall include the following parameters:

Sulfur, wt. %	Arsenic
Volatiles, wt. %	Beryllium
Nitrogen, wt. %	Chromium
Ash, wt. %	Lead
Heat Content, Btu/lb.	Nickel
Carbon, wt. %	Vanadium
Moisture, wt. %	Zinc
	Chlorides

Coal used for the baseline tests and trial burn test shall be conducted with coal that has the same typical heat content, sulfur content, and other measured parameters as determined by comparison to the annual coal composite analysis. The coal utilized in Unit #3 shall be typical of previous fuels in heat content, ash content, and origin. This condition shall be demonstrated through a submittal of a composite analysis of coal utilized in this unit for the previous year and noting the origin of the coal.

4. Paper pellets/yard trash/wood chips shall be blended with coal during the trial performance tests in the following concentration: *During emissions testing, trial fuel blend operation shall be 8%-10% by weight (as-received basis) paper pellets, 8%-10% by weight (as-received basis) yard trash/wood chips, with the remainder being coal of a character normally burned in the unit.* The sulfur content of the blend shall not exceed 1.3 percent, by weight (dry basis). *The maximum non-coal material permitted shall be 20% by weight of total fuel burned.*

5. The total weight of the paper pellets/yard trash/wood chips burned during the performance tests shall not exceed 15.0 tons/hour (hourly basis) on an as-received basis for a maximum total usage during the twenty-one (21) day test period of 1800 tons.

6. Opacity,SO2,and NOx shall be recorded using continuous emissions monitors (CEMS) during the baseline and performance tests. The monitoring systems shall be quality-assured pursuant to 40 CFR 75, Appendix B. The data from ecent relative accuracy test audit (RATA) and cylinder gas audit shall be submitted with the test reports.

7. All operating parameters which may effect emissions must be constant to the maximum degree feasible for all test runs.

No other substances, e.g., No. 2 fuel oil, used oil, oily soil, oil-contaminated materials, boiler cleaning waste, etc., shall be burned, except any necessary for boiler operation, e.g., fluxing agents. If any other substances are burned, this shall be held constant and reported in the test report.

Emissions tests shall be conducted using EPA Methods, as contained in 40 CFR 60 (Standards of Performance for New Stationary Source), or 40 CFR 61 (National Emission Standards for Hazardous Air Pollutants), or any other method approved by the Department in Accordance with F.A.C. Rule 62-297.620. Tests to be performed and the test methods are listed in Table 1 of this letter. *Analysis of the test results should be performed using the "Student t" test per 40 CFR 60, Appendix* C. Any change to the test methods must receive prior approval of the Department and review by the EPCHC. A test report shall be submitted the Department and EPCHC within 45 days of completion of the last test run performed during fuel blend test burn period. Records specified in Condition No. 10 shall be included in the test reports. Details of the supplemental fuel processing, contract specifications on contaminant content, and procedures used to assure exclusion of prohibited materials should also accompany the test reports.

8. The test burn shall be completed within sixty (60) days of the first introduction of fuel blend into Gannon Unit No. 3. If additional time is needed, the permittee shall request an extension of time from the Department, and provide the Department and the EPCHC with documentation of the progress accomplished to date, and shall identify what is left to be done to complete the performance tests.

9. Daily accounting of boiler operations while firing the fuel blend and while firing coal only during the baseline test shall be required. Any change in fuel pretreatment (i.e. flux addition) or in the type or degree of pre-precipitator flue gas conditioning shall be considered as part of this accounting.

10. Complete documentation (recording) of operating conditions and any operational changes during all emissions testing shall include, but not be limited to, the following data:

    A. Input rates of each fuel (paper pellets, yard trash, wood/wood chips, and coal).
    B. Heat input in MMBtu/Hr.
    C. Opacity, Nox, and SO_2 CEM data (Nox and SO_2 shall be reported in pounds per MMBtu on an hourly average basis).
    D. Pertinent boiler/ESP operating conditions.
    E. Gross megawatt power output.
    F. Percent excess oxygen.

11. The authorized trial fuel blend performance test shall not result in the release of objectionable odors pursuant to F.A.C. Rule 62-296.320(2).

12. Performance testing shall immediately cease if Gannon Unit 3 operations are not in accordance with the conditions in the applicable permit. Performance testing shall not resume until appropriate measures to correct the problem have been implemented.

13. The performance tests for pollutant emissions shall be conducted under the direct supervision and responsible charge of a professional engineer registered in Florida. The professional engineer shall sign and seal each copy of the stack test report.

14. This Department action is only to authorize the performance of a single trial fuel blend boiler performance/emissions test.

15. The Department and EPCHC shall be notified in writing on the date of the last test run completion.

16. The performance tests series shall include individual tests for the fuel blend and a baseline (coal fired only) test conducted with the source operating under normal load control and at capacity. Capacity is defined as 90-100 percent of the permitted heat input. If it is impracticable to test at this capacity, the source may be tested at less than capacity; in this case subsequent source operation with a fuel blend, if requested and approved by the Department, is limited to 110 percent of the test load until a new test is conducted. Operation at less than 90 percent capacity shall not be grounds for rejecting the test results. If normal operation during baseline testing includes flyash re-injection, than flyash shall be injected at the same rate during fuel blend testing. Operation with fuel blend shall be limited to the individual percentages of the three supplemental fuels fed during the fuel blend emissions testing.

17. The material comprising the paper pellets, yard trash, wood/ wood chips shall be defined as follows:

<u>*Paper Pellets*</u> - Pellets consisting of paper, cardboard, and polymer-impregnated or coated paper, such as disposable drinking cups, paper plates, etc. No materials coated or treated with listed hazardous substances including, but not limited to, tar, asphalt, and coatings containing heavy metals. Pellets shall be free of hazardous substances and as free as practicable of metal, hard plastics, textiles, and food products.

<u>*Yard Trash*</u> - Shall be as defined in Rule 62-701.200(90), F.A.C. and shall contain only vegetative matter resulting from landscaping maintenance or land clearing operations and includes materials such as tree and shrub trimmings, grass clippings, palm fronds, trees and tree stumps.

<u>*Wood/Wood Chips*</u> - Derived from clean wood lumber, pallets, construction debris free of listed hazardous substances including, but not limited to, pentachlorophenol, creosote, tar, asphalt, and paint containing heavy metals.

18. *Pursuant to Section 403.815, F.S. and Rule 62-103.150, F.A.C., you (the applicant) are required to publish, at your own expense, the enclosed Notice of Intent to Issue Permit. The notice will be published one time only within 30 days, in the legal ad section of a newspaper of general circulation in the area affected. For the purposes of this rule "publication in a newspaper of general circulation in the affected area" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031. F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed above. The applicant shall provide proof of publication to the Department, at 3804 Coconut Palm Drive, Tampa Florida 33619 within seven days of publication. Failure to publish the notice and provide proof*

> *of publication within the allotted time may result in the denial of the permit proof of publication to the Department, at 3804 Coconut Palm Drive, Tampa Florida 33619 within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.*

The Department will issue the authorization with the above conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S. The Department intends to issue this authorization based on the belief reasonable assurances have been provided to indicate the proposed project will comply with the appropriate provisions of Florida Statutes (F.S.) Chapter 403 and Florida Administrative Code (F.A.C.) Chapters 62-210 through 62-297 & 62-4.

The Department's action will be final unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 of the Florida Statutes, or a party requests mediation as an alternative remedy under section 120.573 before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any other person must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 of the Florida Statues, or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following:

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department's proposed action, and the county in which the action is proposed;
(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
(d) A statement of the material facts disputed by the petitioner, if any;
(e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action;
(f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and
(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the action or proposed action addressed in the attached letter.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the proposed action have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information:

(a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any;
(b) A statement of the preliminary agency action;
(c) A statement of the relief sought; and
(d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following:

(a) The names, addresses, and telephone numbers of any persons who may attend the mediation;
(b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time;
(c) The agreed allocation of the costs and fees associated with the mediation;
(d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation;
(e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen;
(f) The name of each party's representative who shall have authority to settle or recommend settlement; and
(g) The signatures of all parties or their authorized representatives.

As provided in section 120.573 of the Florida Statutes, the timely agreement of all parties to mediate will toll the time limitations imposed by sections 120.569 and 120.57 for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such a modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under sections 120.569 and 120.57 remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under section 120.542 of the Florida Statutes. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000. The petition must specify the following information:

(a) The name, address, and telephone number of the petitioner;
(b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any;
(c) Each rule or portion of a rule from which a variance or waiver is requested;

(d) The citation to the statute underlying (implemented by) the rule identified in © above;
(e) The type of action requested;
(f) The specific facts that would justify a variance or waiver for the petitioner;
(g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and
(h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in section 120.542(2) of the Florida Statutes, and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of EPA and by the person under the Clean Air Act unless and until Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tampa, Florida

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

For Richard D. Garrity, Ph.D.
Director of District Management

Copies furnished to: Bureau of Air Regulation
Hillsborough County EPC

Ms. Laura A. Rector
Tampa Electric Company

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this AUTHORIZATION and all copies were mailed before the close of business on 3-18-97 to the listed persons.

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Yvonne Bonnie Rizzo 3-18-97
Clerk Date

woodteco.let

TABLE 1

TAMPA ELECTRIC CORPORATION F.J. GANNON STATION UNIT 3

PERFORMANCE TEST METHODS WITH COAL AND FUEL BLEND

POLLUTANT	TEST METHOD
Particulate Matter	EPA Method 17
Sulfur Dioxide	EPA Method 6 or 6C & CEM Data
Sulfuric Acid Mist	EPA Method 8
Nitrogen Oxides	CEM Data*
Total Non-methane VOC**	EPA Method 25A
Stack Gas Flow	EPA Method 2
Stack Gas Moisture	EPA Method 4
Hydrochloric Acid (HCl)	EPA Method 26
Opacity	EPA Method 9

*CEM data will be in the form of daily averages
**More comprehensive testing for specific organic compounds may be required if the test shows a significant increase in VOC.

Specified tests are to be conducted for the fuel blend with the maximum sulfur content, by weight, fired in the boiler while operating at capacity or in accordance with Condition 16 of this letter. Baseline tests are to be conducted while firing with the 1.3 percent by weight (dry basis) sulfur coal and while operating at capacity in accordance with Condition 16 of this letter. Stack testing will consist of three (3) test runs under sootblowing conditions for each parameter tested. Tests conducted during sootblowing (worst case) conditions shall also demonstrate non-sootblowing emissions.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO ISSUE AUTHORIZATION

The Department of Environmental Protection gives notice of its intent to issue a Letter of Authorization to Tampa Electric Company to permit a test burn of a fuel blend derived from approximately 20% paper pellets, yard trash, wood chips, and approximately 80% coal by weight in F.J. Gannon Station Unit No. 3. The facility is located at Port Sutton, Tampa, Hillsborough County. MAILING ADDRESS - Tampa Electric Company, Post Office Box 111, Tampa, FL 33619, to the attention of Laura A. Rector, Engineer, Environmental Planning.

A Best Available Control Technology (BACT) determination was not required.The Department's action will be final unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 of the Florida Statutes, or a party requests mediation as an alternative remedy under section 120.573 before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any other person must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 of the Florida Statues, or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following:

a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department's proposed action, and the county in which the action is proposed;
(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
(d) A statement of the material facts disputed by the petitioner, if any;
(e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action;
(f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and
(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the action or proposed action addressed in the attached letter.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the proposed action have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information:

(a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any;
(b) A statement of the preliminary agency action;
(c) A statement of the relief sought; and

(d) Either an exp nation of how the request 's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following:

(a) The names, addresses, and telephone numbers of any persons who may attend the mediation;
(b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time;
(c) The agreed allocation of the costs and fees associated with the mediation;
(d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation;
(e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen;
(f) The name of each party's representative who shall have authority to settle or recommend settlement; and
(g) The signatures of all parties or their authorized representatives.

As provided in section 120.573 of the Florida Statutes, the timely agreement of all parties to mediate will toll the time limitations imposed by sections 120.569 and 120.57 for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such a modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under sections 120.569 and 120.57 remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under section 120.542 of the Florida Statutes. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waive ioes not substitute or ext d the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000.

The petition must specify the following information:

(a) The name, address, and telephone number of the petitioner;
(b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any;
(c) Each rule or portion of a rule from which a variance or waiver is requested;
(d) The citation to the statute underlying (implemented by) the rule identified in © above;
(e) The type of action requested;
(f) The specific facts that would justify a variance or waiver for the petitioner;
(g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and
(h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in section 120.542(2) of the Florida Statutes, and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of EPA and by the person under the Clean Air Act unless and until Administrator separately approves any variance or waiver in accordance with the procedures of the federal program. DEPARTMENT CONTACT: William E. Schroeder, Permitting Engineer.

DEPARTMENT OF ENVIRONMENTAL PROTECTION
FLORIDA

Department of Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell
Secretary

October 15, 1997

~~Via Certified Mail~~
Ms. Teresa Watley
Engineer
Environmental Planning
Tampa Electric Company
Post Office Box 111
Tampa, FL 33601-0111

RECEIVED
OCT 16 1997
ENVIRONMENTAL PLANNING

RE: Wood Derived Fuel (WDF) Test Burn
Gannon Station Unit 3

Dear Ms. Watley:

The Department has reviewed your request to "reset" the clock on the above test burn due to unforseen operational problems with the alternate fuel. The Department has no objection to re-starting the project due to the small amount of material burned to date. Therefore, the sixty (60) day burn window may begin upon written notification to the Department and the Environmental Protection Commission of Hillsborough County, as per the original authorization letter. Baseline emissions testing on coal only shall be repeated, and all emissions testing during the twenty-one (21) days of WDF firing shall be completed within five (5) consecutive days.

All requirements of the original Letter of Authorization shall apply, and all applicable criteria (use of coal of similar character as used during baseline testing, etc.) as specified in the Letter of Authorization issued March 18, 1997, the Gannon Unit 3 operating permit, and Chapter 62-297, F.A.C. have been met.

Mr. Rick Kirby of EPCHC has been consulted regarding this request. Also, because public notice has already been published for this project, new publication will not be necessary.

Please note, however, that any changes in fuel handling or boiler operation made to accommodate WDF, and which may be construed as a modification, will require permitting.

Should you have any questions, please contact Bill Schroeder of my staff at (813) 744-6100 Ext. 104.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

W.C. Thomas, P.E.
District Air Program Administrator

WCT/WES/ws

cc: Gannon 3 File
Rick Kirby, P.E. , EPCHC

Department of Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell
Secretary

March 31, 1998

RECEIVED

APR 9 1998

ENVIRONMENTAL PLANNING

Via Certified Mail
Ms. Teresa Watley
Engineer
Environmental Planning
Tampa Electric Company
Post Office Box 111
Tampa, FL 33601-0111

RE: Wood Derived Fuel (WDF) Test Burn
Gannon Station Unit 3

Dear Ms. Watley:

The Department has reviewed your request to extend the time window for the above test burn due to due to scheduled annual compliance testing elsewhere at Gannon Station. The Department has no objection to the extension. Therefore, the sixty (60) day burn window may be extended thirty (30) days until June 4, 1998.

All requirements of the original Letter of Authorization shall apply, and all applicable criteria (use of coal of similar character as used during baseline testing, etc.) as specified in the Letter of Authorization issued March 18, 1997, the Gannon Unit 3 operating permit, and Chapter 62-297, F.A.C. have been met.

Mr. Rick Kirby of EPCHC has been consulted regarding this request. Also, because public notice has already been published for this project, new publication will not be necessary.

Should you have any questions, please contact Bill Schroeder of my staff at (813) 744-6100 Ext. 104.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

W.C. Thomas, P.E.
District Air Program Administrator

WCT/WES/ws
cc: Gannon 3 File
Rick Kirby, P.E., EPCHC

ATTACHMENT B

PSD APPLICABILITY ANALYSIS

PSD Applicability Analysis for Sulfur Dioxide, Nitrogen Oxides, and Particulate Matter

Pollutant	Actual Annual Heat Input[1]			Actual Annual Emissions[1]			10 pct of Actual Annual Emission	Material Content in Fuel Ratio[2]	Maximum Heat Input from WDF[3]	Actual Emission Rate	Potential WDF Annual Emission	Change	Significant Emission Rate
	1996 (MMBtu/yr)	1997 (MMBtu/yr)	Average (MMBtu/yr)	1996 (tpy)	1997 (tpy)	Average (tpy)	(tpy)		(MMBtu/yr)	(lb/MMBtu)	(tpy)	(tpy)	(tpy)
Sulfur dioxide	5,981,932	10,073,570	8,027,751	6,400	9,772	8,086	808.6	0.1364	1,400,724	2.0145	192.4	-616.2	40
Nitrogen oxides	5,981,932	10,073,570	8,027,751	5,517	5,093	5,305	530.5	0.4540	1,400,724	1.3217	420.2	-110.3	40
Particulate matter	5,981,932	10,073,570	8,027,751	104	150	127	12.7	1.2316	1,400,724	0.0316	27.3	14.6	25
Respirable particulate matter	5,981,932	10,073,570	8,027,751	104	150	127	12.7	1.2316	1,400,724	0.0316	27.3	14.6	15

PSD Applicability Analysis for Beryllium, Lead, and Sulfuric Acid Mist

Pollutant	Actual Emission Rate[4] (lb/MMBtu)	Actual Annual Heat Input[1] (MMBtu/yr)	Actual Annual Emission (tpy)	10 pct of Actual Annual Emission (tpy)	Material Content in Fuel Ratio[5]	Maximum Heat Input from WDF[3] (MMBtu/yr)	Emission Rate (lb/MMBtu)	Potential WDF Annual Emission (tpy)	Change (tpy)	Significant Emission Rate (tpy)
Beryllium	2.24E-07	8,027,751	8.99E-04	8.991E-05	1.3387	1,400,724	2.24E-07	2.10E-04	1.20E-04	4.00E-04
Lead	3.58E-06	8,027,751	1.44E-02	1.44E-03	0.8468	1,400,724	3.58E-06	2.12E-03	6.86E-04	6.00E-01
Sulfuric Acid Mist	0.04	8,027,751	160.6	16.1	0.1190	1,400,724	0.040	3.3	-12.7	7

[1]From TEC Annual Operating Reports for 1996 and 1997.

[2]Ratio of sulfur, nitrogen, and ash in paper pellets vs. coal, dry basis. Based on paper pellet sample I.D. No. AA43968 analysis and coal sample I.D. No. AA43034 analysis.

[3]Based on obtaining 10 percent of the heat input from paper pellets over the period of 1 year (1,599 MMBtu/hr x 8,760 hr/yr x 0.1 = 1,400,724 MMBtu/yr).

[4]From attached Baseline Test Metals Emission Rate table for beryllium and lead. From Data Summary Table, Stack Test Report for sulfuric acid mist.

[5]Ratio of beryllium, lead, and sulfur in paper pellets vs. coal, dry basis. Based on paper pellet sample I.D. No. AA43968 analysis and coal sample I.D. No. AA43034 analysis.

F.J. Gannon Station Unit No. 3
Coal WDF Test Burn
Baseline Test Metals Emission Rate

Metal	Content in Blend Ash (μg/g)	PM Emission Rate (lb/hr)	Metal Emisison Rate[1]	
			(lb/hr)	(lb/MMBtu)
Beryllium	7.6	44.20	0.00034	2.24E-07
Lead	121.3	44.20	0.00536	3.58E-06

[1]Based on heat input rate of 1,498.8 MMBtu/hr measured during baseline test.

ATTACHMENT C

TOXIC AIR POLLUTANT AMBIENT REFERENCE CONCENTRATION ANALYSIS

F.J. Gannon Station Unit No. 3
Coal WDF Test Burn
Ambient Impact Comparison to Ambient Reference Concentrations

Metal	Content in Blend Ash[1] (μg/g)	PM Emission Rate[2] (lb/hr)	PM Emission Rate[2] (g/sec)	Metal Emission Rate (lb/hr)	Metal Emission Rate (g/sec)	1-hr Ambient Metal Concentration ($\mu g/m^3$)	Ambient Reference Concentration No-Threat Level 8-hr ($\mu g/m^3$)	24-hr ($\mu g/m^3$)	Annual ($\mu g/m^3$)
Arsenic	68	47.97	6.04	0.00326	0.0004110	0.00045	0.01	0.02	0.00023
Beryllium	7.6	47.97	6.04	0.00036	0.0000459	0.00005	0.02	0.005	0.00042
Chromium III[3]	189.8	47.97	6.04	0.00910	0.0011472	0.00126	5	1.2	1,000
Chromium VI[4]	20.9	47.97	6.04	0.00100	0.0001262	0.000138	0.5	0.1	0.000083
Lead	121.3	47.97	6.04	0.00582	0.0007332	0.00080	0.5	0.1	0.090
Nickel	105.3	47.97	6.04	0.00505	0.0006365	0.00070	10	2.4	0.0042
Vanadium	341.2	47.97	6.04	0.01637	0.0020623	0.00226	0.5	0.1	20
Zinc	628.2	47.97	6.04	0.03013	0.0037970	0.00417	50	12	None

[1]Fuel blend analysis data from Table 3, Wood Derived Fuel Emission Test Report, TEC, July 10, 1998.

[2]Calculated based on measured fuel blend emission rate for particulate matter (0.03 lb/MMBtu) and maximum permitted heat input rate (1,599 MMBtu/hr).

[3]Conservatively assumes that all chromium is trivalent.

[4]Conservatively assumes that 11 percent of chromium is hexavalent.

[5]To convert 1-hr ambient metal concentrations (in ug/m3) to 8-hr, 24-hr, and annnual averaging periods, multiply the 1-hr impacts by 0.7, 0.4, and 0.08, respectively.

F.J. Gannon Station Unit 3
SCREEN3 Dispersion Modeling
Stack Input Parameters

Parameter	Dimension	Units
Stack Height	96	meters
Stack Diameter	3.20	meters
Stack Gas Velocity	34.60	meters/sec
Stack Gas Temperature	406	Kelvin
Downwash Structure		
Height	50.2	meters
Width	45	meters
Length	250	meters

ATTACHMENT D

TEST BURN REPORT

SUPPLEMENTAL FUEL DETAILS

Supplemental Fuel Details

Specifications

Consistent with the F.J. Gannon Unit #3 Test Burn Authorization, all Wood Derived Fuel supplier contracts will adhere to the following specifications.

The material comprising Wood-Derived Fuel shall consist of paper pellets, yard trash, and wood/wood chips as defined below:

Paper Pellets shall consist of paper, cardboard, and polymer-impregnated or coated paper, such as disposable drinking cups, paper plates, etc. No materials coated or treated with listed hazardous substance including, but not limited to, tar, asphalt, and coatings containing heavy metals. Pellets shall be free of hazardous substances and as free as practicable of metal, hard plastics, textiles and food products.

Yard trash shall be as defined in Rule 62-701.200(90), F.A.C. and shall contain only vegetative matter resulting from landscaping maintenance or land clearing operations and includes materials such as tree and shrub trimmings, grass clippings, palm fronds, trees and tree stumps.

Wood/Wood Chips shall be derived from clean wood lumber, pallets, construction debris free from listed hazardous substances including, but not limited to, pentachlorophenol, creosote, tar, asphalt, and paint containing heavy metals.

Processing

The following describes a typical waste separation process for Paper Pellets.

Waste is collected and dumped at the processing facility by the same collection vehicles normally used to transport waste to the landfills, transfer stations and/or incinerators. A front steer loader then takes the waste and creates a "clean" pile by repeatedly lifting and dropping the material. This allows the operator to discover any large items determined to be incompatible with the processing system. Incompatible item may include large metal objects, crates, tires, car batteries, wood, bricks, etc.

From the clean pile the waste is fed into the feed hopper. In the bottom of the hopper is a dragline that moves material up the incline and under the flow leveler. This spreads the material evenly across the six foot conveyor and allows the workers to identify any additional incompatibles, (i.e., banding wire, strapping, long plastic sheets, etc.) before they enter the bag breaker.

The bag breaker is a series of flail hammers that rip the bags into six-inch plus strips and spill the contents across the incline feed conveyor. Here a worker can easily identify any materials that were inside the bags and remove them either for recyclable value or because they are incompatible with the automated separation process.

The waste material then enters the separation system. The first module in the separation system is the ferrous extractor. Waste is deposited onto the first of three short conveyor belts. The head roller in each of these belts is stationary magnet. Anything ferrous will hold onto the head roller through the belt and move under the roller until the belt removes the metal away from the magnetic force. The metal then drops to a long conveyor int the bottom of the module. The small conveyors are arranged in a cascading pattern. Any materials on the first conveyor that are unaffected by the first roller will cascade onto the second roller and be closer to the magnet. This happens again for a third pass providing for ferrous removal of greater than 95%. The metals are dropped onto a bottom conveyor with another magnetic roller and an air knife that blows paper and other non-ferrous materials back onto the process line. After the metals exit the system they are taken one more pass over a magnetic head roller that deposits contaminants in one bin and a clean ferrous product in another for resale or other processing.

The waste materials then proceed over a 22 inch gap in the conveyor. An air classifier is blowing air through the gap and conveying the lighter waste materials over the void to the continuing conveyor. Heavier items, such as rocks, lumber, and broken glass, fall below and are transferred to the reject conveyor.

The next module consists of a disc screen. This is a series of oscillating trapezoidal tumblers. The spline on the disc are interlocked; the organic materials such as food waste, grass, dust, dirt, small bits of wet paper, etc. fall through hundreds of gaps in the disc screening process. This material is captured on a large conveyor underneath the module and deposited on an incline conveyor to be screened through a 2 x 4 inch trammel screen. Materials larger than 2x4 inches are rejected from the organic stream and disposed. The screened organic materials can then be conveyed either to a composting facility or an energy recovery system.

The volume of waste material that has passed over the disc screens has now been reduced sufficiently to allow workers at the picking station to identify and sort glass and hard plastics such as HDPE, and PET. These materials are pulled from the waste stream and deposited into bins for sale to recycling markets.

The remaining waste material is conveyed into the aluminum sort module. The material is dropped onto a conveyor belt at 300 ft/minute. The head roller of this conveyor has a series or rare earth magnets rotating at 2500 rpm. This creates and eddy current that repels aluminum and other non-ferrous metals and throws them onto a conveyor that exits the process.

At this point, the remaining waste material consists of paper and film plastic. This is taken into a 200 Hp flail mill type shredder. The shredder minces the paper to minus 2 inches in diameter but does not effect the size of the plastic bags, most of which are around 6 inches in diameter. The knives on the shredder are slanted in such as way as to move the material to one end of the shredder casing. At this end, the material falls through an 18 inch square hole onto a 20 inch auger that pulls the material up an incline. In the belly pan of this auger are 4 inch holes. The smaller paper fluff falls through the holes onto the fluff conveyor. The larger film plastics remain inside the auger and exit through the top into a chute that feeds a conveyor to the film plastic baler.

At this point in the process, the waste stream has been isolated to contain less than 5% non-paper materials and is conveyed to the dryers.

TECO
TAMPA ELECTRIC

CORPORATE ENVIRONMENTAL SERVICES
AIR PROGRAMS REPORT

WOOD DERIVED FUEL EMISSIONS TEST

F. J. GANNON GENERATING STATION
BOILER NO. 3
AIRS #0570040-03

MAY 13, 1998 THRU MAY 21, 1998

REPORT PREPARATION: David A. Scott

REVIEW & APPROVAL:

Wood Derived Fuel Emissions Test
F. J. Gannon Generating Station
Boiler No. 3
May 13, 1998 Thru May 21, 1998
Particulate, Sulfuric Acid Mist, Hydrogen Chlorides
Volatile Organic Compounds, Sulfur Dioxide, Opacity
Oxides of Nitrogen, Visible Emissions and Fuel Analysis

Tampa Electric Company

July 10, 1998

Lynn F. Robinson, P.E.
Florida License No. 20786

TABLE OF CONTENTS

TABLE OF CONTENTS (CONT.)

APPENDICES

TABLE OF CONTENTS (CONT.)

TABLE OF CONTENTS (CONT.)

1.0 INTRODUCTION

Tampa Electric Company (TEC) Corporate Environmental Services Department (CES) performed a series of emission tests during the Wood Derived Fuel (WDF) test burn on Unit No. 3 at the F.J. Gannon Generating Station located in Hillsborough County, Port Sutton Road, Tampa, Florida. The emission tests were conducted in order to gather data regarding pollutant emissions while firing a blend of paper pellets/yard trash/wood chips, referred to as WDF, and coal.

The Florida Department of Environmental Protection issued a letter of authorization to Tampa Electric Company for these emission tests to be conducted at F. J. Gannon Unit No. 3, (operating permit No. AO29-172179, AIRS # 0570040). The test burn authorization included a Baseline Test firing coal with no WDF and Fuel Blend Test firing a blend of up to 20% WDF with 80 % coal.

The Baseline Test began on May 20 and was completed May 21, 1998. The Fuel Blend WDF Test was performed on May 13, 1998. Boiler/precipitator Operational Data during the baseline and fuel blend testing can be found in Appendix C.

Unit No. 3 is a steam-generating boiler which is normally fired with coal. Emission tests for all parameters were performed on the boiler during sootblowing conditions. Nitrogen Oxides, Sulfur Dioxide and Opacity data were measured and recorded using continuous emission monitoring system (CEMS) during the Baseline and Fuel Blend Tests. All emission tests were performed following the procedures and quality control guidelines given in 40 CFR 60 Appendix A - Test Methods.

Section 2.0 presents a brief source description and diagram of the sample point locations.

Section 3.0 outlines the procedures and test methods used along with diagrams of sampling trains used.

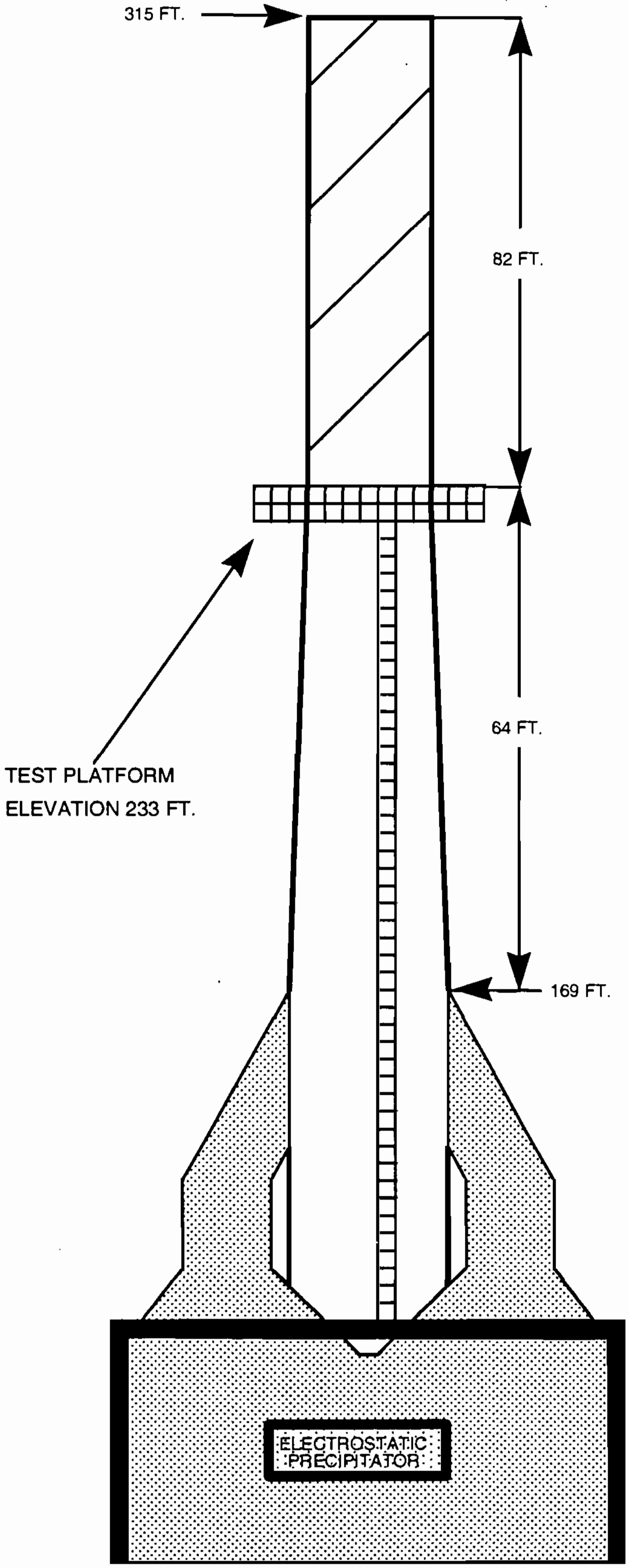
Section 4.0 presents the test results and comparison tables.

All supporting documentation, field data sheets, laboratory data, sample calculations, calibration data, and quality assurance/quality control measures are included in the Appendices to this report.

2.0 SOURCE DESCRIPTION

F.J. Gannon Generating Station is a coal-fired steam electric generating facility located in Hillsborough County on Port Sutton Road, Tampa, Florida at UTM coordinates East 360.0 North 3087.5. The Unit No. 3 source sampling location consists of four sample ports located 90° part on the circumference of the 12 ft. diameter circular stack, which is 315 ft in height. Upstream and downstream gas flow disturbances were determined to be 6.60 and 5.31 stack diameters from the test ports, respectively. Using these criteria, a total of 20 sampling points were chosen for particulate and sulfuric acid mist sampling, as stipulated in the U.S. EPA Method 1 test procedure. A diagram of the stack sampling location is included in Figure 1 along with other pertinent information on the test site.

Unit No. 3 is equipped with an electrostatic precipitator for the control of flyash emissions. Appendix C details the operational parameters of the electrostatic precipitator during the test period.



F.J. GANNON GENERATING STATION BOILER NO. 3 TEST LOCATION PARTICULATE TRAVERSE POINTS

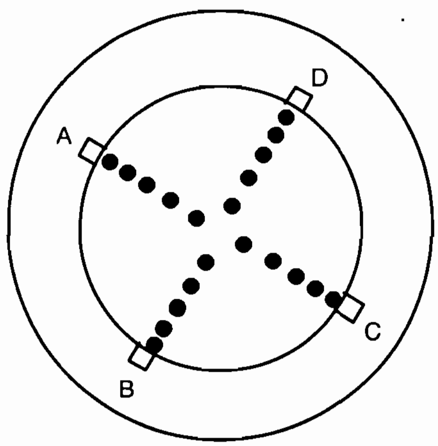
TRAVERSE POINTS	% OF STACK DIAMETER	IN. FROM STACK WALL
1	2.6 %	3.88 IN.
2	8.2 %	12.22 IN.
3	14.6 %	21.77 IN.
4	22.6 %	33.69 IN.
5	34.2 %	50.99 IN.

STACK DIAMETERS DOWNSTREAM FROM DISTURBANCE = 5.2

STACK DIAMETERS UPSTREAM FROM DISTURBANCE = 6.6

STACK DIAMETER = 12.4237 FT.
STACK AREA = 121.225 SQ. FT.

PORT LENGTH = 18 IN.



PORT LOCATION PLAN

FIGURE 1

TECO TAMPA ELECTRIC

REVISED 1-2-97

3.0 TEST PROCEDURES/SAMPLING TRAIN DIAGRAMS

All particulate, sulfuric acid mist, sulfur dioxide, diluent gas, volatile organic compounds, hydrogen chloride and visible emission testing followed the procedures and quality assurance/quality control guidelines given in 40 CFR 60 Appendix A.

Fuel analyses were performed on weekly composite unit No. 3 coal samples from the previous twelve month period as well as the Baseline and Fuel Blend Test weeks. Fuel analyses were also performed on the Baseline Test coal and on the Fuel Blend Test coal and WDF samples collected during the respective test days. Fuel sampling and analyses were performed in accordance with ASTM procedures and EPA methods. Coal and WDF composite fuel samples for analyses of arsenic, chromium, lead, nickel, beryllium, vanadium and zinc was prepared using ASTM 3682-96 , "Standard Test Method for Major and Minor Elements in Coal and Coke Ash by Atomic Absorption" and performed by ASTM PS 52-96." Determination of Trace Elements in Coal, Coke and Combustion Residues from Coal Utilization Processes by Inductively Coupled Plasma-Atomic Emission Spectrometry." Appendix E details the results of the coal and WDF fuel analyses.

Particulate matter sampling was performed in accordance with U.S. EPA Method 17, "Determination of Particulate Matter from Stationary Sources." Sampling was performed using the equipment depicted in Figure 2. Particulate matter was collected on a high purity glass micro fiber thimble measuring 19 X 90 mm.

Sulfuric acid mist sampling was performed in accordance with U.S. EPA Method 8 "Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions from Stationary Sources." Sampling was performed using the equipment depicted in Figure 3.

Diluent sampling and analysis was performed in accordance with U.S. EPA Method 3 "Gas Analysis for Determination of Emission Rate Correction Factor, or Excess Air." Sampling was performed using the equipment depicted in Figure 4. Diluent analysis was performed using the equipment depicted in Figure 5.

Volatile Organic Compounds sampling was performed in accordance with U.S. EPA Method 25A, "Determination of Total Gaseous Organic Concentration using a Flame Ionization Analyzer". Sampling was performed using the equipment depicted in Figure 6.

Hydrogen Chloride sampling was performed according to U.S. EPA Method 26, "Determination of Hydrogen Chloride Emissions from Stationary Sources". Sampling was performed using the equipment depicted in Figure 7.

Sulfur Dioxide sampling was performed according to U.S. EPA Method 6C, "Determination of Sulfur Dioxide Emissions from Stationary Sources (Instrumental Analyzer Procedure)". Sampling was performed using the equipment depicted in Figure 8.

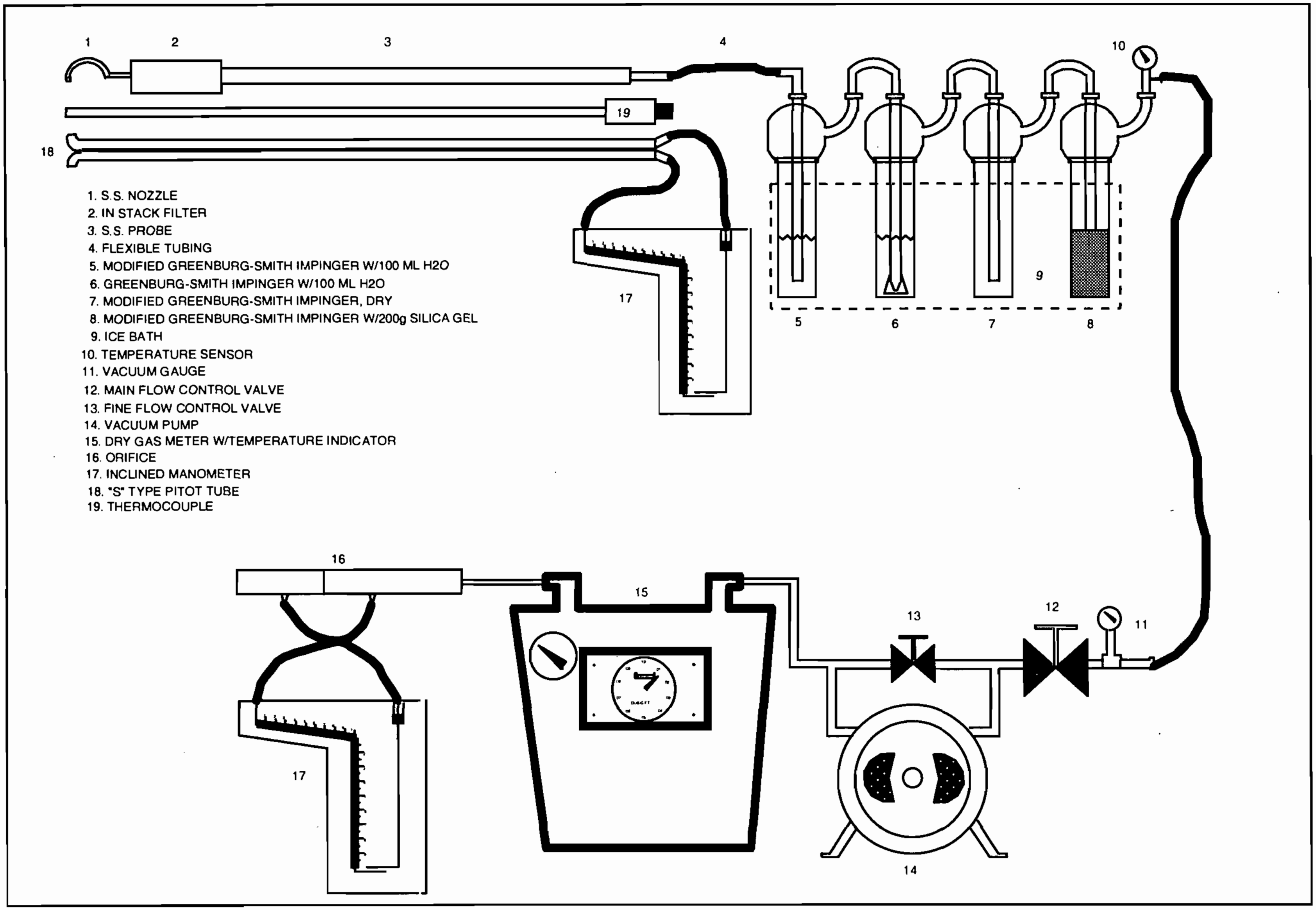


FIGURE 2
PARTICULATE SAMPLING TRAIN
USEPA METHOD 17

TECO
TAMPA ELECTRIC

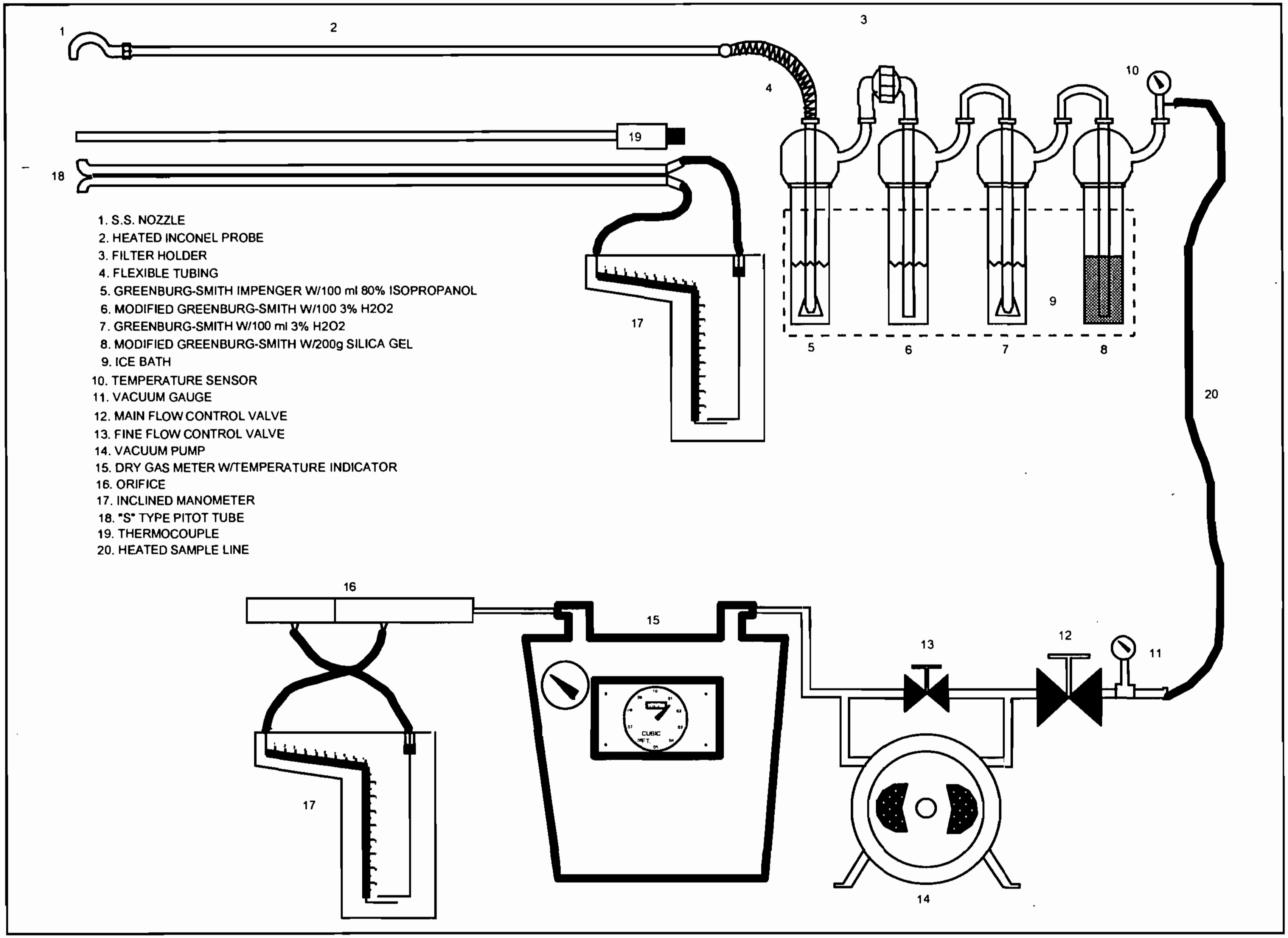


FIGURE 3
SULFURIC ACID MIST SAMPLING TRAIN
USEPA METHOD 8

TECO
TAMPA ELECTRIC

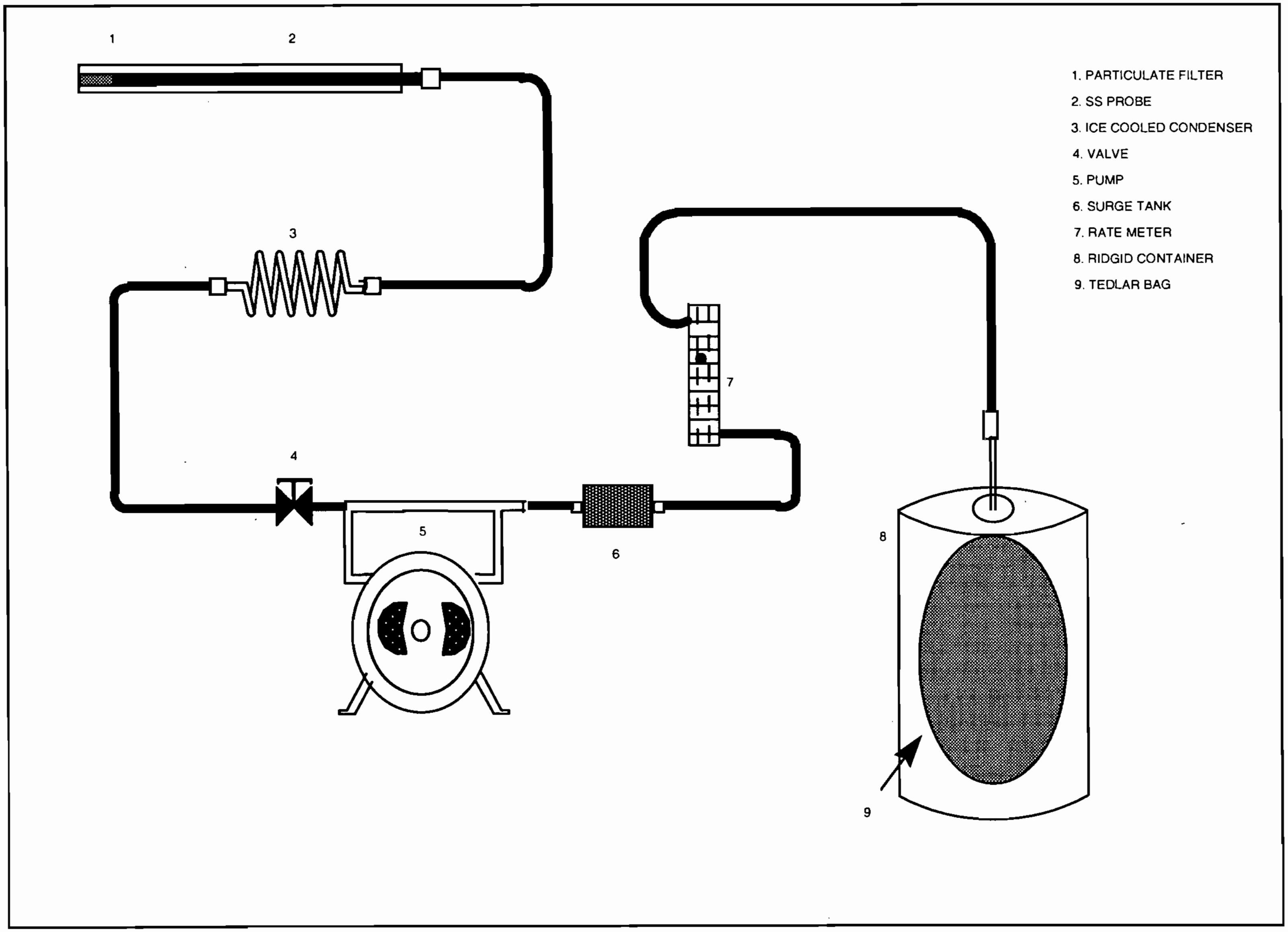


FIGURE 4
INTEGRATED GAS SAMPLING TRAIN
USEPA METHOD 3-B

TECO
TAMPA ELECTRIC

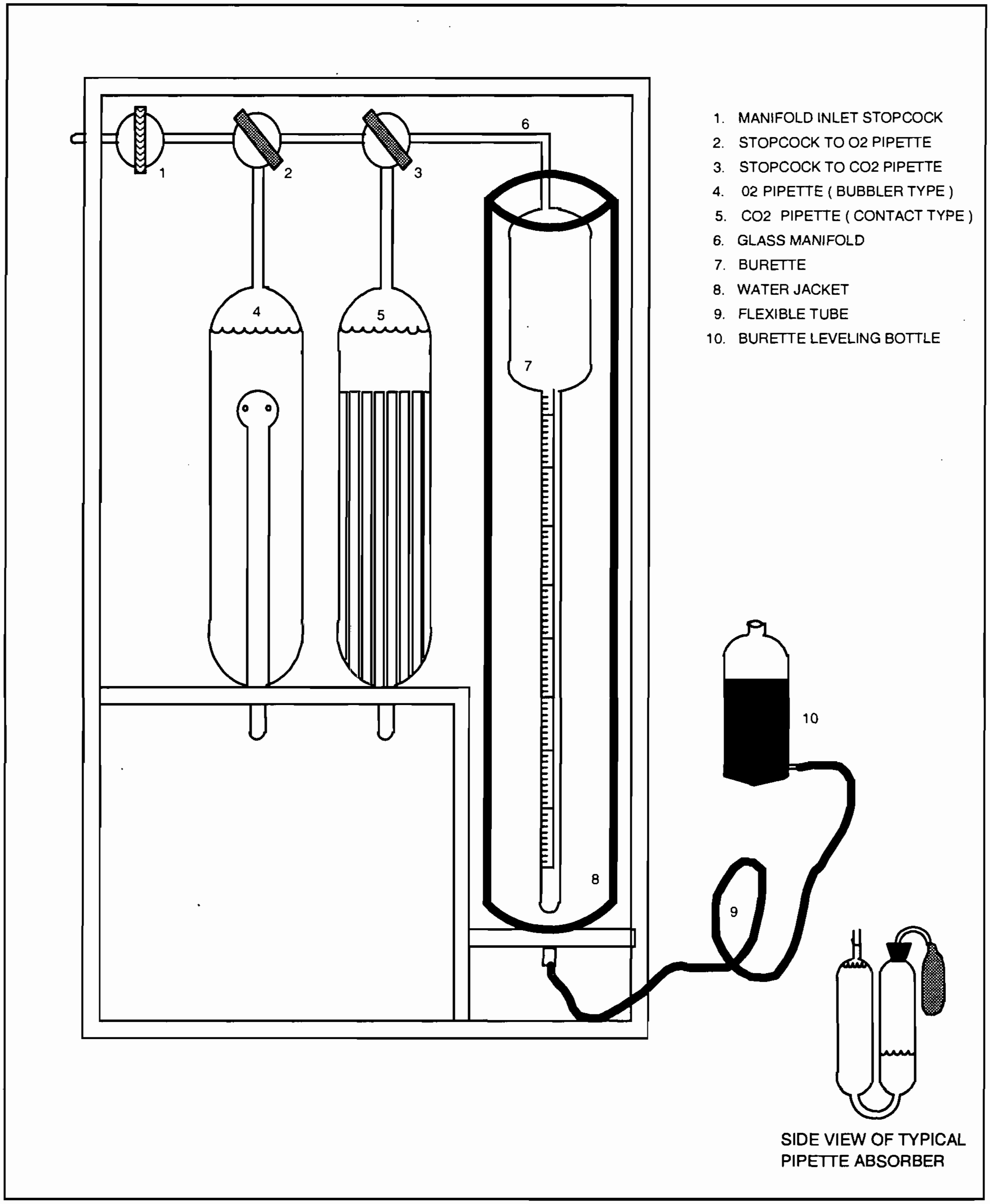


FIGURE 5
ORSAT ANALYZER
USEPA METHOD 3-B

TECO
TAMPA ELECTRIC

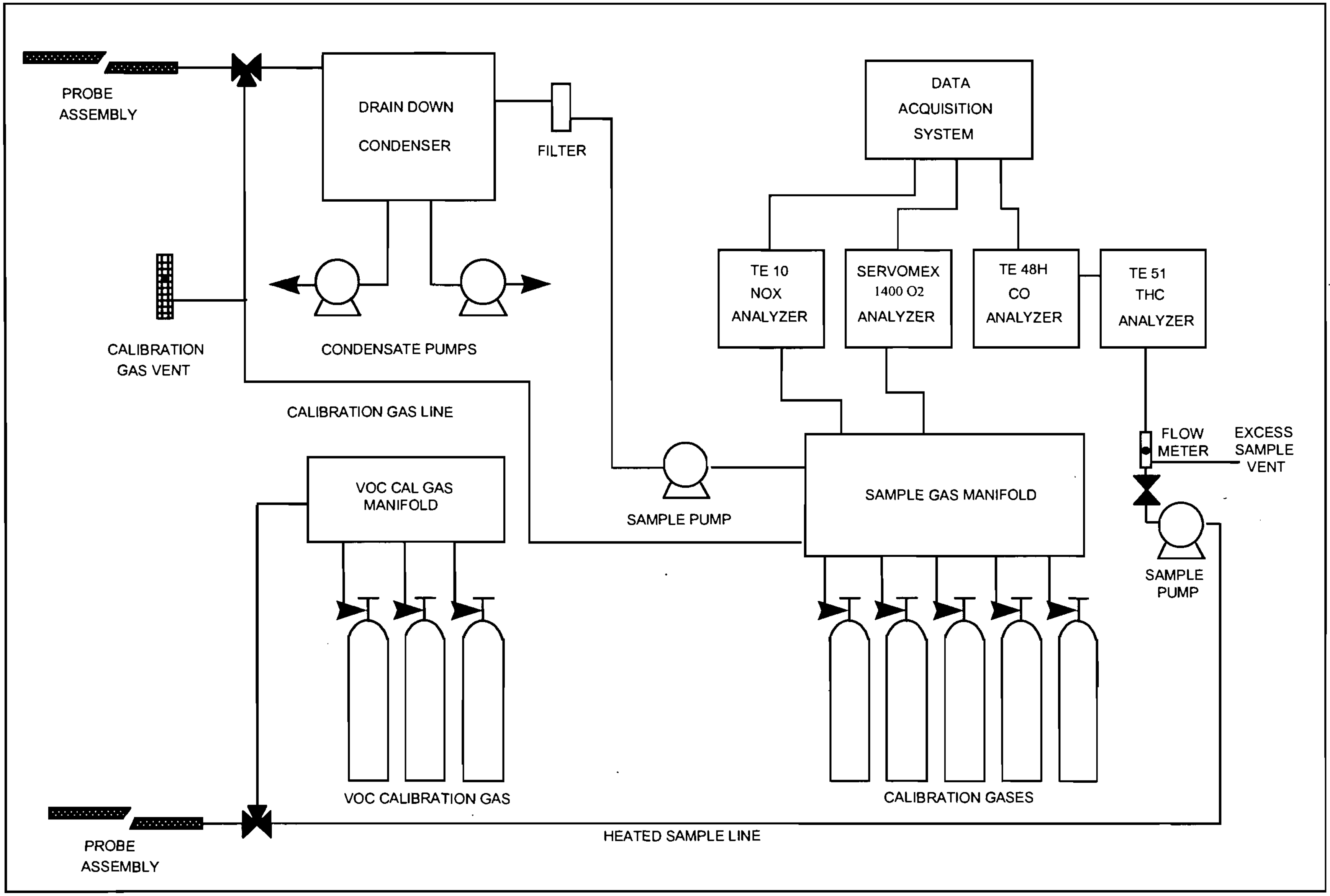


FIGURE 6
VOC SAMPLING TRAIN
USEPA METHOD 25-A

TECO TAMPA ELECTRIC

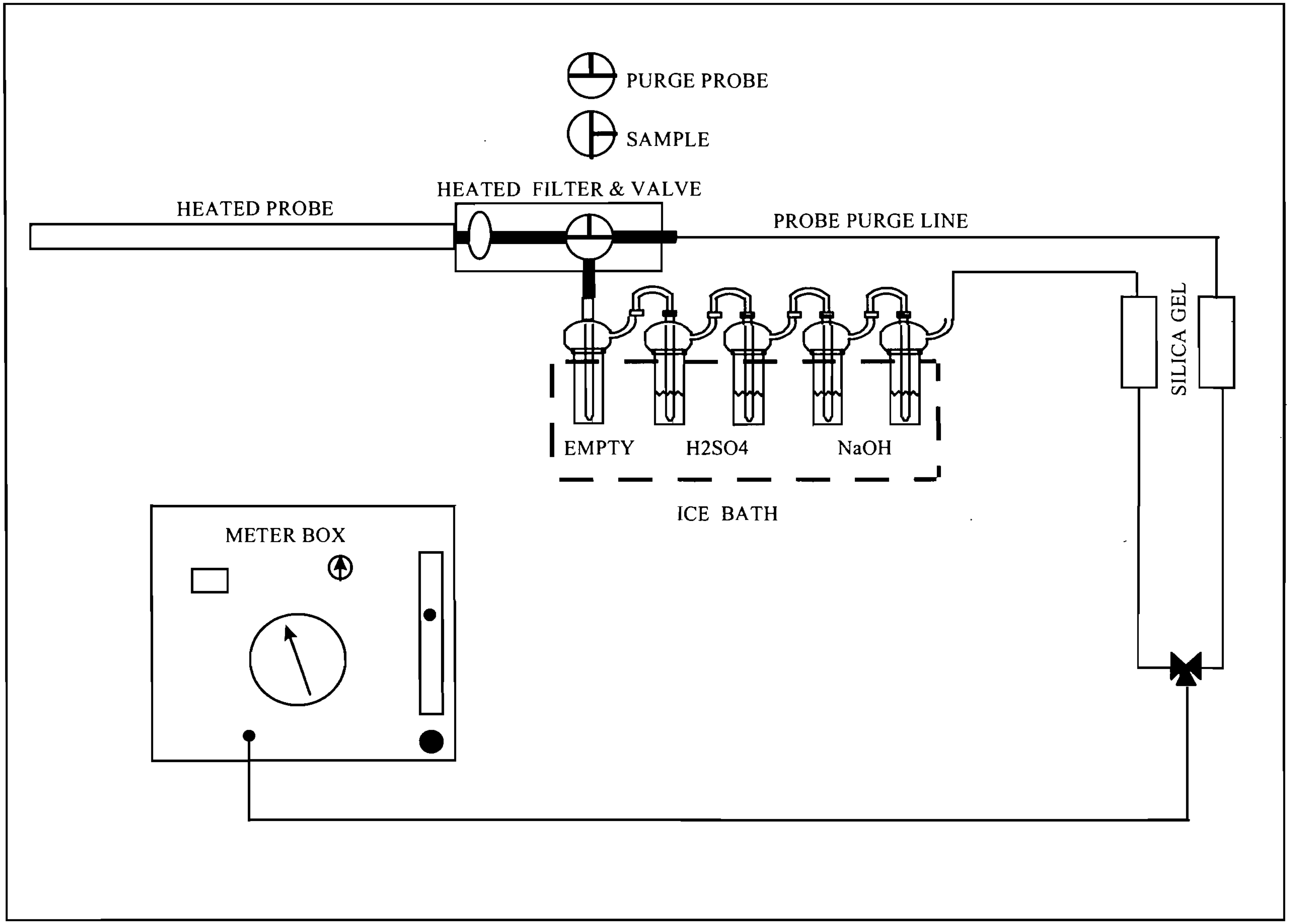


FIGURE 7
HCL SAMPLING TRAIN
USEPA METHOD 26

TECO
TAMPA ELECTRIC

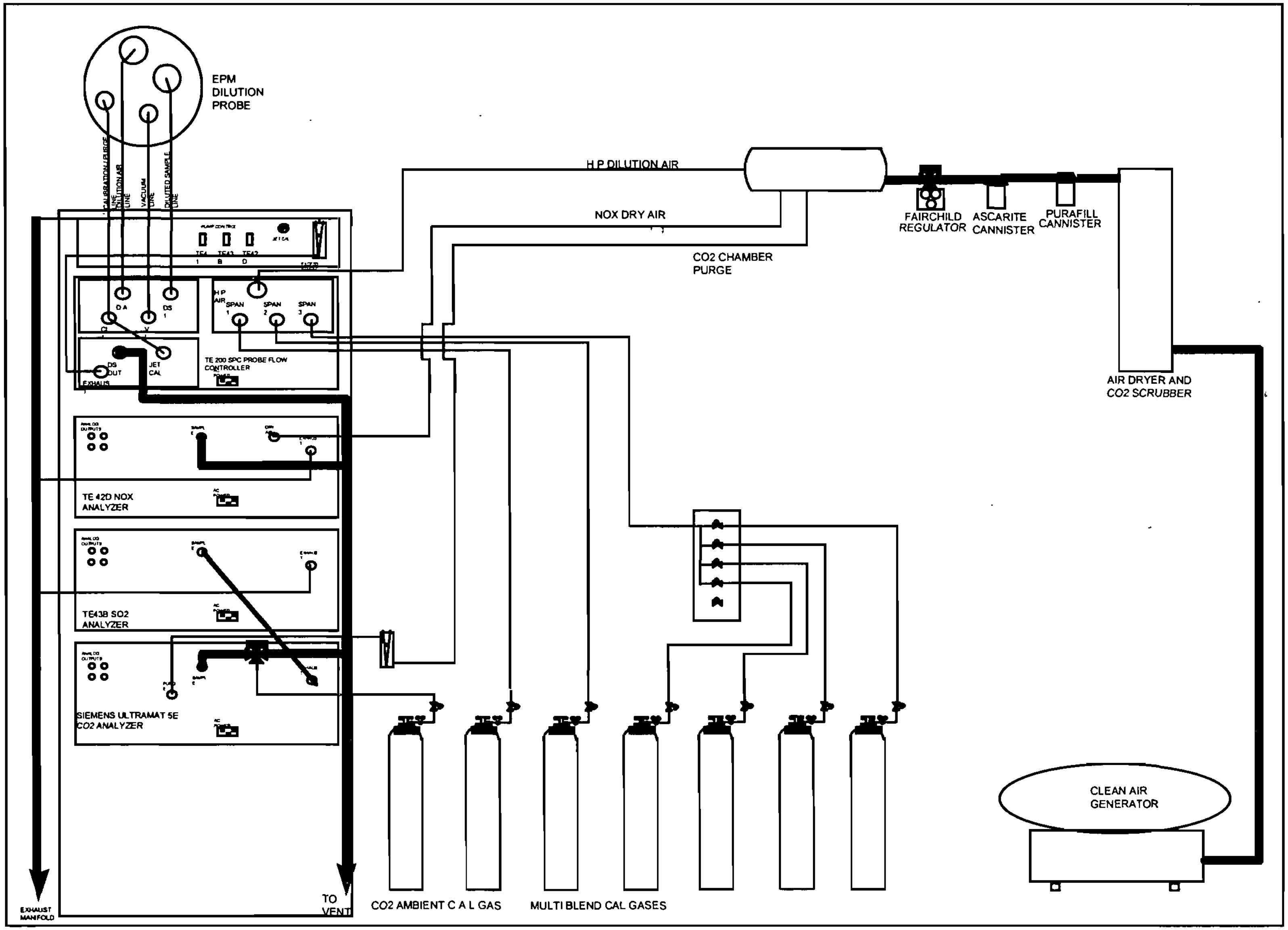


FIGURE 8
SO2 SAMPLING TRAIN
USEPA METHOD 6-C

TECO
TAMPA ELECTRIC

4.0 SUMMARY OF RESULTS

Table 1 presents the Continuous Emission Monitoring System (CEMS) Data from the Baseline Test and the Fuel Blend Test. Data is presented comparing Opacity, SO_2, NO_x, during Baseline and Fuel Blend Tests.

TABLE 1 F.J. GANNON STATION UNIT NO. 3 CONTINUOUS EMISSION MONITORING SYSTEM DATA			
PARAMETER	**BASELINE**	**FUEL BLEND**	**EMISSION RATE**
Opacity	4	4	(%)
SO_2	1.80	1.84	(lb/MMBtu)
NO_x	0.92	0.96	(lb/MMBtu)

Table 2 presents stack test data from the Baseline Test and the Fuel Blend Test. Data is presented comparing particulate, sulfuric acid mist, sulfur dioxide, volatile organic compounds, hydrogen chloride and visible emissions test data.

TABLE 2 F.J. GANNON STATION UNIT NO. 3 STACK TEST DATA			
PARAMETER	**BASELINE**	**FUEL BLEND**	**EMISSION RATE**
Particulate	0.03	0.03	(lb/MMBtu)
H_2SO_4	0.04	0.04	(lb/MMBtu)
SO_2	1.83	1.99	(lb/MMBtu)
VOC	0.003	0.006	(lb/MMBtu)
HCl	0.04	0.07	(lb/MMBtu)
V.E.	0	0	(%)

Baseline vs. Fuel Blend Tests (weekly composites) Fuel Analysis in Table 3

TABLE 3
F.J. GANNON STATION UNIT NUMBER 3
FUEL ANALYSIS DATA

PARAMETER	Coal Baseline	94% Coal 6% WDF Blend	Units
Total Moisture	25.6	23.1	%
Ash, as Received	6.58	6.66	%
BTU, as Received	9228	9583	Btu/Lb
Sulfur, as Received	0.82	0.92	%
BTU, Moisture-Ash Free, Calc	13607	13646	Btu/Lb
BTU in Coal, as Determined	10025	10664	Btu/Lb
Pounds SO2/Million BTU, Coal	1.69	1.79	
Ash, Dry Basis	8.85	9.16	%
BTU, Dry Basis	12403	12470	Btu/Lb
Sulfur, Dry Basis	1.10	1.19	%
Sulfur in Coal, as Determined	0.89	1.01	%
Carbon, as Received	52.46	53.81	%
Hydrogen, as Received	3.86	3.89	%
Nitrogen, as Received	0.841	0.95	%
Oxygen, as Received (Calculated)	9.80	10.6	%
Carbon, Dry Basis	70.51	70.01	%
Hydrogen, Dry Basis	5.19	5.01	%
Nitrogen, Dry Basis	1.13	1.23	%
Oxygen, Dry Basis (Calculated)	13.2	13.8	%
Chlorine by Bomb/IC, as Received	0.04	0.10	%
Chlorine by Bomb/IC, Dry Basis	0.05	0.13	%
Volatiles, Dry Basis	43.28	44.18	%
Volatiles, as Received	32.2	34.05	%
Data for Metals by ICP ug/g in ash: Component Name			
Arsenic	29.0	68.0	
Beryllium	6.2	7.6	
Chromium	255	189.8	
Lead	111	121.3	
Nickel	104	105.3	
Vanadium	316	341.2	
Zinc	694	628.2	

Fuel sampling and analysis of weekly coal composites taken during the Baseline and Blend Tests, as well as analysis of Baseline Test coal and the Fuel Blend Test coal and WDF samples taken during fuel bunkering for each stack test day is included in Appendix E.

Appendix C - Boiler / Precipitator Operation data shows records from all stack tests performed during the test blend. These records include unit load, fuel ratio, and operating conditions.

APPENDIX A

SOURCE TEST CALCULATIONS

A-1 BASELINE PARTICULATE CALCULATIONS

TEST SUMMARY
PARTICULATE EMISSIONS TEST RESULTS

PLANT : F.J. GANNON STATION
DATE : 5-20-98
SAMPLING LOCATION BOILER NO. 3
OPERATING COND. : SOOTBLOWING/WDF BASELINE
****

	RUN NO. 1-S	RUN NO. 2-S	RUN NO. 3-S	TEST AVERAGE
GAS FLOW RATE				
(dscf/min)	335002	324728	327760	329163
(acf/min)	533148	532420	535330	533633
STACK TEMP. (DEG. F)	297.5	301.3	308.1	302.3
ISOKINETIC (%)	99.4	101.0	101.9	100.8
MOISTURE (% H2O)	10.10	12.30	11.70	11.37
SAMPLE VOLUME (dscf)	34.884	34.331	35.004	34.740
CONDENSATE VOL. (ml)	83.4	102.6	98.4	94.8
METER TEMP. (DEG. F)	83	91	99	91
PART. EMISSIONS (lbs / MM Btu)				
By F-Factor	0.031	0.024	0.032	0.029

U.S. EPA
PARTICULATE CALCULATIONS
RUN NO. 1-S

PLANT : F.J. GANNON STATION
DATE : 5-20-98
SAMP. LOCATION : BOILER NO. 3
OPERATING COND.: SOOTBLOWING/WDF BASELINE

SAMPLE TIME =	60.0	min.	NOZZLE DIA. =	0.197	in.
BAR. PRESSURE =	29.94	in.Hg	NOZZLE AREA =	0.000212	Sq.Ft.
STK. PRESSURE =	30.00	in.Hg	METER ORIFICE =	1.154	in. H2O
EFF. STACK AREA =	121.23	Sq.Ft.	METER VOLUME =	35.547	Cu.Ft.
Cp =	0.84		METER TEMP. =	83.0	DEG. F
GAS ANALYSIS =	13.6	% CO2	STACK TEMP. =	297.5	DEG. F
	5.4	% O2	SQ.RT. dP =	1.097	in. H2O
	0.0	% CO	CONDENSATE VOL.=	83.4	ml
	81.0	% N2	METER Y =	1.006	
LAB ANALYSIS =	0.03667	grams			
			F-FACTOR =	9780	dscf/MMBtu

********* ********* ********* ********* ***** ********* ********* ********* *********

Vw(std) = 0.04714 x Vic	=	3.931	scf
Vm(std) = 17.647 x Vm x Y x (Pb + (dH / 13.6)) / (Tm + 460)	=	34.884	scf
Bws = Vw(std) / (Vm(std) + Vw(std))	=	0.101	%
FDA = 1.0 - Bws	=	0.899	%
Md =(.44 x %CO2)+(.32 x %O2)+[.28 x (%N2 + %CO)]	=	30.39	lb/lb - mole
Ms = (Md x FDA) + (18.0 x Bws)	=	29.14	lb/lb - mole
vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts+460) / (Ms x Ps)]	=	73.3	ft/sec
Qs = vs x As x 60	=	533148	acf/min
Qs(std)=Qs x FDA x (528/(Ts + 460)) x (Ps/29.92)	=	335002	dscf/min
I =(Ts + 460) x [(0.00267 x Vic) + (Vm(std) / 17.647)] x 100 / (Time x Ps x An x vs x 60)	=	99.4	%

********* ********* ********* ********* ***** ********* ********* ********* *********

cs = 15.432 x grams / Vm(std)	=	0.0162	grains/dscf
grains/acf = cs x 17.647 x Ps x FDA / (Ts + 460)	=	0.0102	grains/acf
C = cs / 7000	=	2.31E-06	lbs/dscf
EM = C x Qs(std) x 60	=	46.5	lbs/hr
E = C x F x (20.9 / 20.9 - %O2) F-Factor method	=	0.031	lbs/MM Btu

U.S. EPA
PARTICULATE CALCULATIONS
RUN NO. 2-S

PLANT : F.J. GANNON STATION
DATE : 5-20-98
SAMP. LOCATION : BOILER NO. 3
OPERATING COND.: SOOTBLOWING/WDF BASELINE

SAMPLE TIME =	60.0	min.	NOZZLE DIA. =	0.197	in.
BAR. PRESSURE =	29.94	in.Hg	NOZZLE AREA =	0.000212	Sq.Ft.
STK. PRESSURE =	30.00	in.Hg	METER ORIFICE =	1.136	in. H2O
EFF. STACK AREA =	121.23	Sq.Ft.	METER VOLUME =	35.517	Cu.Ft.
Cp =	0.84		METER TEMP. =	91.2	DEG. F
GAS ANALYSIS =	13.2	% CO2	STACK TEMP. =	301.3	DEG. F
	5.4	% O2	SQ.RT. dP =	1.087	in. H2O
	0.0	% CO	CONDENSATE VOL.=	102.6	ml
	81.4	% N2	METER Y =	1.006	
LAB ANALYSIS =	0.02822	grams			
			F-FACTOR =	9780	dscf/MMBtu

********* ********* ********* ********* ***** ********* ********* ********* *********

Vw(std) = 0.04714 x Vic	=	4.837	scf
Vm(std) = 17.647 x Vm x Y x (Pb + (dH / 13.6)) / (Tm + 460)	=	34.331	scf
Bws = Vw(std) / (Vm(std) + Vw(std))	=	0.123	%
FDA = 1.0 - Bws	=	0.877	%
Md =(.44 x %CO2)+(.32 x %O2)+[.28 x (%N2 + %CO)]	=	30.33	lb/lb - mole
Ms = (Md x FDA) + (18.0 x Bws)	=	28.81	lb/lb - mole
vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts+460) / (Ms x Ps)]	=	73.2	ft/sec
Qs = vs x As x 60	=	532420	acf/min
Qs(std)=Qs x FDA x (528/(Ts + 460)) x (Ps/29.92)	=	324728	dscf/min
I =(Ts + 460) x [(0.00267 x Vic) + (Vm(std) / 17.647)] x 100 / (Time x Ps x An x vs x 60)	=	101.0	%

********* ********* ********* ********* ***** ********* ********* ********* *********

cs = 15.432 x grams / Vm(std)	=	0.0127	grains/dscf
grains/acf = cs x 17.647 x Ps x FDA / (Ts + 460)	=	0.0077	grains/acf
C = cs / 7000	=	1.81E-06	lbs/dscf
EM = C x Qs(std) x 60	=	35.3	lbs/hr
E = C x F x (20.9 / 20.9 - %O2) F-Factor method	=	0.024	lbs/MM Btu

U.S. EPA
PARTICULATE CALCULATIONS
RUN NO. 3-S

PLANT : F.J. GANNON STATION
DATE : 5-20-98
SAMP. LOCATION : BOILER NO. 3
OPERATING COND.: SOOTBLOWING/WDF BASELINE

SAMPLE TIME =	60.0	min.	NOZZLE DIA. =	0.197	in.
BAR. PRESSURE =	30.12	in.Hg	NOZZLE AREA =	0.000212	Sq.Ft.
STK. PRESSURE =	30.18	in.Hg	METER ORIFICE =	1.157	in. H2O
EFF. STACK AREA =	121.23	Sq.Ft.	METER VOLUME =	36.512	Cu.Ft.
Cp =	0.84		METER TEMP. =	99.1	DEG. F
GAS ANALYSIS =	13.8	% CO2	STACK TEMP. =	308.1	DEG. F
	5.4	% O2	SQ.RT. dP =	1.093	in. H2O
	0.0	% CO	CONDENSATE VOL.=	98.4	ml
	80.8	% N2	METER Y =	1.006	
LAB ANALYSIS =	0.03822	grams			
			F-FACTOR =	9780	dscf/MMBtu

********* ********* ********* ********* ***** ********* ********* ********* *********

Vw(std) = 0.04714 x Vic	=	4.639	scf
Vm(std) = 17.647 x Vm x Y x (Pb + (dH / 13.6)) / (Tm + 460)	=	35.004	scf
Bws = Vw(std) / (Vm(std) + Vw(std))	=	0.117	%
FDA = 1.0 - Bws	=	0.883	%
Md =(.44 x %CO2)+(.32 x %O2)+[.28 x (%N2 + %CO)]	=	30.42	lb/lb - mole
Ms = (Md x FDA) + (18.0 x Bws)	=	28.97	lb/lb - mole
vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts+460) / (Ms x Ps)]	=	73.6	ft/sec
Qs = vs x As x 60	=	535330	acf/min
Qs(std)=Qs x FDA x (528/(Ts + 460)) x (Ps/29.92)	=	327760	dscf/min
I =(Ts + 460) x [(0.00267 x Vic) + (Vm(std) / 17.647)] x 100 / (Time x Ps x An x vs x 60)	=	101.9	%

********* ********* ********* ********* ***** ********* ********* ********* *********

cs = 15.432 x grams / Vm(std)	=	0.0169	grains/dscf
grains/acf = cs x 17.647 x Ps x FDA / (Ts + 460)	=	0.0103	grains/acf
C = cs / 7000	=	2.41E-06	lbs/dscf
EM = C x Qs(std) x 60	=	47.5	lbs/hr

E = C x F x (20.9 / 20.9 - %O2) F-Factor method = 0.032 lbs/MM Btu

A-2 BASELINE SULFURIC ACID MIST CALCULATIONS

TEST SUMMARY
H2SO4 EMISSIONS TEST RESULTS
USEPA METHOD 8

PLANT : F. J. GANNON STATION
DATE : 5-21-98
SAMPLING LOCATION BOILER NO. 3
OPERATING COND. : SOOTBLOWING RUN / WDF BASELINE
****

	RUN NO. 4-S	RUN NO. 5-S	RUN NO. 6-S	TEST AVERAGE
GAS FLOW RATE				
(dscf/min)	326300	320052	321168	322507
(acf/min)	524419	522237	521510	522722
STACK TEMP. (DEG. F)	292.6	297.2	302.1	297.3
ISOKINETIC (%)	99.4	100.3	100.3	100.0
MOISTURE (% H2O)	11.40	12.20	11.20	11.60
SAMPLE VOLUME (dscf)	33.976	33.636	33.766	33.793
CONDENSATE VOL. (ml)	92.8	99.2	90.1	94.0
METER TEMP. (DEG. F)	82	91	89	87
H2SO4 EMISSIONS (Including SO3) lb/dscf	4.62E-06	3.69E-06	4.68E-05	1.836E-05
LB/MMBTU By F-Factor	0.045	0.036	0.457	0.180
Lb/MMBtu Average of first two runs				0.041

U.S. EPA
H2SO4 EMISSIONS TEST RESULTS
RUN NO. 4-S

PLANT : F. J. GANNON STATION
DATE : 5-21-98
SAMP. LOCATION : BOILER NO. 3
OPERATING COND.: SOOTBLOWING RUN / WDF BASELINE

SAMPLE TIME =	60.0	min.	NOZZLE DIA. =	0.197	in.
BAR. PRESSURE =	29.88	in.Hg	NOZZLE AREA =	0.0002117	Sq.Ft.
STK. PRESSURE =	29.95	in.Hg	METER ORIFICE =	1.113	in. H2O
EFF. STACK AREA =	121.23	Sq.Ft.	METER VOLUME =	34.650	Cu.Ft.
Cp =	0.84		METER TEMP. =	82.3	DEG. F
GAS ANALYSIS =	13.6	% CO2	STACK TEMP. =	292.6	DEG. F
	5.4	% O2	SQ.RT. dP =	1.078	in. H2O
	0.0	% CO	CONDENSATE VOL.=	92.8	ml
	81.0	% N2	METER Y =	1.006	
LAB ANALYSIS =	0.00000	grams	HEAT INPUT =		MM Btu/hr
			F-FACTOR =	9780	dscf/MMBtu

********* ********* ********* ********* ***** ********* ********* ********* *********

Vw(std) = 0.04714 x Vic	=	4.375	scf
Vm(std) = 17.647 x Vm x Y x (Pb + (dH / 13.6)) / (Tm + 460)	=	33.976	scf
Bws = Vw(std) / (Vm(std) + Vw(std))	=	0.114	
FDA = 1.0 - Bws	=	0.886	
Md =(.44 x %CO2)+(.32 x %O2)+[.28 x (%N2 + %CO)] =		30.39	
Ms = (Md x FDA) + (18.0 x Bws)	=	28.98	
vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts+460) / (Ms x Ps)]	=	72.1	ft/sec
Qs = vs x As x 60	=	524419	acf/min
Qs(std)=Qs x FDA x (528/(Ts + 460)) x (Ps/29.92) =		326300	dscf/min
I =(Ts + 460) x [(0.00267 x Vic) + (Vm(std) / 17.647)] x 100 / (Time x Ps x An x vs x 60)	=	99.4	%

********* ********* ********* ********* ***** ********* ********* ********* *********

NORMALITY OF BaBl2 * 2H2O	=	0.0102	
TITRANT BLANK	=	0.0500	milliliters
VOLUME SOLUTION	=	5.00E+02	milliliters
VOLUME ALIQUOT	=	20.0	milliliters
TITRANT	=	0.62	milliliters
H2SO4 (lb/dscf) = 0.0001081 x (N x (T-Tb) x Vs/Va)/Vm	=	0.00000462	lb/dscf
H2SO4 (lb/MMBtu)	=	0.0452	lb/MMBtu

U.S. EPA
H2SO4 EMISSIONS TEST RESULTS
RUN NO. 5-S

PLANT : F. J. GANNON STATION
DATE : 5-21-98
SAMP. LOCATION : BOILER NO. 3
OPERATING COND.: SOOTBLOWING RUN / WDF BASELINE

SAMPLE TIME =	60.0	min.	NOZZLE DIA. =	0.197	in.
BAR. PRESSURE =	29.88	in.Hg	NOZZLE AREA =	0.0002117	Sq.Ft.
STK. PRESSURE =	29.95	in.Hg	METER ORIFICE =	1.096	in. H2O
EFF. STACK AREA =	121.23	Sq.Ft.	METER VOLUME =	34.827	Cu.Ft.
Cp =	0.84		METER TEMP. =	90.5	DEG. F
GAS ANALYSIS =	13.8	% CO2	STACK TEMP. =	297.2	DEG. F
	5.2	% O2	SQ.RT. dP =	1.069	in. H2O
	0.0	% CO	CONDENSATE VOL.=	99.2	ml
	81.0	% N2	METER Y =	1.006	
LAB ANALYSIS =	0.00000	grams	HEAT INPUT =		MM Btu/hr
			F-FACTOR =	9780	dscf/MMBtu

********* ********* ********* ********* ***** ********* ********* ********* *********

Vw(std) = 0.04714 x Vic	=	4.676	scf
Vm(std) = 17.647 x Vm x Y x (Pb + (dH / 13.6)) / (Tm + 460)	=	33.636	scf
Bws = Vw(std) / (Vm(std) + Vw(std))	=	0.122	
FDA = 1.0 - Bws	=	0.878	
Md =(.44 x %CO2)+(.32 x %O2)+[.28 x (%N2 + %CO)]	=	30.42	
Ms = (Md x FDA) + (18.0 x Bws)	=	28.90	
vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts+460) / (Ms x Ps)]	=	71.8	ft/sec
Qs = vs x As x 60	=	522237	acf/min
Qs(std)=Qs x FDA x (528/(Ts + 460)) x (Ps/29.92)	=	320052	dscf/min
I =(Ts + 460) x [(0.00267 x Vic) + (Vm(std) / 17.647)] x 100 / (Time x Ps x An x vs x 60)	=	100.3	%

********* ********* ********* ********* ***** ********* ********* ********* *********

NORMALITY OF BaBl2 * 2H2O	=	0.0102	
TITRANT BLANK	=	0.0500	milliliters
VOLUME SOLUTION	=	5.00E+02	milliliters
VOLUME ALIQUOT	=	20.0	milliliters
TITRANT	=	0.5	milliliters

H2SO4 (lb/dscf) = 0.0001081 x (N x (T-Tb) x Vs/Va)/Vm	=	0.00000369	lb/dscf
H2SO4 (lb/MMBtu)	=	0.0361	lb/MMBtu

U.S. EPA
H2SO4 EMISSIONS TEST RESULTS
RUN NO. 6-S

PLANT : F. J. GANNON STATION
DATE : 5-21-98
SAMP. LOCATION : BOILER NO. 3
OPERATING COND.: SOOTBLOWING RUN / WDF BASELINE

SAMPLE TIME =	60.0	min.	NOZZLE DIA. =	0.197	in.
BAR. PRESSURE =	29.88	in.Hg	NOZZLE AREA =	0.0002117	Sq.Ft.
STK. PRESSURE =	29.95	in.Hg	METER ORIFICE =	1.092	in. H2O
EFF. STACK AREA =	121.23	Sq.Ft.	METER VOLUME =	34.879	Cu.Ft.
Cp =	0.84		METER TEMP. =	89.2	DEG. F
GAS ANALYSIS =	13.8	% CO2	STACK TEMP. =	302.1	DEG. F
	5.0	% O2	SQ.RT. dP =	1.067	in. H2O
	0.0	% CO	CONDENSATE VOL.=	90.1	ml
	81.2	% N2	METER Y =	1.006	
LAB ANALYSIS =	0.00000	grams	HEAT INPUT =		MM Btu/hr
			F-FACTOR =	9780	dscf/MMBtu

********* ********* ********* ********* ***** ********* ********* ********* *********

Vw(std) = 0.04714 x Vic	=	4.247	scf
Vm(std) = 17.647 x Vm x Y x (Pb + (dH / 13.6)) / (Tm + 460)	=	33.766	scf
Bws = Vw(std) / (Vm(std) + Vw(std))	=	0.112	
FDA = 1.0 - Bws	=	0.888	
Md =(.44 x %CO2)+(.32 x %O2)+[.28 x (%N2 + %CO)]	=	30.41	
Ms = (Md x FDA) + (18.0 x Bws)	=	29.02	
vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts+460) / (Ms x Ps)]	=	71.7	ft/sec
Qs = vs x As x 60	=	521510	acf/min
Qs(std)=Qs x FDA x (528/(Ts + 460)) x (Ps/29.92)	=	321168	dscf/min
I =(Ts + 460) x [(0.00267 x Vic) + (Vm(std) / 17.647)] x 100 / (Time x Ps x An x vs x 60)	=	100.3	%

********* ********* ********* ********* ***** ********* ********* ********* *********

NORMALITY OF BaBl2 * 2H2O	=	0.0102	
TITRANT BLANK	=	0.0500	milliliters
VOLUME SOLUTION	=	5.00E+02	milliliters
VOLUME ALIQUOT	=	20.0	milliliters
TITRANT	=	5.78	milliliters

H2SO4 (lb/dscf) = 0.0001081 x (N x (T-Tb) x Vs/Va)/Vm	=	0.00004678	lb/dscf
H2SO4 (lb/MMBtu)	=	0.4575	lb/MMBtu

A-3 BASELINE VOLATILE ORGANICS CALCULATIONS

F. J. GANNON GENERATING STATION
VOLATILE ORGANIC COMPOUNDS

BOILER NO. 3
BASELINE TEST
MAY 21, 1998

RUN NO.	TIME	ppm VOC	IBS/MMBtu
1	0838 - 0938	1.1	0.002
2	1010 - 1110	2.1	0.003
3	1138 - 1238	2.7	0.004
	Average	1.97	0.003

Emission Rate Calculation:

lb/Hr= Concentration (ppmVOC) x (Propane density factor) x (Volumetric Stack Flow Qs) x 10^{-8}

lb/MMBtu = lb/Hr / Heat Input
where:

- Molecular Wt. of Propane = 44
- Volumetric Stack flow = 1.9750E07 dscf/hr
- Propane density factor = molecular wt. /365.15 SCF per lb-mole x 10^2
- Heat Input = 1505 MMBtu/Hr

CALCULATION OF AVERAGE VOC CONCENTRATION

TEST METHOD 25A CORRECTION

RUN: 1

SOURCE: F.J. GANNON STATION BOILER 3 WDF BASELINE

TEST DATE: 05/21/98

GAS VALUE	INITIAL CAL	FINAL CAL	MEAN CAL
0.00 ppm PROPANE	0.10	0.10	0.10
2.90 ppm PROPANE	3.00	3.00	3.00

$\bar{C}$ = 1.2

CORRECTED RESULTS

1.1 ppm VOC

Corrected Conc. = $Cma(\bar{C} - Co)/(Cm - Co)$

Where: $\bar{C}$ = mean reference measurement
Co = mean zero calibration response
Cm = mean mid or upscale calibration gas response
Cma = actual mid or upscale calibration gas concentration

CALCULATION OF AVERAGE VOC CONCENTRATION

TEST METHOD 25A CORRECTION

RUN: 2

SOURCE: F.J. GANNON STATION BOILER 3 WDF BASELINE

TEST DATE: 05/21/98

GAS VALUE	INITIAL CAL	FINAL CAL	MEAN CAL
0.00 ppm PROPANE	0.10	0.00	0.05
2.90 ppm PROPANE	3.00	3.00	3.00

$\bar{C}$ = 2.1

CORRECTED RESULTS

2.0 ppm VOC

Corrected Conc. = Cma($\bar{C}$ - Co)/(Cm - Co)

Where: $\bar{C}$ = mean reference measurement
Co = mean zero calibration response
Cm = mean mid or upscale calibration gas response
Cma = actual mid or upscale calibration gas concentration

CALCULATION OF AVERAGE VOC CONCENTRATION

TEST METHOD 25A CORRECTION

RUN: 3

SOURCE: F.J. GANNON STATION BOILER 3 WDF BASELINE

TEST DATE: 05/21/98

GAS VALUE	INITIAL CAL	FINAL CAL	MEAN CAL
0.00 ppm PROPANE	0.00	0.10	0.05
2.90 ppm PROPANE	3.00	2.90	2.95

$\bar{C}$ = 2.7

CORRECTED RESULTS

2.7 ppm VOC

Corrected Conc. = Cma(C - $\bar{\text{Co}}$)/(Cm - Co)

Where: $\bar{C}$ = mean reference measurement
Co = mean zero calibration response
Cm = mean mid or upscale calibration gas response
Cma = actual mid or upscale calibration gas concentration

A-4 BASELINE HYDROGEN CHLORIDE CALCULATIONS

F. J. GANNON GENERATING STATION
HYDROGEN CHLORIDE

BOILER NO.3 WDF
BASELINE TEST
JUNE 20, 1998

Run 1-S K_{HCL}	Run 2-S K_{HCL}	Run 3-S K_{HCL}
1.028	1.028	1.028
$V_{S(ml)}$	$V_{S(ml)}$	$V_{S(ml)}$
100	100	100
S_X	S_X	S_X
48	65	65
B_X	B_X	B_X
0.6	0.6	0.6
$M_{HX\ HCL}$ µg	$M_{HX\ HCL}$ µg	$M_{HX\ HCL}$ µg
4872.72	6620.32	6620.32

Vol. Flow	329163	329163	329163	DSCF/Min.
Vol. Flow	19749780	19749780	19749780	DSCF/Hr.
Vmstd	0.13126	0.13661	0.13505	DSCM
Heat Input	1492.5	1492.5	1492.5	MMbtu/Hr
Concentration HCl =	37.12265732	48.46145963	49.02125139	mg/dscm
	2.31819E-06	3.02627E-06	3.06123E-06	lbs/dscf
Emission Rate =	45.78	59.77	60.46	lbs/hr
	0.031	0.040	0.041	lbs/MMBtu

Average Emission Rate = 0.037 lbs/MMBtu

Emission Rate Calculation:

lbs/Hr = (Concentration HCL(mg/dscm) x 6.2446899 x 10^{-8}) x Volumetric Stack Flow (dscf/hr)

lb/MMBtu= lb/Hr / Heat Input

SHARDATA\AIR&WASTE\AIRCALC\GANNON\BOILER3\WDF

USEPA REFERENCE METHOD
STP CALCULATIONS

PLANT: F. J. Gannon Station WDF Baseline — Run Number: 1-S
SAMPLING LOCATION Boiler No.3
DATE : 05/20/98

METER Y:	1.029	BAR. PRESS(Pbar):	29.94 in. Hg.
MTR. (Tm):	83 Deg. F		
F-FACTOR:	9780 dscm / J	% OXYGEN :	5.4 Percent

SAMPLE VOLUME-L (Vm) 131.100 Liters

SAMPLE VOLUME (Vm std) 0.13126 CU. Meters

USEPA REFERENCE METHOD
STP CALCULATIONS

PLANT: F. J. Gannon Station WDF Baseline

Run Number: 2-S

SAMPLING LOCATION Boiler No.3

DATE : 05/20/98

METER Y:	1.029	BAR. PRESS(Pbar):	29.94	in. Hg.
MTR. (Tm):	91 Deg. F			
F-FACTOR:	9780 dscm / J	% OXYGEN :	5.4	Percent

SAMPLE VOLUME-L (Vm)	138.450	Liters
SAMPLE VOLUME (Vm std)	0.13661	CU. Meters

USEPA REFERENCE METHOD
STP CALCULATIONS

PLANT: F. J. Gannon Station WDF Baseline
Run Number: 3-S
SAMPLING LOCATION Boiler No.3
DATE : 05/20/98

METER Y:	1.029	BAR. PRESS(Pbar):	30.12 in. Hg.
MTR. (Tm):	99 Deg. F		
F-FACTOR:	9780 dscm / J	% OXYGEN :	5.4 Percent

SAMPLE VOLUME-L (Vm) 138.030 Liters

SAMPLE VOLUME (Vm std) 0.13505 CU. Meters

A-5 BASELINE SULFUR DIOXIDE CALCULATIONS

WOOD DERIVED FUEL TEST SUMMARY
SULFUR DIOXIDE TEST RESULTS - BASELINE

PLANT:	F. J. GANNON STATION
SAMPLING LOCATION:	BOILER NO. 3
DATE:	May 20, 1998

USEPA Method 6C

RUN NO.	lbs. SO_2 /MM Btu
2	1.798
3	1.862
4	1.838
Average	1.833

CALCULATION OF AVERAGE SULFUR DIOXIDE EMISSIONS

RUN: 2

SOURCE: F.J. GANNON STATION NO.3 WDF BASELINE TEST

TEST DATE: 05/20/98

GAS VALUE	INITIAL CAL	FINAL CAL	MEAN CAL
0.0 ppm SO_2	3.2	3.6	3.4
746.3 ppm SO_2	737.8	739.5	738.7
0.00 % CO_2	0.26	0.18	0.22
10.01 % CO_2	10.08	10.12	10.10

$\bar{C}(SO_2)$ = 750.3 $\bar{C}(CO_2)$ = 12.65

CORRECTED RESULTS

758 ppm SO_2
12.6 % CO_2
1.798 lb SO_2/MBTU

Corrected Conc. = $Cma(\bar{C} - Co)/(Cm - Co)$

Where: $\bar{C}$ = mean reference measurement
Co = mean zero calibration response
Cm = mean mid or upscale calibration gas response
Cma = actual mid or upscale calibration gas concentration

E = (ppm SO_2)(F-Factor)(Conv. Factor)(100)/(% CO_2)

F-Factor = 1800
Conv. Factor = 1.660E-07

CALCULATION OF AVERAGE SULFUR DIOXIDE EMISSIONS

RUN: 3

SOURCE: F.J. GANNON STATION NO.3 WDF BASELINE TEST

TEST DATE: 05/20/98

GAS VALUE	INITIAL CAL	FINAL CAL	MEAN CAL
0.0 ppm SO2	3.6	3.5	3.6
746.3 ppm SO2	739.5	735.2	737.4
0.00 % CO2	0.18	0.12	0.15
10.01 % CO2	10.12	10.12	10.12

$\bar{C}(SO_2)$ = 775.0 $\bar{C}(CO_2)$ = 12.71

CORRECTED RESULTS

785 ppm SO_2
12.6 % CO_2
1.862 lb SO_2/MBTU

Corrected Conc. = Cma($\bar{C}$ - Co)/(Cm - Co)

Where: $\bar{C}$ = mean reference measurement
Co = mean zero calibration response
Cm = mean mid or upscale calibration gas response
Cma = actual mid or upscale calibration gas concentration

E = (ppm SO_2)(F-Factor)(Conv. Factor)(100)/(% CO_2)

F-Factor = 1800
Conv. Factor = 1.660E-07

CALCULATION OF AVERAGE SULFUR DIOXIDE EMISSIONS

RUN: 4

SOURCE: F.J. GANNON STATION 3 WDF BASELINE TEST

TEST DATE: 05/20/98

GAS VALUE	INITIAL CAL	FINAL CAL	MEAN CAL
0.0 ppm SO2	3.5	2.1	2.8
746.3 ppm SO2	735.2	735.1	735.2
0.00 % CO2	0.12	0.11	0.12
10.01 % CO2	10.12	10.12	10.12

$\bar{C}(SO_2)$ = 763.6 $\bar{C}(CO_2)$ = 12.70

CORRECTED RESULTS

775 ppm SO2
12.6 % CO2
1.838 lb SO2/MBTU

Corrected Conc. = $Cma(\bar{C} - Co)/(Cm - Co)$

Where: $\bar{C}$ = mean reference measurement
Co = mean zero calibration response
Cm = mean mid or upscale calibration gas response
Cma = actual mid or upscale calibration gas concentration

E = (ppm SO2)(F-Factor)(Conv. Factor)(100)/(% CO2)

F-Factor = 1800
Conv. Factor = 1.660E-07

A-6 FUEL BLEND PARTICULATE CALCULATIONS

TEST SUMMARY
PARTICULATE EMISSIONS TEST RESULTS

PLANT : F. J. GANNON STATION
DATE : 5/13/98
SAMPLING LOCATION BOILER NO. 3
OPERATING COND. : SOOTBLOWING/WDF BLEND
****

	RUN NO. 1-S	RUN NO. 2-S	RUN NO. 3-S	TEST AVERAGE
GAS FLOW RATE				
(dscf/min)	328115	326219	322051	325462
(acf/min)	528783	527329	520783	525632
STACK TEMP. (DEG. F)	298.0	296.9	297.7	297.5
ISOKINETIC (%)	100.5	99.5	100.5	100.2
MOISTURE (% H2O)	10.80	11.20	11.50	11.17
SAMPLE VOLUME (dscf)	34.537	33.990	33.917	34.148
CONDENSATE VOL. (ml)	88.9	91.3	93.5	91.2
METER TEMP. (DEG. F)	82	88	92	87
PART. EMISSIONS (lbs / MM Btu)				
By F-Factor	0.033	0.035	0.032	0.033

U.S. EPA
PARTICULATE CALCULATIONS
RUN NO. 1-S

PLANT : F. J. GANNON STATION
DATE : 5/13/98
SAMP. LOCATION : BOILER NO. 3
OPERATING COND.: SOOTBLOWING/WDF BLEND

SAMPLE TIME =	60.0	min.	NOZZLE DIA. =	0.197	in.
BAR. PRESSURE =	29.78	in.Hg	NOZZLE AREA =	0.000212	Sq.Ft.
STK. PRESSURE =	29.88	in.Hg	METER ORIFICE =	1.083	in. H2O
EFF. STACK AREA =	121.23	Sq.Ft.	METER VOLUME =	35.356	Cu.Ft.
Cp =	0.84		METER TEMP. =	82.5	DEG. F
GAS ANALYSIS =	13.2	% CO2	STACK TEMP. =	298.0	DEG. F
	5.0	% O2	SQ.RT. dP =	1.082	in. H2O
	0.0	% CO	CONDENSATE VOL.=	88.9	ml
	81.8	% N2	METER Y =	1.006	
LAB ANALYSIS =	0.04055	grams			
			F-FACTOR =	9780	dscf/MMBtu

********* ********* ********* ********* ***** ********* ********* ********* *********

Vw(std) = 0.04714 x Vic	=	4.191	scf
Vm(std) = 17.647 x Vm x Y x (Pb + (dH / 13.6)) / (Tm + 460)	=	34.537	scf
Bws = Vw(std) / (Vm(std) + Vw(std))	=	0.108	%
FDA = 1.0 - Bws	=	0.892	%
Md =(.44 x %CO2)+(.32 x %O2)+[.28 x (%N2 + %CO)]	=	30.31	lb/lb - mole
Ms = (Md x FDA) + (18.0 x Bws)	=	28.98	lb/lb - mole
vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts+460) / (Ms x Ps)]	=	72.7	ft/sec
Qs = vs x As x 60	=	528783	acf/min
Qs(std)=Qs x FDA x (528/(Ts + 460)) x (Ps/29.92)	=	328115	dscf/min
I =(Ts + 460) x [(0.00267 x Vic) + (Vm(std) / 17.647)] x 100 / (Time x Ps x An x vs x 60)	=	100.5	%

********* ********* ********* ********* ***** ********* ********* ********* *********

cs = 15.432 x grams / Vm(std)	=	0.0181	grains/dscf
grains/acf = cs x 17.647 x Ps x FDA / (Ts + 460)	=	0.0112	grains/acf
C = cs / 7000	=	2.59E-06	lbs/dscf
EM = C x Qs(std) x 60	=	50.9	lbs/hr
E = C x F x (20.9 / 20.9 - %O2) F-Factor method	=	0.033	lbs/MM Btu

U.S. EPA
PARTICULATE CALCULATIONS
RUN NO. 2-S

PLANT : F. J. GANNON STATION
DATE : 5/13/98
SAMP. LOCATION : BOILER NO. 3
OPERATING COND.: SOOTBLOWING/WDF BLEND

SAMPLE TIME =	60.0	min.	NOZZLE DIA. =	0.197	in.
BAR. PRESSURE =	29.78	in.Hg	NOZZLE AREA =	0.000212	Sq.Ft.
STK. PRESSURE =	29.88	in.Hg	METER ORIFICE =	1.097	in. H2O
EFF. STACK AREA =	121.23	Sq.Ft.	METER VOLUME =	35.122	Cu.Ft.
Cp =	0.84		METER TEMP. =	87.6	DEG. F
GAS ANALYSIS =	13.2	% CO2	STACK TEMP. =	296.9	DEG. F
	5.6	% O2	SQ.RT. dP =	1.079	in. H2O
	0.0	% CO	CONDENSATE VOL.=	91.3	ml
	81.2	% N2	METER Y =	1.006	
LAB ANALYSIS =	0.04085	grams			
			F-FACTOR =	9780	dscf/MMBtu

********* ********* ********* ********* * *** ********* ********* ********* *********

Vw(std) = 0.04714 x Vic	=	4.304	scf
Vm(std) = 17.647 x Vm x Y x (Pb + (dH / 13.6)) / (Tm + 460)	=	33.990	scf
Bws = Vw(std) / (Vm(std) + Vw(std))	=	0.112	%
FDA = 1.0 - Bws	=	0.888	%
Md =(.44 x %CO2)+(.32 x %O2)+[.28 x (%N2 + %CO)]	=	30.34	lb/lb - mole
Ms = (Md x FDA) + (18.0 x Bws)	=	28.96	lb/lb - mole
vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts+460) / (Ms x Ps)]	=	72.5	ft/sec
Qs = vs x As x 60	=	527329	acf/min
Qs(std)=Qs x FDA x (528/(Ts + 460)) x (Ps/29.92)	=	326219	dscf/min
I =(Ts + 460) x [(0.00267 x Vic) + (Vm(std) / 17.647)] x 100 / (Time x Ps x An x vs x 60)	=	99.5	%

********* ********* ********* ********* * *** ********* ********* ********* *********

cs = 15.432 x grams / Vm(std)	=	0.0185	grains/dscf
grains/acf = cs x 17.647 x Ps x FDA / (Ts + 460)	=	0.0114	grains/acf
C = cs / 7000	=	2.64E-06	lbs/dscf
EM = C x Qs(std) x 60	=	51.7	lbs/hr
E = C x F x (20.9 / 20.9 - %O2) F-Factor method	=	0.035	lbs/MM Btu

U.S. EPA
PARTICULATE CALCULATIONS
RUN NO. 3-S

PLANT : F. J. GANNON STATION
DATE : 5/13/98
SAMP. LOCATION : BOILER NO. 3
OPERATING COND.: SOOTBLOWING/WDF BLEND

SAMPLE TIME =	60.0	min.	NOZZLE DIA. =	0.197	in.
BAR. PRESSURE =	29.90	in.Hg	NOZZLE AREA =	0.000212	Sq.Ft.
STK. PRESSURE =	30.00	in.Hg	METER ORIFICE =	1.105	in. H2O
EFF. STACK AREA =	121.23	Sq.Ft.	METER VOLUME =	35.161	Cu.Ft.
Cp =	0.84		METER TEMP. =	91.6	DEG. F
GAS ANALYSIS =	14.0	% CO2	STACK TEMP. =	297.7	DEG. F
	5.2	% O2	SQ.RT. dP =	1.069	in. H2O
	0.0	% CO	CONDENSATE VOL.=	93.5	ml
	80.8	% N2	METER Y =	1.006	
LAB ANALYSIS =	0.03810	grams			
			F-FACTOR =	9780	dscf/MMBtu

********* ********* ********* ********* * *** ********* ********* ********* *********

Vw(std) = 0.04714 x Vic	=	4.408	scf
Vm(std) = 17.647 x Vm x Y x (Pb + (dH / 13.6)) / (Tm + 460)	=	33.917	scf
Bws = Vw(std) / (Vm(std) + Vw(std))	=	0.115	%
FDA = 1.0 - Bws	=	0.885	%
Md =(.44 x %CO2)+(.32 x %O2)+[.28 x (%N2 + %CO)]	=	30.45	lb/lb - mole
Ms = (Md x FDA) + (18.0 x Bws)	=	29.02	lb/lb - mole
vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts+460) / (Ms x Ps)]	=	71.6	ft/sec
Qs = vs x As x 60	=	520783	acf/min
Qs(std)=Qs x FDA x (528/(Ts + 460)) x (Ps/29.92)	=	322051	dscf/min
I =(Ts + 460) x [(0.00267 x Vic) + (Vm(std) / 17.647)] x 100 / (Time x Ps x An x vs x 60)	=	100.5	%

********* ********* ********* ********* * *** ********* ********* ********* *********

cs = 15.432 x grams / Vm(std)	=	0.0173	grains/dscf
grains/acf = cs x 17.647 x Ps x FDA / (Ts + 460)	=	0.0107	grains/acf
C = cs / 7000	=	2.47E-06	lbs/dscf
EM = C x Qs(std) x 60	=	47.8	lbs/hr

E = C x F x (20.9 / 20.9 - %O2) F-Factor method = 0.032 lbs/MM Btu

A-7 FUEL BLEND SULFURIC ACID MIST CALCULATIONS

TEST SUMMARY
H2SO4 EMISSIONS TEST RESULTS
USEPA METHOD 8

PLANT : F.J. GANNON STATION
DATE : 5-13-98
SAMPLING LOCATION BOILER NO. 3
OPERATING COND. : SOOTBLOWING/WDF BLEND
****

	RUN NO. 4-S	RUN NO. 5-S	RUN NO. 7-S	TEST AVERAGE
GAS FLOW RATE				
(dscf/min)	320278	320939	324786	322001
(acf/min)	517873	515691	533148	522237
STACK TEMP. (DEG. F)	299.3	302.2	306.5	302.7
ISOKINETIC (%)	99.2	102.5	99.3	100.3
MOISTURE (% H2O)	11.30	10.40	11.80	11.17
SAMPLE VOLUME (dscf)	33.270	34.483	33.799	33.851
CONDENSATE VOL. (ml)	90.1	84.5	95.6	90.1
METER TEMP. (DEG. F)	95	92	87	91
H2SO4 EMISSIONS (Including SO3) lb/dscf	4.97E-06	3.44E-06	4.32E-06	4.244E-06
LB/MMBTU By F-Factor	0.049	0.034	0.042	0.042

U.S. EPA
H2SO4 EMISSIONS TEST RESULTS
RUN NO. 4-S

PLANT : F.J. GANNON STATION
DATE : 5-13-98
SAMP. LOCATION : BOILER NO. 3
OPERATING COND.: SOOTBLOWING/WDF BLEND

SAMPLE TIME =	60.0	min.	NOZZLE DIA. =	0.197	in.
BAR. PRESSURE =	29.90	in.Hg	NOZZLE AREA =	0.0002117	Sq.Ft.
STK. PRESSURE =	30.00	in.Hg	METER ORIFICE =	1.089	in. H2O
EFF. STACK AREA =	121.23	Sq.Ft.	METER VOLUME =	34.682	Cu.Ft.
Cp =	0.84		METER TEMP. =	94.6	DEG. F
GAS ANALYSIS =	13.4	% CO2	STACK TEMP. =	299.3	DEG. F
	5.4	% O2	SQ.RT. dP =	1.060	in. H2O
	0.0	% CO	CONDENSATE VOL.=	90.1	ml
	81.2	% N2	METER Y =	1.006	
LAB ANALYSIS =	0.00000	grams	HEAT INPUT =	***	MM Btu/hr
			F-FACTOR =	9780	dscf/MMBtu

********* ********* ********* ********* ***** ********* ********* ********* *********

Vw(std) = 0.04714 x Vic	=	4.247	scf
Vm(std) = 17.647 x Vm x Y x (Pb + (dH / 13.6)) / (Tm + 460)	=	33.270	scf
Bws = Vw(std) / (Vm(std) + Vw(std))	=	0.113	
FDA = 1.0 - Bws	=	0.887	
Md =(.44 x %CO2)+(.32 x %O2)+[.28 x (%N2 + %CO)]	=	30.36	
Ms = (Md x FDA) + (18.0 x Bws)	=	28.96	
vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts+460) / (Ms x Ps)]	=	71.2	ft/sec
Qs = vs x As x 60	=	517873	acf/min
Qs(std)=Qs x FDA x (528/(Ts + 460)) x (Ps/29.92)	=	320278	dscf/min
I =(Ts + 460) x [(0.00267 x Vic) + (Vm(std) / 17.647)] x 100 / (Time x Ps x An x vs x 60)	=	99.2	%

********* ********* ********* ********* ***** ********* ********* ********* *********

NORMALITY OF BaBI2 * 2H2O	=	0.0102	
TITRANT BLANK	=	0.0500	milliliters
VOLUME SOLUTION	=	5.00E+02	milliliters
VOLUME ALIQUOT	=	20.0	milliliters
TITRANT	=	0.65	milliliters

H2SO4 (lb/dscf) = 0.0001081 x (N x (T-Tb) x Vs/Va)/Vm	=	0.00000497	lb/dscf
H2SO4 (lb/MMBtu)	=	0.0486	lb/MMBtu

U.S. EPA
H2SO4 EMISSIONS TEST RESULTS
RUN NO. 5-S

PLANT : F.J. GANNON STATION
DATE : 5-13-98
SAMP. LOCATION : BOILER NO. 3
OPERATING COND.: SOOTBLOWING/WDF BLEND

SAMPLE TIME =	60.0	min.	NOZZLE DIA. =	0.197	in.
BAR. PRESSURE =	29.90	in.Hg	NOZZLE AREA =	0.0002117	Sq.Ft.
STK. PRESSURE =	30.00	in.Hg	METER ORIFICE =	1.080	in. H2O
EFF. STACK AREA =	121.23	Sq.Ft.	METER VOLUME =	35.779	Cu.Ft.
Cp =	0.84		METER TEMP. =	92.0	DEG. F
GAS ANALYSIS =	13.4	% CO2	STACK TEMP. =	302.2	DEG. F
	5.4	% O2	SQ.RT. dP =	1.056	in. H2O
	0.0	% CO	CONDENSATE VOL.=	84.5	ml
	81.2	% N2	METER Y =	1.006	
LAB ANALYSIS =	0.00000	grams	HEAT INPUT =	***	MM Btu/hr
			F-FACTOR =	9780	dscf/MMBtu

********* ********* ********* ********* ***** ********* ********* ********* *********

Vw(std) = 0.04714 x Vic	=	3.983	scf
Vm(std) = 17.647 x Vm x Y x (Pb + (dH / 13.6)) / (Tm + 460)	=	34.483	scf
Bws = Vw(std) / (Vm(std) + Vw(std))	=	0.104	
FDA = 1.0 - Bws	=	0.896	
Md =(.44 x %CO2)+(.32 x %O2)+[.28 x (%N2 + %CO)]	=	30.36	
Ms = (Md x FDA) + (18.0 x Bws)	=	29.07	
vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts+460) / (Ms x Ps)]	=	70.9	ft/sec
Qs = vs x As x 60	=	515691	acf/min
Qs(std)=Qs x FDA x (528/(Ts + 460)) x (Ps/29.92)	=	320939	dscf/min
I =(Ts + 460) x [(0.00267 x Vic) + (Vm(std) / 17.647)] x 100 / (Time x Ps x An x vs x 60)	=	102.5	%

********* ********* ********* ********* ***** ********* ********* ********* *********

NORMALITY OF BaBl2 * 2H2O	=	0.0102	
TITRANT BLANK	=	0.0500	milliliters
VOLUME SOLUTION	=	5.00E+02	milliliters
VOLUME ALIQUOT	=	20.0	milliliters
TITRANT	=	0.48	milliliters

H2SO4 (lb/dscf) = 0.0001081 x (N x (T-Tb) x Vs/Va)/Vm	=	0.00000344	lb/dscf
H2SO4 (lb/MMBtu)	=	0.0336	lb/MMBtu

U.S. EPA
H2SO4 EMISSIONS TEST RESULTS
RUN NO. 7-S

PLANT : F.J. GANNON STATION
DATE : 5-13-98
SAMP. LOCATION : BOILER NO. 3
OPERATING COND.: SOOTBLOWING/WDF BLEND

SAMPLE TIME =	60.0	min.	NOZZLE DIA. =	0.197	in.
BAR. PRESSURE =	29.90	in.Hg	NOZZLE AREA =	0.0002117	Sq.Ft.
STK. PRESSURE =	30.00	in.Hg	METER ORIFICE =	1.140	in. H2O
EFF. STACK AREA =	121.23	Sq.Ft.	METER VOLUME =	34.775	Cu.Ft.
Cp =	0.84		METER TEMP. =	87.5	DEG. F
GAS ANALYSIS =	13.4	% CO2	STACK TEMP. =	306.5	DEG. F
	5.0	% O2	SQ.RT. dP =	1.085	in. H2O
	0.0	% CO	CONDENSATE VOL.=	95.6	ml
	81.6	% N2	METER Y =	1.006	
LAB ANALYSIS =	0.00000	grams	HEAT INPUT =	***	MM Btu/hr
			F-FACTOR =	9780	dscf/MMBtu

********* ********* ********* ********* ***** ********* ********* ********* *********

Vw(std) = 0.04714 x Vic	=	4.507	scf
Vm(std) = 17.647 x Vm x Y x (Pb + (dH / 13.6)) / (Tm + 460)	=	33.799	scf
Bws = Vw(std) / (Vm(std) + Vw(std))	=	0.118	
FDA = 1.0 - Bws	=	0.882	
Md =(.44 x %CO2)+(.32 x %O2)+[.28 x (%N2 + %CO)]	=	30.34	
Ms = (Md x FDA) + (18.0 x Bws)	=	28.88	
vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts+460) / (Ms x Ps)]	=	73.3	ft/sec
Qs = vs x As x 60	=	533148	acf/min
Qs(std)=Qs x FDA x (528/(Ts + 460)) x (Ps/29.92)	=	324786	dscf/min
I =(Ts + 460) x [(0.00267 x Vic) + (Vm(std) / 17.647)] x 100 / (Time x Ps x An x vs x 60)	=	99.3	%

********* ********* ********* ********* ***** ********* ********* ********* *********

NORMALITY OF BaBl2 * 2H2O	=	0.0102	
TITRANT BLANK	=	0.0500	milliliters
VOLUME SOLUTION	=	5.00E+02	milliliters
VOLUME ALIQUOT	=	20.0	milliliters
TITRANT	=	0.58	milliliters

H2SO4 (lb/dscf) = 0.0001081 x (N x (T-Tb) x Vs/Va)/Vm	=	0.00000432	lb/dscf
H2SO4 (lb/MMBtu)	=	0.0423	lb/MMBtu

A-8 FUEL BLEND VOLATILE ORGANICS CALCULATIONS

F. J. GANNON GENERATING STATION
VOLATILE ORGANIC COMPOUNDS

BOILER NO. 3
FUEL BLEND TEST
MAY 13, 1998

RUN NO.	TIME	ppm VOC	IBS/MMBtu
2	1345 - 1445	2.9	0.005
3	1505 - 1605	1.3	0.002
5	1845 - 1945	6.7	0.011
	Average	3.63	0.006

Emission Rate Calculation:

lb/Hr= Concentration (ppmVOC) x (Propane density factor) x (Volumetric Stack Flow Qs) x 10^{-8}

lb/MMBtu = lb/Hr / Heat Input
where:

- Molecular Wt. of Propane = 44
- Volumetric Stack flow = 1.9598E07 dscf/hr
- Propane density factor = molecular wt. /365.15 SCF per lb-mole x 10^{2}
- Heat Input = 1473.2 MMBtu/Hr

CALCULATION OF AVERAGE VOC CONCENTRATION

TEST METHOD 25A CORRECTION

RUN: 2

SOURCE: F. J. GANNON STATION BOILER 3 WDF BLEND

TEST DATE: 5/13/98

GAS VALUE	INITIAL CAL	FINAL CAL	MEAN CAL
0.00 ppm PROPANE	0.00	0.40	0.20
5.05 ppm PROPANE	5.20	5.20	5.20

$\bar{C}$ = 3.1

CORRECTED RESULTS

2.9 ppm VOC

Corrected Conc. = Cma($\bar{C}$ - Co)/(Cm - Co)

Where: $\bar{C}$ = mean reference measurement
Co = mean zero calibration response
Cm = mean mid or upscale calibration gas response
Cma = actual mid or upscale calibration gas concentration

CALCULATION OF AVERAGE VOC CONCENTRATION

TEST METHOD 25A CORRECTION

RUN: 3

SOURCE: F. J. GANNON STATION BOILER 3 WDF BLEND

TEST DATE: 5/13/98

GAS VALUE	INITIAL CAL	FINAL CAL	MEAN CAL
0.00 ppm PROPANE	0.40	0.10	0.25
5.05 ppm PROPANE	5.20	4.90	5.05

$\bar{C}$ = 1.5

CORRECTED RESULTS

1.3 ppm VOC

Corrected Conc. = Cma($\bar{C}$ - Co)/(Cm - Co)

Where: $\bar{C}$ = mean reference measurement
Co = mean zero calibration response
Cm = mean mid or upscale calibration gas response
Cma = actual mid or upscale calibration gas concentration

CALCULATION OF AVERAGE VOC CONCENTRATION

TEST METHOD 25A CORRECTION

RUN: 5

SOURCE: F. J. GANNON STATION BOILER 3 WDF BLEND

TEST DATE: 5/13/98

GAS VALUE	INITIAL CAL	FINAL CAL	MEAN CAL
0.00 ppm PROPANE	0.10	0.10	0.10
5.05 ppm PROPANE	5.30	5.00	5.15

$\bar{C}$ = 6.8

CORRECTED RESULTS

6.7 ppm VOC

Corrected Conc. = $Cma(C - \bar{Co})/(Cm - Co)$

Where: $\bar{C}$ = mean reference measurement
Co = mean zero calibration response
Cm = mean mid or upscale calibration gas response
Cma = actual mid or upscale calibration gas concentration

A-9 FUEL BLEND HYDROGEN CHLORIDE CALCULATIONS

F. J. GANNON GENERATING STATION
HYDROGEN CHLORIDE

BOILER NO.3 WDF
BLEND TEST
JUNE 13, 1998

Run 1-S	Run 2-S	Run 3-S
K_{HCL}	K_{HCL}	K_{HCL}
1.028	1.028	1.028
$V_{S(ml)}$	$V_{S(ml)}$	$V_{S(ml)}$
100	100	100
S_X	S_X	S_X
103	103	110
B_X	B_X	B_X
0.6	0.6	0.6
$M_{HX\ HCL}$ µg	$M_{HX\ HCL}$ µg	$M_{HX\ HCL}$ µg
10526.72	10526.72	11246.32

Vol. Flow	326628	326628	326628	DSCF/Min.
Vol. Flow	19597680	19597680	19597680	DSCF/Hr.
Vmstd	0.13606	0.13527	0.14031	DSCM
Heat Input	1473.2	1473.2	1473.2	MMbtu/Hr
Concentration HCl =	77.3682199	77.82006358	80.15337467	mg/dscm
	4.83141E-06	4.85962E-06	5.00533E-06	lbs/dscf
Emission Rate =	94.68	95.24	98.09	lbs/hr
	0.064	0.065	0.067	lbs/MMBtu

Average Emission Rate = 0.065 lbs/MMBtu

Emission Rate Calculation:

lbs/Hr = (Concentration HCL(mg/dscm) x 6.2446899×10^{-8}) x
Volumetric Stack Flow (dscf/hr)

lb/MMBtu= lb/Hr / Heat Input

USEPA REFERENCE METHOD
STP CALCULATIONS

PLANT: F. J. Gannon Station WDF Blend | Run Number: 1-S
SAMPLING LOCATION Boiler No.3
DATE : 05/13/98

METER Y:	1.029	BAR. PRESS(Pbar):	29.78 in. Hg.
MTR. (Tm):	82 Deg. F		
F-FACTOR:	9780 dscm / J	% OXYGEN :	5.0 Percent

SAMPLE VOLUME-L (Vm)	136.365 Liters
SAMPLE VOLUME (Vm std)	0.13606 CU. Meters

USEPA REFERENCE METHOD
STP CALCULATIONS

PLANT: F. J. Gannon Station WDF Blend
Run Number: 2-S
SAMPLING LOCATION Boiler No.3
DATE : 05/13/98

METER Y:	1.029	BAR. PRESS(Pbar):	29.78 in. Hg.
MTR. (Tm):	88 Deg. F		
F-FACTOR:	9780 dscm / J	% OXYGEN :	5.6 Percent

SAMPLE VOLUME-L (Vm) 137.075 Liters

SAMPLE VOLUME (Vm std) 0.13527 CU. Meters

USEPA REFERENCE METHOD
STP CALCULATIONS

PLANT: F. J. Gannon Station WDF Blend   Run Number: 3-S
SAMPLING LOCATION Boiler No.3
DATE : 05/13/98

METER Y:	1.029	BAR. PRESS(Pbar):	29.90 in. Hg.
MTR. (Tm):	92 Deg. F		
F-FACTOR:	9780 dscm / J	% OXYGEN :	5.2 Percent

SAMPLE VOLUME-L (Vm)	142.645 Liters
SAMPLE VOLUME (Vm std)	0.14031 CU. Meters

A-10 FUEL BLEND SULFUR DIOXIDE CALCULATIONS

WOOD DERIVED FUEL TEST SUMMARY
SULFUR DIOXIDE TEST RESULTS - FUEL BLEND

PLANT:	F. J. GANNON STATION
SAMPLING LOCATION:	BOILER NO. 3
DATE:	May 13, 1998

USEPA Method 6C

RUN NO.	lbs. SO_2 /MM Btu
1	2.109
2	1.863
3	1.986
Average	1.986

CALCULATION OF AVERAGE SULFUR DIOXIDE EMISSIONS

RUN: 1

SOURCE: F. J. GANNON STATION BOILER 3 WDF

TEST DATE: 5/13/98

GAS VALUE	INITIAL CAL	FINAL CAL	MEAN CAL
0.0 ppm SO_2	0.7	4.9	2.8
746.3 ppm SO_2	713.8	712.1	713.0
0.00 % CO_2	0.05	0.12	0.09
10.01 % CO_2	10.48	10.25	10.37

$\bar{C}(SO_2)$ = 822.0 $\bar{C}(CO_2)$ = 12.66

CORRECTED RESULTS

861 ppm SO_2
12.2 % CO_2
2.109 lb SO_2/MBTU

Corrected Conc. = $Cma(\bar{C} - Co)/(Cm - Co)$

Where: $\bar{C}$ = mean reference measurement
Co = mean zero calibration response
Cm = mean mid or upscale calibration gas response
Cma = actual mid or upscale calibration gas concentration

E = (ppm SO_2)(F-Factor)(Conv. Factor)(100)/(% CO_2)

F-Factor = 1800
Conv. Factor = 1.660E-07

CALCULATION OF AVERAGE SULFUR DIOXIDE EMISSIONS

RUN: 2

SOURCE: F. J. GANNON STATION BOILER 3 WDF

TEST DATE: 5/13/98

GAS VALUE	INITIAL CAL	FINAL CAL	MEAN CAL
0.0 ppm SO2	4.9	6.4	5.7
746.3 ppm SO2	712.1	721.4	716.8
0.00 % CO2	0.12	0.13	0.13
10.01 % CO2	10.25	10.26	10.26

$\bar{C}(SO_2) =$ 736.6 $\bar{C}(CO_2) =$ 12.57

CORRECTED RESULTS

767 ppm SO2
12.3 % CO2
1.863 lb SO2/MBTU

Corrected Conc. = $Cma(\bar{C} - Co)/(Cm - Co)$

Where: $\bar{C}$ = mean reference measurement
Co = mean zero calibration response
Cm = mean mid or upscale calibration gas response
Cma = actual mid or upscale calibration gas concentration

E = (ppm SO2)(F-Factor)(Conv. Factor)(100)/(% CO2)

F-Factor = 1800
Conv. Factor = 1.660E-07

CALCULATION OF AVERAGE SULFUR DIOXIDE EMISSIONS

RUN: 3

SOURCE: F. J. GANNON STATION BOILER 3 WDF

TEST DATE: 5/13/98

GAS VALUE	INITIAL CAL	FINAL CAL	MEAN CAL
0.0 ppm SO_2	6.4	6.4	6.4
746.3 ppm SO_2	721.4	721.5	721.5
0.00 % CO_2	0.13	0.15	0.14
10.01 % CO_2	10.26	10.27	10.27

$\bar{C}(SO_2)$ = 795.8 $\bar{C}(CO_2)$ = 12.70

CORRECTED RESULTS

824 ppm SO_2
12.4 % CO_2
1.986 lb SO_2/MBTU

Corrected Conc. = Cma($\bar{C}$ - Co)/(Cm - Co)

Where: $\bar{C}$ = mean reference measurement
Co = mean zero calibration response
Cm = mean mid or upscale calibration gas response
Cma = actual mid or upscale calibration gas concentration

E = (ppm SO_2)(F-Factor)(Conv. Factor)(100)/(% CO_2)

F-Factor = 1800
Conv. Factor = 1.660E-07

A-11 NOMENCLATURE

SOURCE SAMPLING NOMENCLATURE

A	=	Absorbance of sample.
A_n	=	Cross-sectional area of nozzle, m^2 (ft^2).
A_s	=	Cross-sectional area of stack, m^2 (ft^2).
B_{ws}	=	Water vapor in the gas steam, proportion by volume.
C	=	Concentration of particulate matter, (lbs/dscf), Method 5,17.
C	=	Concentration of NO_x, as NO_2, basis, corrected to standard conditions, mg/dscm (lbs/dscf), Method 7.
C_a	=	Concentration of acetone blank residue, mg/g.
CH_2SO_4	=	Sulfuric acid (including SO_3) concentration, g/dscm (lbs/dscf).
C_p	=	Pitot tube coefficient, dimensionless.
c_s	=	Concentration of stack gas particulates, dry basis corrected to standard conditions, g/dscm (lbs/dscf).
CSO_2	=	Sulfur dioxide concentration, mg/dscm (lbs/dscf).
E	=	Pollutant emissions, lbs/10^6 Btu.
EM	=	Particulate emission rate, lbs/hr.
F	=	Factor ratio of generated flue gases to calorific value of fuel, Method 5,17.
F	=	Dilution factor (i.e., 25/5, 25/10, etc.) required only if sample dilution was needed to reduce the absorbance to the range of calibration, Method 7.
FDA	=	Fraction of dry air.
I	=	Percent of isokinetic sampling, %.
K_c	=	Spectrophotometer calibration factor.
K_p	=	Pitot tube constant,

$$34.97 m/\sec\left[\frac{(g/g\text{-}mole)(mmHg)}{(°K)(mmH20)}\right]1/2$$

Metric

$$85.49ft / \sec\left[\frac{(lb / lb\text{-}mole)('' Hg)}{(° K)(mmH2O)}\right]1/2$$

English

L_a	=	Maximum acceptable leakage rate for either a pretest leak check or a leak check following a component change; equal to 0.00057 m^3/min (0.02 ft^3/min) or 4% of the average sampling rate, whichever is less.
L_i	=	Individual leakage rate observed during the leak check conducted prior to the "ith" component change (i = 1, 2, 3,...n), m^3/min (ft/min).
L_p	=	Leakage rate observed during the post test leak check, m^3/min (ft^3/min).
m	=	Mass of NO_x as NO_2 in gas sample, μg.
m_a	=	Mass of acetone residue after evaporation, mg.
M_d	=	Molecular weight of stack gas, dry basis, g/g-mole (lb/lb-mole).
m_f	=	Filter weight gain, mg.
m_n	=	Total amount of particulates collected, mg.
M_s	=	Molecular weight of stack gas, wet basis, g/g-mole (lb/lb-mole), or $M_d(1 - B_{ws}) = 18.0\ B_{ws}$.
M_w	=	Molecular weight of water, 18.0 g/g-mole (18.0 lb/lb-mole).
N	=	Normality of $Ba(ClO_4)_2{\cdot}3H_2O$ titrant, g-eq/l.
N	=	Normality of barium perchlorate titrant, meq/ml.
P_a	=	Density of acetone, mg/ml (see bottle label).
P_{bar}	=	Barometric pressure at sampling site, mm Hg (in. Hg).
P_f	=	Final absolute pressure of flask, mm Hg (in. Hg).
P_g	=	Stack static pressure, mm Hg (in. Hg).
P_i	=	Initial absolute pressure of flask, mm Hg (in. Hg).
P_s	=	Absolute stack pressure, 760 mm Hg (29.92 in. Hg).
P_w	=	Density of water, 0.9982 g/ml (0.0022 lb/ml).
Q_s	=	Volumetric flow rate, actual cubic feet per min, acf/min.
Q_{std}	=	Dry volumetric stack gas flow rate corrected to standard conditions dsm^3/hr (dscf/hr).
R	=	Ideal gas constant, 0.06236 (mm Hg - m^3)/(°K - g - mole) for metric units and 21.85 (in. Hg - ft^3)(°R - 1b - mole) for English units.

S.V.P.	=	Saturated vapor pressure of water at average stack temperature mm Hg (in. Hg).
T_f	=	Final absolute temperature of flask, K (°R).
T_i	=	Initial absolute temperature of flask, K (°R).
T_m	=	Absolute average dry gas meter temperature, K (°R).
t_s	=	Stack temperature, °C (°F).
T_s	=	Absolute stack temperature, K (°R), or 273 + t_s for metric system or 460 + t_s for English system.
T_{std}	=	Standard absolute temperature, 293K (528°R).
V_a	=	Volume of acetone blank, ml, (Method 5,17).
V_a	=	Volume of sample aliquot titrated, ml, (Method 6).
V_a	=	Volume of absorbing solution, 25 ml, (Method 7).
V_a	=	Volume of sample aliquot titrated, 100 ml for H_2SO_4 and 10ml for SO_2 (Method 8).
V_{aw}	=	Volume of acetone used in wash, ml.
V_f	=	Final volume of condenser water, ml.
V_f	=	Volume of flask and valve, ml.
V_i	=	Initial volume of condenser water, ml.
V_{ic}	=	Total volumes of liquid and silica gel collected in impingers, ml.
V_m	=	Dry gas volume measured by dry gas meter, scm (dcf).
$V_{m(std)}$	=	Volume of gas sample measured by the dry gas meter and corrected to standard condition, dscm (dscf).
v_s	=	Average stack gas velocity calculated by Method 2, m/sec (ft/sec).
V_{sc}	=	Sample volume at standard conditions (dry basis), ml.
V_{soln}	=	Total volume of solution in which the sulfur dioxide sample is contained, 100 ml, (method 6).
V_{soln}	=	Total volume of solution in which the H_2SO_4 or SO_2 sample is contained, 250 ml or 1000 ml, respectively, (Method 8).
V_t	=	Volume of $Ba(ClO_4)_2 \cdot 3H_2O$ titrant used for the sample, ml, (Method 8).
V_t	=	Volume of barium perchlorate titrant used for the sample (average of replicate titrations), ml, (Method 6).
V_{tb}	=	Volume of barium perchlorate titrant used for the blank, ml.
$V_{w(std)}$	=	Volume of water vapor in the gas sample, corrected to standard conditions, scm (scf).
$V_{wc(std)}$	=	Volume of condensed water vapor, corrected to standard conditions, sm^3(scf).

$V_{wsg(std)}$	=	Volume of water vapor collected in silica gel, corrected to standard conditions, sm^3 (scf).
W_a	=	Weight of acetone wash residue, mg.
W_f	=	Final weight of silica gel or silica gel plus impinger, g.
W_i	=	Initial weight of silica gel or silica gel plus impinger, g.
Y	=	Dry gas meter calibration factor.
ΔH	=	Average pressure differential across the orifice meter, mm (in) H_2O.
$\Delta H@$	=	Measurement of pressure differential across the orifice meter, mm (in.) H_2O.
Δp	=	Average velocity head of stack gas, mm (in.) H_2O.
ΔV_m	=	Incremental volume measured by dry gas meter at each traverse point, dm^3 (dcf).
%CO	=	Percent CO by volume (dry basis), average of three CO values.
$\%CO_2$	=	Percent CO_2 by volume (dry basis), average of three analyses.
%EA	=	Percent excess air, %.
$\%N_2$	=	Percent N_2 by volume (dry basis), average of three N_2 values.
$\%O_2$	=	Percent O_2 by volume (dry basis), average of three O_2 values.
0.262	=	Ratio of O_2 to N_2 in air, v/v.
2	=	50/25, the aliquot factor, (Method 7).
13.6	=	Specific gravity of mercury (Hg).
18.0	=	Molecular weight of water, g/g-mole (lb/lb-mole).
32.03	=	Equivalent weight of sulfur dioxide.
60	=	Seconds per minute (sec/min).
100	=	Conversion to percent, %.
3600	=	Conversion factor, (sec/hr).
θ	=	Total sampling time, min.
θ_I	=	Interval of sampling time from beginning of a run until first component change, min.
θ_i	=	Interval of sampling time between two successive component changes, beginning with first and second changes, min.
θ_p	=	Interval of sampling time from final (nth) component change until the end of the sampling run, min.

APPENDIX B

LABORATORY ANALYTICAL DATA

B-1 BASELINE PARTICULATE LABORATORY DATA

BLANK ANALYTICAL DATA FORM

Plant F.J. CANNON

Sample location BOILER NO 2 (WOF BASELINE)

Relative humidity

Liquid level marked and container sealed ✓ MRS8

Blank volume (V_a) 125 ml

Date and time of wt 5/27/98 0705 41% Gross wt 106792.1 mg

Date and time of wt 5/27/98 1345 42% Gross wt 106791.9 mg

Date and time of wt — Gross wt — mg

Date and time of wt — Gross wt — mg

Average Gross wt 106792.0 mg ✓

Tare wt 106793.2 mg ✓

Weight of blank (m_{ab}) -1.2 mg

0.001% of 106792.0mg = 1.07 ✓

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

Filters Filter number 001330

Date and time of wt 5/27/98 0705 41% Gross wt 1562.7 mg

Date and time of wt 5/27/98 1345 42% Gross wt 1562.9 mg

Date and time of wt — Gross wt — mg

Date and time of wt — Gross wt — mg

Average gross wt 1562.8 mg ✓

Tare wt 1560.35 mg ✓

Note: Average difference must be less than ±5 mg or 2% of total sample weight whichever is greater.

Remarks 0.001% of acetone blank will be added to laboratory recoveries. RAM 5/28/98

Signature of analyst [signature]

Signature of reviewer RAM Harby, 5/28/98

h:/shardata\source\bigbend\sampanal

SAMPLE ANALYTICAL DATA FORM

Plant F. J. GANNON STATION Run number 15

Sample location BOILER NO. 3 (WDF BASELINE)

Relative humidity

Sample Type	Sample Identifiable	Liquid Level Marked and/or Container Sealed
Acetone Rinse	✓	✓
Filters	✓	✓

Acetone rinse container number AIR 55

Acetone rinse volume (V_{aw}) 125 ml

Acetone blank residue weight (M_{ab}) -1.07 mg

Date and time of wt 5/27/98 0705 41% Gross wt 95624.6 mg

Date and time of wt 5/27/98 1345 42% Gross wt 95624.8 mg

Date and time of wt — Gross wt — mg

Date and time of wt — Gross wt — mg

Average gross wt 95624.7 mg ✓

Tare wt 95624.4 mg ✓

Less acetone blank wt (M_{ab}) -1.07 mg

Weight of particulate in acetone rinse (m_a) 1.37 mg ✓

Filter/Thimble Number 0013368 (BA)

Date and time of wt 5/27/98 0705 41% Gross wt 1581.6 mg

Date and time of wt 5/27/98 1345 42% Gross wt 1581.3 mg

Date and time of wt — Gross wt — mg

Date and time of wt — Gross wt — mg

Average gross wt 1581.45 ✓ mg

Tare wt 1546.15 ~~1185.9~~ ✓ mg (BA)

Weight of particulate on filter(s) (m_f) 35.3 ~~1.37~~ ✓ mg (BA)

Weight of particulate in acetone rinse (m_a) 1.37 mg

Total weight of particulate (m_n) 36.67 ✓ mg

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

Remarks

Signature of analyst Barry [signature]

Signature of reviewer [signature] 5/28/98

h:/shardata\source\bigbend\sampanal

SAMPLE ANALYTICAL DATA FORM

Plant F. J. GANNON STATION Run number 25

Sample location BOILER NO. 3 (WDF BASELINE)

Relative humidity

Sample Type	Sample Identifiable	Liquid Level Marked and/or Container Sealed
Acetone Rinse	✓	✓
Filters	✓	✓

Acetone rinse container number AIR 56

Acetone rinse volume (V_{aw}) 125 ml

Acetone blank residue weight (M_{ab}) -1.07 mg

Date and time of wt 5/27/98 0705 41% Gross wt 100803.7 mg

Date and time of wt 5/27/98 1345 42% Gross wt 100803.2 mg

Date and time of wt — Gross wt — mg

Date and time of wt — Gross wt — mg

Average gross wt 100803.45 mg ✓

Tare wt 100803.35 mg ✓

Less acetone blank wt (M_{ab}) -1.07 mg

Weight of particulate in acetone rinse (m_a) 1.17 mg ✓

Filter/Thimble Number 001339

Date and time of wt 5/27/98 0705 41% Gross wt 1217.0 mg

Date and time of wt 5/27/98 1345 42% Gross wt 1216.9 mg

Date and time of wt — Gross wt — mg

Date and time of wt — Gross wt — mg

Average gross wt 1216.95 mg ✓

Tare wt 1189.9 mg ✓

Weight of particulate on filter(s) (m_f) 27.05 mg ✓

Weight of particulate in acetone rinse (m_a) 1.17 mg

Total weight of particulate (m_n) 28.22 mg ✓

<u>Note:</u> In no case should a blank residue >0.01 mg/g or 0.001% of the weight of acetone used be subtracted from the sample weight.

Remarks

Signature of analyst [signature]

Signature of reviewer [signature] 5/28/98

h:/shardata\source\bigbend\sampanal

SAMPLE ANALYTICAL DATA FORM

Plant F. J. GANNON STATION Run number 35

Sample location BOILER NO. 3 (WOF BASELINE)

Relative humidity ______

Sample Type	Sample Identifiable	Liquid Level Marked and/or Container Sealed
Acetone Rinse	✓	✓
Filters	✓	✓

Acetone rinse container number AIR 57

Acetone rinse volume (V_{aw}) 125 ml

Acetone blank residue weight (M_{ab}) ______ mg

Date and time of wt 5/27/98 0705 41% Gross wt 107050.7 mg

Date and time of wt 5/27/98 1345 42% Gross wt 107050.5 mg

Date and time of wt — Gross wt — mg

Date and time of wt — Gross wt — mg

Average gross wt 107050.6 mg ✓

Tare wt 107049.25 mg ✓

Less acetone blank wt (M_{ab}) 1.07 mg

Weight of particulate in acetone rinse (m_a) 2.42 mg ✓

Filter/Thimble Number 001340

Date and time of wt 5/27/98 0705 41% Gross wt 1621.4 mg

Date and time of wt 5/27/98 1345 42% Gross wt 1621.5 mg

Date and time of wt — Gross wt — mg

Date and time of wt — Gross wt — mg

Average gross wt 1621.45 mg ✓

Tare wt 1585.65 mg ✓

Weight of particulate on filter(s) (m_f) 35.8 mg ✓

Weight of particulate in acetone rinse (m_a) 2.42 mg ✓

Total weight of particulate (m_n) 38.22 mg ✓

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

Remarks ______

Signature of analyst [signature]

Signature of reviewer [signature] 5/28/98

h:/shardata\source\bigbend\sampanal

B-2 BASELINE SULFURIC ACID MIST LABORATORY DATA

Data for Stack Test Analyses (continued):

Sample 2s, NaOH, mg halide ion F / l = <0.05

Sample 3s, H2SO4, mg halide ion Cl / l = 65
Sample 3s, H2SO4, mg halide ion Br / l = 0.73
Sample 3s, H2SO4, mg halide ion F / l = 9.4

Sample 3s, NaOH, mg halide ion Cl / l = <0.1
Sample 3s, NaOH, mg halide ion Br / l = <0.4
Sample 3s, NaOH, mg halide ion F / l = <0.05

SO2 Analysis

Normality of BaCl2 * 2H2O = 0.0102
Volume of Sample Aliquot, mls = 1
Avg. Value of Blank Titrations, mls = 0.08

Run 4s, Final Sample Volume, mls = 500
Run 4s Avg. of Titrations, mls = 14.10

Run 5s, Final Sample Volume, mls = 510
Run 5s Avg. of Titrations, mls = 12.81

Run 6s, Final Sample Volume, mls = 500
Run 6s Avg. of Titrations, mls = 10.72

SO3 Analysis

Normality of BaCl2 * 2H2O = 0.0102
Final Sample Volume, mls = 500
Volume of Sample Aliquot, mls = 20
Avg. Value of Blank Titrations, mls = 0.05

Run 4s Avg. of Titrations, mls = 0.62
Run 5s Avg. of Titrations, mls = 0.50
Run 6s Avg. of Titrations, mls = 5.78

If there are any questions regarding this data, please call.

Robert L. Dorey
Supervisor of Laboratory Services

B-3 BASELINE HYDROGEN CHLORIDE LABORATORY DATA

From: Tampa Electric Company
Laboratory Services Department
5012 Causeway Blvd. Tampa, FL 33619
H.R.S. Certification # E54272
D.E.P. Comprehensive QA Plan #910140

June 9, 1998

To: Bruce Rodriguez, Air Programs

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA43009 Location code: SPECL-GN
Project account code: J18
Location Description: Gannon Stack - Unit 3
Sample collector: B. RODRIGUEZ
Sample collection date: 05/20/98 Time: 09:05
Lab submittal date: 05/26/98 Time: 10:05

Parameter	**Result**	**Units**	**MDL**
Stack Test Analyses	see below	---	---

Data for Stack Test Analyses:

Method 26 - Hydrogen Chloride Emissions

Volume of filtered and diluted sample, ml = 100

Blank, H2SO4, mg halide ion Cl / l = <0.6
Blank, H2SO4, mg halide ion Br / l = <0.1
Blank, H2SO4, mg halide ion F / l = <0.2

Blank, NaOH, mg halide ion Cl / l = <0.1
Blank, NaOH, mg halide ion Br / l = <0.4
Blank, NaOH, mg halide ion F / l = <0.05

Sample 1s, H2SO4, mg halide ion Cl / l = 48
Sample 1s, H2SO4, mg halide ion Br / l = 0.56
Sample 1s, H2SO4, mg halide ion F / l = 8.0

Sample 1s, NaOH, mg halide ion Cl / l = <0.1
Sample 1s, NaOH, mg halide ion Br / l = <0.4
Sample 1s, NaOH, mg halide ion F / l = <0.05

Sample 2s, H2SO4, mg halide ion Cl / l = 65
Sample 2s, H2SO4, mg halide ion Br / l = 0.73
Sample 2s, H2SO4, mg halide ion F / l = 9.3

Sample 2s, NaOH, mg halide ion Cl / l = <0.1
Sample 2s, NaOH, mg halide ion Br / l = <0.4

B-4 FUEL BLEND PARTICULATE LABORATORY DATA

BLANK ANALYTICAL DATA FORM

Plant F.J. GANNON STATION

Sample location BOILER NO 3

Relative humidity SEE BELOW

Liquid level marked and container sealed AIR 34

Blank volume (V_a) 200 ml

Date and time of wt 5-18-98 @ 12:07 48% RAB Gross wt 107865.1 mg

Date and time of wt 5-19-98 @ 07:41 42% RAB Gross wt 107865.4 mg

Date and time of wt — Gross wt — mg

Date and time of wt — Gross wt — mg

Average Gross wt 107865.25 mg

Tare wt 107865.05 mg

Weight of blank (m_{ab}) 0.2 mg ✓

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

Filters Filter number 001329

Date and time of wt 5-15-98 0745 41% Gross wt 1309.7 mg

Date and time of wt 5-15-98 1400 43% Gross wt 1309.9 mg

Date and time of wt — Gross wt — mg

Date and time of wt — Gross wt — mg

Average gross wt 1309.8 mg ✓

Tare wt 1308.65 mg

Note: Average difference must be less than ±5 mg or 2% of total sample weight whichever is greater.

Remarks

Signature of analyst [signature]

Signature of reviewer [signature] 5/24/98

h:/shardata\source\bigbend\sampanal

SAMPLE ANALYTICAL DATA FORM

Plant F. J. Gannon Station Run number 15

Sample location Boiler No. 3

Relative humidity See Below

Sample Type	Sample Identifiable	Liquid Level Marked and/or Container Sealed
Acetone Rinse	✓	✓
Filters	✓	✓

Acetone rinse container number AIR 52

Acetone rinse volume (V_{aw}) 200 ml

Acetone blank residue weight (M_{ab}) 0.2 mg

Date and time of wt 5-18-98@ 12:07 48% RAB Gross wt 107833.7 mg

Date and time of wt 5-19-98@ 07:41 42% RAB Gross wt 107833.9 mg

Date and time of wt — Gross wt — mg

Date and time of wt — Gross wt — mg

Average gross wt 107833.8 mg ✓

Tare wt 107831.4 mg ✓

Less acetone blank wt (M_{ab}) 0.2 mg

Weight of particulate in acetone rinse (m_a) 2.2 mg ✓

Filter/Thimble Number 001332

Date and time of wt 5-15-98 0745 41% Gross wt 1617.9 mg

Date and time of wt 5-15-98 1400 43% Gross wt 1618.2 mg

Date and time of wt — Gross wt — mg

Date and time of wt — Gross wt — mg

Average gross wt 1618.05 mg ✓

Tare wt 1579.7 mg

Weight of particulate on filter(s) (m_f) 38.35 mg ✓

Weight of particulate in acetone rinse (m_a) 2.20 mg

Total weight of particulate (m_n) 40.55 mg ✓

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

Remarks

Signature of analyst [signature]

Signature of reviewer [signature] 5/26/98

h:/shardata\source\bigbend\sampanal

SAMPLE ANALYTICAL DATA FORM

Plant F.J. GANNON STATION Run number 25

Sample location BOILER NO. 3

Relative humidity SEE BELOW

Sample Type	Sample Identifiable	Liquid Level Marked and/or Container Sealed
Acetone Rinse	✓	✓
Filters	✓	✓

Acetone rinse container number AIR 53

Acetone rinse volume (V_{aw}) 200 ml

Acetone blank residue weight (M_{ab}) 0.2 mg

Date and time of wt 5-18-98@12:07 48% RH Gross wt 108192.1 mg

Date and time of wt 5-19-98@07:41 42% RH Gross wt 108192.2 mg

Date and time of wt — Gross wt — mg

Date and time of wt — Gross wt — mg

Average gross wt 108192.15 mg ✓

Tare wt 108185.75 mg ✓

Less acetone blank wt (M_{ab}) 0.2 mg

Weight of particulate in acetone rinse (m_a) 6.2 mg ✓

Filter/Thimble Number 001333

Date and time of wt 5-15-98 0745 41% Gross wt 1557.7 mg

Date and time of wt 5-15-98 1400 43% Gross wt 1558.0 mg

Date and time of wt — Gross wt — mg

Date and time of wt — Gross wt — mg

Average gross wt 1557.85 mg ✓

Tare wt 1523.2 mg ✓

Weight of particulate on filter(s) (m_f) 34.65 mg ✓

Weight of particulate in acetone rinse (m_a) 6.20 mg

Total weight of particulate (m_n) 40.85 mg ✓

<u>Note:</u> In no case should a blank residue >0.01 mg/g or 0.001% of the weight of acetone used be subtracted from the sample weight.

Remarks

Signature of analyst [signature]

Signature of reviewer [signature] 5/26/98

h:/shardata\source\bigbend\sampanal

SAMPLE ANALYTICAL DATA FORM

Plant F. J. Gannon Station Run number 35

Sample location Boiler No. 3

Relative humidity See Below

Sample Type	Sample Identifiable	Liquid Level Marked and/or Container Sealed
Acetone Rinse	✓	✓
Filters	✓	✓

Acetone rinse container number AIR 54

Acetone rinse volume (V_{aw}) 200 ml

Acetone blank residue weight (M_{ab}) 0.2 mg

Date and time of wt 5-18-98@ 12:07 48% RH Gross wt 108306.1 mg

Date and time of wt 5-19-98@ 07:41 42% RH Gross wt 108306.3 mg

Date and time of wt — Gross wt — mg

Date and time of wt — Gross wt — mg

Average gross wt 108306.2 mg ✓

Tare wt 108303.05 mg ✓

Less acetone blank wt (M_{ab}) 0.2 mg

Weight of particulate in acetone rinse (m_a) 2.95 mg ✓

Filter/Thimble Number 001337

Date and time of wt 5-15-98 0745 41% Gross wt 1521.9 mg

Date and time of wt 5-15-98 1400 43% Gross wt 1522.1 mg

Date and time of wt — Gross wt — mg

Date and time of wt — Gross wt — mg

Average gross wt 1522.0 mg ✓

Tare wt 1486.85 mg ✓

Weight of particulate on filter(s) (m_f) 35.15 mg ✓

Weight of particulate in acetone rinse (m_a) 2.95 mg

Total weight of particulate (m_n) 38.10 mg ✓

__Note:__ In no case should a blank residue >0.01 mg/g or 0.001% of the weight of acetone used be subtracted from the sample weight.

Remarks

Signature of analyst [signature]

Signature of reviewer [signature] 5/26/98

h:/shardata\source\bigbend\sampanal

B-5 FUEL BLEND SULFURIC ACID MIST LABORATORY DATA

Data for Stack Test Analyses (continued):

Sample 2s, NaOH, mg halide ion F / l = <0.05

Sample 3s, H2SO4, mg halide ion Cl / l = 110
Sample 3s, H2SO4, mg halide ion Br / l = 0.80
Sample 3s, H2SO4, mg halide ion F / l = 7.5

Sample 3s, NaOH, mg halide ion Cl / l = <0.1
Sample 3s, NaOH, mg halide ion Br / l = <0.4
Sample 3s, NaOH, mg halide ion F / l = <0.05

SO2 Analysis EPA Method 6

Normality of BaCl2 * 2H2O = 0.0102
Volume of Sample Aliquot, mls = 1
Avg. Value of Blank Titrations, mls = 0.05

Run 4s, Final Sample Volume, mls = 500
Run 4s Avg. of Titrations, mls = 12.20

Run 5s, Final Sample Volume, mls = 500
Run 5s Avg. of Titrations, mls = 12.36

Run 6s, Final Sample Volume, mls = 500
Run 6s Avg. of Titrations, mls = 11.91

Run 7s, Final Sample Volume, mls = 500
Run 7s Avg. of Titrations, mls = 13.21

SO3 Analysis EPA Method 8

Normality of BaCl2 * 2H2O = 0.0102
Final Sample Volume, mls = 500
Volume of Sample Aliquot, mls = 20
Avg. Value of Blank Titrations, mls = 0.05

Run 4s Avg. of Titrations, mls = 0.65
Run 5s Avg. of Titrations, mls = 0.48
Run 6s Avg. of Titrations, mls = 0.58
Run 7s Avg. of Titrations, mls = 0.58

B-6 FUEL BLEND HYDROGEN CHLORIDE LABORATORY DATA

From: Tampa Electric Company
Laboratory Services Department
5012 Causeway Blvd. Tampa, FL 33619
H.R.S. Certification # E54272
D.E.P. Comprehensive QA Plan #910140

June 9, 1998

To: David Smith, Air Programs
Bruce Rodriguez, Air Programs

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA42997 Location code: SPECL-GN
Project account code: J18
Location Description: Gannon Stack - Boiler Number 3
Sample collector: B. RODRIGUEZ
Sample collection date: 05/13/98 Time: 14:20
Lab submittal date: 05/22/98 Time: 15:46

Parameter	**Result**	**Units**	**MDL**
Stack Test Analyses	see below	---	---

Data for Stack Test Analyses:

Method 26 - Hydrogen Chloride Emissions

Volume of filtered and diluted sample, ml = 100

Equipment Blank, H2SO4, mg halide ion Cl / l = <0.6
Equipment Blank, H2SO4, mg halide ion Br / l = <0.1
Equipment Blank, H2SO4, mg halide ion F / l = <0.2

Equipment Blank, NaOH, mg halide ion Cl / l = <0.1
Equipment Blank, NaOH, mg halide ion Br / l = <0.4
Equipment Blank, NaOH, mg halide ion F / l = <0.05

Sample 1s, H2SO4, mg halide ion Cl / l = 103
Sample 1s, H2SO4, mg halide ion Br / l = 0.8
Sample 1s, H2SO4, mg halide ion F / l = 8.2

Sample 1s, NaOH, mg halide ion Cl / l = <0.1
Sample 1s, NaOH, mg halide ion Br / l = <0.4
Sample 1s, NaOH, mg halide ion F / l = <0.05

Sample 2s, H2SO4, mg halide ion Cl / l = 103
Sample 2s, H2SO4, mg halide ion Br / l = 0.81
Sample 2s, H2SO4, mg halide ion F / l = 7.7

Sample 2s, NaOH, mg halide ion Cl / l = <0.1
Sample 2s, NaOH, mg halide ion Br / l = <0.4

From: Tampa Electric Company
Laboratory Services Department
5012 Causeway Blvd. Tampa, FL 33619
H.R.S. Certification # E54272
D.E.P. Comprehensive QA Plan #910140

June 8, 1998

To: David Smith, Air Programs - CES

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA43280 Location code: AUDSPL
Location Description: EPA Halide Audit Samples
Sample collector: FROM EPC
Sample collection date: 08/13/97 Time: 10:39
Lab submittal date: 06/08/98 Time: 10:42

Parameter	**Result**	**Units**	**MDL**
Stack Test Analyses	see below	---	---

Data for Stack Test Analyses:

Method 26 - Hydrogen Chloride Emissions

All samples were analyzed as received.

Known compliance sample number J2709
True Value: 600 mg/l

Halide ion Cl, as received, mg/l = 587

Compliance sample number J2065

Halide ion Cl, as received, mg/l = 58.6

Compliance sample number J2429

Halide ion Cl, as received, mg/l = 587

TAMPA ELECTRIC COMPANY

Corporate Environmental Serivices

Laboratory Services

To: Stack Test Coordinator, CES

Laboratory Number: AA43279

Location Description: EPA SO2 Known Samples

Report Date: 06/08/98

Analysis Date: 06/04/98

Parameter	Result	Units
Normality of $BaCl_2 * 2H_2O$	0.0102	
SO_2, Volume of Sample Aliquot	20	milliliters
SO_2, Final Sample Volume	100	milliliters
SO_2, Avg. of Blank Titrations	0.08	milliliters
Avg $BaCl_2$ titr for replic sample	15.04	milliliters
Mass of SO_2	24.4	milligrams
Sulfur Dioxide-Stationary Source	1162	mg/DSCM
True Value for Reference Sample	**1150**	**mg/DSCM**

Bret Nicholas

Analyst

6/8/98

Date

Quality Assurance Specialist

Date

APPENDIX C

BOILER/PRECIPITATOR OPERATION DATA

C-1 BASELINE OPERATIONAL DATA

F. J. GANNON GENERATING STATION HEAT INPUT CALCULATIONS

F. J. GANNON STATION BOILER NO. 3 WDF TESTING (BASELINE) **May 20, 1998**	
April Gross Heat Rate =	10.797 X10^6 Btu/MWH
BOILER NO. 3 SOURCE TEST HEAT INPUT CALCULATIONS	
Final MWH (521904) - Initial MWH(521293) =	611 MWH
Time =	4.42 Hours
Average MW = 611MWH ÷ 4.42 H =	138.2 MW
10.797X 10^6 Btu/MWH X 611 MWH ÷4.42 H =	1492.5 X 10^6 MMBtu/H

SHARDATA\AIR&WAST\WPSOURCE\GANNON\BOILER3\WDF\HTIBL520

COMPLIANCE TEST DATA

F. J. GANNON STATION

BOILER NO. 3 - Paper Baseline TEST DATE 5/20/98

UNIT LOAD (MN) 140 MW

BASE LOADED (TIME)

TEST DATA

MEGAWATTS INTEGRATOR		INITIALS
BEGIN MWH 0754	BEGIN SAMPLING 521293	CRB
END MWH	END SAMPLING	

SOOTBLOWING

RUN	BEGIN TIME	END TIME	INITIALS
1 SB	0754	0904	CRB/JC
2SB	0940	1045	CRB/JC
3 SB	1114	1219	CRB/JC

FLYASH REINJECTION

RUN	REINJECTION (Y/N)	% REINJECTION	INITIALS
1 SB	yes	100%	CRB/RR
2 SB	yes	100%	CRB/RR
3 SB	yes	100%	CRB/RR

MCD\COMPFORM.WP

Start 4 SO_2 1234 521942

End 4 SO_2 1334 522081

COMPLIANCE TEST DATA
F. J. GANNON STATION

INTEGRATOR DATA

RUN NUMBER	START TIME	STOP TIME	INTEGRATOR START	INTEGRATOR STOP
1 SB	0754	0904	521293	521452
2 SB	0940	1045	521537	521687
3 SB	1114	1219	521752	521904

STACK

UNIT: 3

TEST: Unit 3 - Paper Baseline

DATE: 5/20/98

HOUR	MW	FUEL	EXCESS O2	FLUX	OPERATING CONDITIONS (SB, REINJ., IGNIT., SS, ETC.)
0800	140	100 % Coal	2.2%	None	Sootblowing, reinjection Steady State, No ignitors
0900	138		2.2%		Sootblowing, reinjection Steady State No ignitors
1000	139		2.2%		Sootblowing, reinjection Steady State, No ignitors
1100	139		2.2%		Sootblowing, reinjection Steady State, No ignitors
1200	140		2.2%		Sootblowing, reinjection Steady State, No ignitors.
1300	140		2.2%		Sootblowing, reinjection Steady State, No ignitors

STFORM

GANNON STACK TEST PRECIPITATOR LOG – UNIT 3

DATE : 5/20/98

TIME : 0806

RUN NO. : 15B

INITIALS: CRB

T/R	PRIMARY VOLTS	SECONDARY VOLTS (DC)	PRIMARY AMPS	SECONDARY AMPS (DC)
A1	270	36	55	350
A2	180	30	15	100
A3	300	44	60	375
A4	350	44	60	300
B1	360	50	75	425
B2	*	*	*	*
B3	370	48	70	450
B4	310	54	40	225
C1	280	52	45	225
C2	370	54	55	325
C3	270	52	40	200
C4	350	60	40	225
D1	220	36	25	150
D2	180	46	10	75
D3	300	48	45	225
D4	*	*	*	*

U3LOG

GANNON STACK TEST PRECIPITATOR LOG – UNIT 3

DATE : 5/20/98

TIME : 0943

RUN NO. : 25B

INITIALS: CRB

T/R	PRIMARY VOLTS	SECONDARY VOLTS (DC)	PRIMARY AMPS	SECONDARY AMPS (DC)
A1	270	38	50	325
A2	180	30	15	100
A3	300	44	60	375
A4	350	44	60	325
B1	360	50	50	425
B2	*	*	*	*
B3	370	48	65	425
B4	300	54	40	225
C1	280	54	45	225
C2	360	56	50	300
C3	270	52	35	200
C4	340	58	40	175
D1	220	36	25	125
D2	180	46	10	50
D3	300	48	45	225
D4	*	*	*	*

U3LOG

GANNON STACK TEST PRECIPITATOR LOG – UNIT 3

DATE : 5/20/98

TIME : 1117

RUN NO. : 3 SB

INITIALS: CPB

T/R	PRIMARY VOLTS	SECONDARY VOLTS (DC)	PRIMARY AMPS	SECONDARY AMPS (DC)
A1	270	38	50	325
A2	180	30	15	100
A3	300	44	55	350
A4	350	42	65	375
B1	360	50	70	425
B2	*	*	*	*
B3	360	48	65	450
B4	300	54	45	225
C1	280	54	45	225
C2	360	56	55	325
C3	260	52	35	175
C4	240-320	50-58	30-40	125-200
D1	220	36	25	150
D2	180	46	15	75
D3	290	48	45	225
D4	*	*	*	*

U3LOG

GANNON STACK TEST PRECIPITATOR LOG – UNIT 3

DATE : 5/20/98

TIME : 1301

RUN NO. : 4 SO_2 only

INITIALS: CRB

T/R	PRIMARY VOLTS	SECONDARY VOLTS (DC)	PRIMARY AMPS	SECONDARY AMPS (DC)
A1	270	38	50	325
A2	170	30	15	75
A3	300	44	55	350
A4	350	42	65	375
B1	360	50	70	400
B2	*	*	*	*
B3	360	48	65	450
B4	310	54	40	250
C1	280	54	45	225
C2	300-360	56	55	350
C3	250	52	35	150
C4	250-340	58	35-50	150
D1	220	36	25	150
D2	180	46	10	75
D3	300	48	45	225
D4	*	*	*	*

U3LOG

F. J. GANNON GENERATING STATION HEAT INPUT CALCULATIONS

F. J. GANNON STATION BOILER NO. 3 WDF TESTING (BASELINE) May 21, 1998	
April Gross Heat Rate =	10.797 X10^6 Btu/MWH
BOILER NO. 3 SOURCE TEST HEAT INPUT CALCULATIONS	
Final MWH (524927) - Initial MWH(524283) =	644 MWH
Time =	4.62 Hours
Average MW = 644MWH ÷ 4.62 H =	139.4 MW
10.797X 10^6 Btu/MWH X 644 MWH ÷4.62 H =	1505 X 10^6 MMBtu/H

COMPLIANCE TEST DATA

F. J. GANNON STATION

BOILER NO. 3 - Paper TEST DATE 5/21/98

UNIT LOAD (MN) 140

BASE LOADED (TIME)

TEST DATA

MEGAWATTS INTEGRATOR		INITIALS
BEGIN MWH 0750	BEGIN SAMPLING 524283	CRB
END MWH	END SAMPLING	

SOOTBLOWING

RUN	BEGIN TIME	END TIME	INITIALS
4 SB	0750	0902	CRB / RMB
5 SB	0945	1050	CRB / RMB
6 SB	1128	1233	CRB / RMB

FLYASH REINJECTION

RUN	REINJECTION (Y/N)	% REINJECTION	INITIALS
4 SB	yes	100 %	CRB / RR
5 SB	yes	100%	CRB / RR
6 SB	yes	100%	CRB / RR

MCD\COMPFORM.WP

End VOC 1240 524943

COMPLIANCE TEST DATA
F. J. GANNON STATION

INTEGRATOR DATA

RUN NUMBER	START TIME	STOP TIME	INTEGRATOR START	INTEGRATOR STOP
4 SB	0754	0902	524283	524436
5 SB	0945	1050	524537	524688
6 SB	1128	1233	524775	524927

STACK

UNIT: 3

TEST: Unit 3 - Paper baseline

DATE: 5/21/98

HOUR	MW	FUEL	EXCESS O2	FLUX	OPERATING CONDITIONS (SB, REINJ., IGNIT., SS, ETC.)
0800	140	100% Coal	2.0%	None	sootblowing, reinjection steady state no ignitors
0900	140		2.0 %		sootblowing, reinjection steady state, no ignitors
1000	140		2.0%		sootblowing, reinjection steady state no ignitors
1100	139		2.0%		sootblowing, reinjection steady state, no ignitors
1500	140		2.1%		sootblowing, reinjection steady state, no ignitors

STFORM

GANNON STACK TEST PRECIPITATOR LOG – UNIT 3

DATE : 5/21/98

TIME : 0809

RUN NO. : 45B

INITIALS: CRB

T/R	PRIMARY VOLTS	SECONDARY VOLTS (DC)	PRIMARY AMPS	SECONDARY AMPS (DC)
A1	270	36	55	350
A2	170	30	15	75
A3	300	44	60	375
A4	350	44	55	275
B1	360	50	70	425
B2	*	*	*	*
B3	370	48	65	425
B4	310	54	35	225
C1	290	54	45	250
C2	370	56	50	300
C3	270	52	35	200
C4	340	60	45	225
D1	230	36	25	150
D2	180	46	10	75
D3	290	50	45	225
D4	*	*	*	*

U3LOG

GANNON STACK TEST PRECIPITATOR LOG – UNIT 3

DATE : 5/21/98

TIME : 1002

RUN NO. : 5 SB

INITIALS: CRB

T/R	PRIMARY VOLTS	SECONDARY VOLTS (DC)	PRIMARY AMPS	SECONDARY AMPS (DC)
A1	270	38	55	350
A2	170	30	15	75
A3	300	44	60	375
A4	350	44	55	275
B1	360	50	70	425
B2	*	*	*	*
B3	370	50	65	425
B4	310	56	35	225
C1	300	46	45	200
C2	360	56	55	300
C3	270	52	35	175
C4	340	58	50	225
D1	220	36	25	150
D2	180	46	10	75
D3	290	50	40	225
D4	*	*	*	*

U3LOG

GANNON STACK TEST PRECIPITATOR LOG – UNIT 3

DATE : 5/21/98

TIME : 1130

RUN NO. : 6SB

INITIALS: CRB

T/R	PRIMARY VOLTS	SECONDARY VOLTS (DC)	PRIMARY AMPS	SECONDARY AMPS (DC)
A1	270	38	55	350
A2	170	30	15	75
A3	300	44	60	375
A4	350	44	60	325
B1	360	50	70	425
B2	*	*	*	*
B3	370	50	65	425
B4	310	56	40	225
C1	300	54	45	250
C2	370	56	55	275
C3	270	54	35	175
C4	360	58	40	250
D1	220	36	25	150
D2	180	46	10	75
D3	290	50	45	225
D4	*	*	*	*

U3LOG

C-2 FUEL BLEND OPERATIONAL DATA

F. J. GANNON GENERATING STATION HEAT INPUT CALCULATIONS

F. J. GANNON STATION BOILER NO. 3 WDF TEST BURN **May 13, 1998**	
April Gross Heat Rate =	10.797 $X10^6$ Btu/MWH
BOILER NO. 3 SOURCE TEST HEAT INPUT CALCULATIONS **WDF Particulate Test**	
Final MWH (502665) - Initial MWH(502053) =	612 MWH
End time (1129) - Start time (0700) Time =	4.48 Hours
Average MW = 612MWH ÷ 4.48 H =	136.6 MW
10.797X 10^6 Btu/MWH X 612 MWH ÷4.48 H =	1474.9 X 10^6 MMBtu/H

F. J. GANNON GENERATING STATION HEAT INPUT CALCULATIONS

F. J. GANNON STATION BOILER NO. 3 WDF TEST BURN **May 13, 1998**	
April Gross Heat Rate =	10.797 X10^6 Btu/MWH
BOILER NO. 3 SOURCE TEST HEAT INPUT CALCULATIONS **WDF Sulfuric Acid Mist Test**	
Final MWH (503750) - Initial MWH(502860) = + Final MWH (503903) - Initial MWH(503750) =	406 MWH 153 MWH = 559 MWH
End time (1554) - Start time (1254) Time = + End time (2051) - Start time (1945) Time =	3.00 Hours 1.10 Hours = 4.10 Hours
Average MW = 559MWH ÷ 4.10 H =	136.3 MW
10.797X 10^6 Btu/MWH X 559 MWH ÷4.10 H =	1471.6 X 10^6 MMBtu/H

COMPLIANCE TEST DATA
F. J. GANNON STATION

BOILER NO. 3 - paper TEST DATE 5/13/98

UNIT LOAD (MN) 137

BASE LOADED (TIME)

TEST DATA

MEGAWATTS INTEGRATOR		INITIALS
BEGIN MWH 0700	BEGIN SAMPLING 502053	CRB
END MWH 1129	END SAMPLING 502665	CRB

SOOTBLOWING

RUN	BEGIN TIME	END TIME	INITIALS
1 SB	0700	0805	CRB / J.M.E
2 SB	0845	0949	CRB / J.M.E.
3 SB	1024	1129	CRB / J.M.E.

FLYASH REINJECTION

RUN	REINJECTION (Y/N)	% REINJECTION	INITIALS
1 SB	yes	100%	CRB / SW
2 SB	yes	100%	CRB / SW
3 SB	yes	100%	CRB / SW

MCD\COMPFORM.WP

COMPLIANCE TEST DATA
F. J. GANNON STATION

INTEGRATOR DATA

RUN NUMBER	START TIME	STOP TIME	INTEGRATOR START	INTEGRATOR STOP
1 SB	0700	0805	502053	502200
2 SB	0845	0949	502291	502438
3 SB	1024	1129	502518	502665

STACK

COMPLIANCE TEST DATA

F. J. GANNON STATION

BOILER NO. 3 - paper TEST DATE 5/13/98

UNIT LOAD (MN) 137

BASE LOADED (TIME) ____

TEST DATA

MEGAWATTS INTEGRATOR		INITIALS
BEGIN MWH 1254	BEGIN SAMPLING 502860	CRB
END MWH 2051	END SAMPLING 503903	CRB

SOOTBLOWING

RUN	BEGIN TIME	END TIME	INITIALS
4 SB	1254	1402	CRB / J.M.C.
5 SB	1447	1554	CRB / J.M.C.
6 SB	1643	~~[illegible]~~ 1750	CRB / J.M.C.
7 SB	1945	2051	CRB / JCC

FLYASH REINJECTION

RUN	REINJECTION (Y/N)	% REINJECTION	INITIALS
4 SB	yes	100 %	CRB / DW
5 SB	yes	100 %	CRB / DW
6 SB	yes	100 %	CRB / DW
7 SB	yes	100 %	CRB / RLR

MCD\COMPFORM.WP

COMPLIANCE TEST DATA
F. J. GANNON STATION

INTEGRATOR DATA

RUN NUMBER	START TIME	STOP TIME	INTEGRATOR START	INTEGRATOR STOP
4. SB	1254	1402	502860	503013
5 SB	1447	1554	503115	503266
6 SB	1643	1750	503379	503524
7 SB	1945	2051	503750	503903

STACK

UNIT: 3

TEST: Paper pellet test

DATE: 5/13/98

HOUR	MW	FUEL	EXCESS O2	FLUX	OPERATING CONDITIONS (SB, REINJ., IGNIT., SS, ETC.)
0700	137	93.7% Coal	1.8%	None	Sootblowing, reinjection steady state, no ignitors
0800	138	6.3% paper	2.2%	None	Sootblowing, reinjection steady state, no ignitors
0900	138		2.1%	None	Sootblowing, reinjection steady state, no ignitors
1000	137		2.1%	None	Sootblowing, reinjection steady state, no ignitors
1100	137		2.1%	None	Sootblowing, reinjection steady state, no ignitors
1200	137		2.1%	None	Sootblowing, reinjection steady state, no ignitors
1300	136		2.1%	None	Sootblowing, reinjection steady state, no ignitors
1400	137		1.9%	None	Sootblowing, reinjection steady state, no ignitors
1500	137		2.1%	None	Sootblowing, reinjection steady state, no ignitors
1600	137		2.0%	None	Sootblowing, reinjection steady state, no ignitors
1700	136		2.1%	None	Sootblowing, reinjection steady state, no ignitors
1800	110-112 MW		2.6%	None	lost A cyclone and load
1900			2.6%	None	
1930	143		1.4%	None	Sootblowing, reinjection unstable, no ignitors
1945	141		1.8%	None	Sootblowing, reinjection ~~[illegible]~~ steady state, no ign.
2000	140		1.6%	None	Sootblowing, reinjection steady state, no ignitors

STFORM

GANNON STACK TEST PRECIPITATOR LOG – UNIT 3

DATE : 5/13/98

TIME : 0723

RUN NO. : 1SB

INITIALS: CRB

T/R	PRIMARY VOLTS	SECONDARY VOLTS (DC)	PRIMARY AMPS	SECONDARY AMPS (DC)
A1	270	38	50	325
A2	170	30	20	100
A3	300	44	55	350
A4	350	44	55	300
B1	350	50	70	400
B2	*	*	*	*
B3	360	50	100	350
B4	310	56	30	200
C1	290	56	40	200
C2	370	56	100	350
C3	250	54	35	150
C4	200-250	50-58	30	125
D1	200	36	15	100
D2	180	48	10	50
D3	290	50	45	225
D4	*	*	*	*

U3LOG

GANNON STACK TEST PRECIPITATOR LOG – UNIT 3

DATE : 5/13/98

TIME : 0926

RUN NO. : 25B

INITIALS: CRB

T/R	PRIMARY VOLTS	SECONDARY VOLTS (DC)	PRIMARY AMPS	SECONDARY AMPS (DC)
A1	270	38	50	325
A2	170	30	15	100
A3	300	44	55	350
A4	350	44	55	300
B1	350	50	65	375
B2	*	*	*	*
B3	360	50	55	375
B4	310	54	30	200
C1	280	54	45	175
C2	370	52	40	375
C3	260	54	35	175
C4	200-250	58	25	125
D1	200	36	15	100
D2	180	46	10	50
D3	290	50	40	225
D4	*	*	*	*

U3LOG

GANNON STACK TEST PRECIPITATOR LOG – UNIT 3

DATE : 5/13/98

TIME : 1107

RUN NO. : 3SB

INITIALS: CRB

T/R	PRIMARY VOLTS	SECONDARY VOLTS (DC)	PRIMARY AMPS	SECONDARY AMPS (DC)
A1	270	38	50	325
A2	170	30	15	75
A3	300	44	55	325
A4	340	44	55	300
B1	340	50	75	425
B2	*	*	*	*
B3	360	50	60	400
B4	300	56	35	200
C1	290	54	40	225
C2	370	54	60	375
C3	260	54	35	150
C4	190-240	50-58	30-50	100
D1	200	36	20	100
D2	180	48	10	50
D3	290	50	45	225
D4	*	*	*	*

U3LOG

GANNON STACK TEST PRECIPITATOR LOG – UNIT 3

DATE : 5/13/98

TIME : 1311

RUN NO. : 45B

INITIALS: CRB

T/R	PRIMARY VOLTS	SECONDARY VOLTS (DC)	PRIMARY AMPS	SECONDARY AMPS (DC)
A1	270	38	50	300
A2	170	30	15	75
A3	300	44	55	325
A4	340	44	60	325
B1	350	52	70	425
B2	*	*	*	*
B3	360	50	65	350
B4	290	54	40	225
C1	260	56	40	200
C2	370	52	70	375
C3	260	52	50	125
C4	190-250	48-56	30	100
D1	190	36	20	100
D2	180	48	10	50
D3	290	48	45	225
D4	*	*	*	*

U3LOG

GANNON STACK TEST PRECIPITATOR LOG – UNIT 3

DATE : 5/13/98

TIME : 1501

RUN NO. : 5 SB

INITIALS: CRB

T/R	PRIMARY VOLTS	SECONDARY VOLTS (DC)	PRIMARY AMPS	SECONDARY AMPS (DC)
A1	270	38	50	300
A2	170	30	15	75
A3	300	44	55	325
A4	340	42	60	300
B1	350	50	75	425
B2	*	*	*	*
B3	360	48	70	425
B4	300	54	30	200
C1	300	54	35	225
C2	360	52	80	400
C3	260	52	40	200
C4	200-300	56	25	125
D1	200	36	20	100
D2	180	46	10	50
D3	290	48	45	225
D4	*	*	*	*

GANNON STACK TEST PRECIPITATOR LOG – UNIT 3

DATE : 5/13/98

TIME : 1652

RUN NO. : 6SB

INITIALS: CRB

T/R	PRIMARY VOLTS	SECONDARY VOLTS (DC)	PRIMARY AMPS	SECONDARY AMPS (DC)
A1	260	38	50	300
A2	170	30	15	75
A3	300	44	55	325
A4	340	42	60	375
B1	350	50	45	450
B2	*	*	*	*
B3	360	48	65	375
B4	290	52	35	200
C1	300	54	50	200
C2	360	52	75	425
C3	240	52	35	175
C4	200 - 270	42-58	30 - 40	125 - 175
D1	200	36	10	100
D2	180	46	10	50
D3	290	48	45	250
D4	*	*	*	*

U3LOG

GANNON STACK TEST PRECIPITATOR LOG – UNIT 3

DATE : 5/13/98

TIME : 1950

RUN NO. : 7SB

INITIALS: C.R.B.

T/R	PRIMARY VOLTS	SECONDARY VOLTS (DC)	PRIMARY AMPS	SECONDARY AMPS (DC)
A1	260	38	50	300
A2	170	30	10	75
A3	300	44	55	300
A4	340	42	65	400
B1	350	50	70	400
B2	*	*	*	*
B3	350	48	60	425
B4	310	52	35	225
C1	280	54	40	250
C2	360	50	65	425
C3	250	52	10	175
C4	250-320	46-58	30-40	75-150
D1	190	36	15	100
D2	180	48	10	50
D3	300	48	45	250
D4	*	*	*	*

U3LOG

GANNON 3 WDF TEST BURN

WDF BUNKERING	
BUNKERING DATE	TONS OF WDF
03/04/98	22
03/05/98	123
03/17/98	104
03/18/98	82
04/21/98	140
04/22/98	113
05/05/98	18
05/06/98	25
05/07/98	49
05/08/98	25
05/11/98	91
05/12/98	93
05/26/98	7
05/27/98	40
TOTAL:	**932**

Note: WDF was bunkered a total of 14 days.
The test period started on 3/4/98 and ended on 05/27/98.

WDFBUN

R ①

5/14/98

Reclaim to Bunker

GANNON PLANT BUNKER U3

Updated by: ABEBL

Updated date: 05/12/1998 21:53

Stop Time: 05/12/98 20:15

Start Time: 05/12/98 19:20

Bunker Scales	Stop	Start	Total
H1-SCALE			479
H2-SCALE			399
	Total Bunkered:		878

Reclaim Scale	Bunker Scale	Reclaim Location	Fuel	Entered Amount	Adjusted Amount	Calculated Percent
F4 SCALE - NOR	H1-SCALE	GA NORTH YA	PRB BLEND	825.	-825.	100.00%
PORTABLE REC	H1-SCALE	GA SOUTH YA	PAPER PELLETS	53.	-53.	100.00%

Reclaim scales updated by: ABEBL

updated date: 05/12/1998 21:53

$$\% \text{ blend} = \frac{53 \text{ tons of paper pellets}}{878 \text{ tons of coal \& pellets}} \times 100 = 6.0\%$$

Report # 58 - Reclaim Detail Print

Report Run Date: 5/14/98 13:49

Sam DeCarbelli 5/14/98

(2)

Reclaim to Bunker

GANNON PLANT BUNKER U3

Updated by: ABEBL
Updated date: 05/12/1998 21:55

Stop Time: 05/12/98 20:55
Start Time: 05/12/98 20:20

Bunker Scales	Stop	Start	Total
H1-SCALE			310
H2-SCALE			287
	Total Bunkered:		597

Reclaim Scale	Bunker Scale	Reclaim Location	Fuel	Entered Amount	Adjusted Amount	Calculated Percent
F4 SCALE - NOR	H1-SCALE	GA NORTH YA	PRB BLEND	557.	-557.	100.00%
PORTABLE REC	H1-SCALE	GA SOUTH YA	PAPER PELLETS	40.	-40.	100.00%

Reclaim scales updated by: ABEBL
updated date: 05/12/1998 21:55

$$\% \text{ blend} = \frac{40 \text{ tons of paper pellets}}{597 \text{ tons of coal and pellets}} \times 100 = 6.7\%$$

Reclaim Browse

Start Time	Stop Time	Bunker	Total	
05/14/98 05:38	05/14/98 05:50	BUNKER U6	166	
05/14/98 05:25	05/14/98 05:35	BUNKER U5	186	
05/14/98 03:28	05/14/98 04:15	BUNKER U6	1002	
05/14/98 03:00	05/14/98 03:24	BUNKER U5	386	
05/14/98 01:42	05/14/98 02:00	BUNKER U5	356	
05/14/98 01:22	05/14/98 01:35	BUNKER U2	205	
05/14/98 01:12	05/14/98 01:20	BUNKER U1	123	
05/14/98 00:05	05/14/98 01:10	BUNKER U3	1224	
05/13/98 21:19	05/13/98 22:40	BUNKER U6	1696	
05/13/98 21:07	05/13/98 21:17	BUNKER U5	129	
05/13/98 19:58	05/13/98 20:53	BUNKER U2	1014	
05/13/98 19:03	05/13/98 19:54	BUNKER U1	985	
05/13/98 17:11	05/13/98 17:46	BUNKER U4	655	
05/13/98 16:16	05/13/98 17:09	BUNKER U5	968	
05/13/98 05:45	05/13/98 05:57	BUNKER U5	199	
05/13/98 04:03	05/13/98 04:27	BUNKER U5	520	
05/13/98 03:45	05/13/98 04:00	BUNKER U4	265	No bunkering during test
05/13/98 01:30	05/13/98 02:30	BUNKER U1	1174	
05/13/98 00:45	05/13/98 01:25	BUNKER U2	790	
05/13/98 00:01	05/13/98 00:40	BUNKER U4	976	
05/12/98 21:59	05/12/98 22:25	BUNKER U6	797	
05/12/98 21:33	05/12/98 21:55	BUNKER U5	424	
05/12/98 20:57	05/12/98 21:22	BUNKER U2	413	
05/12/98 20:20	05/12/98 20:55	BUNKER U3	597	Run 2
05/12/98 19:20	05/12/98 20:15	BUNKER U3	878	Run 1
05/12/98 17:40	05/12/98 18:22	BUNKER U4	682	
05/12/98 17:00	05/12/98 17:38	BUNKER U5	701	
05/12/98 15:45	05/12/98 16:59	BUNKER U6	1459	
05/12/98 13:00	05/12/98 13:13	BUNKER U6	165	

APPENDIX D

CONTINUOUS EMISSION MONITORING SYSTEM DATA

D-1 BASELINE CEMS STACK TESTS LOGS

===

Gannon Station
Unit 3
Tampa

===

Today's Date: 07/02/98 Reporting Period
Time: 06:46:44 Day: 05/20/98

DAILY EPA CEM SUMMARY

Time	CO2	SO2	SO2	SO2	NOX	NOX	FLOW	Ht Inp
	%	ppm	lb/mmBtu	lb/hr	ppm	lb/mmBtu	kscfh	mmBtu
0100	9.2	475.3	1.540	1149.7	388.4	0.907	14571	744
0200	8.9	478.7	1.610	1183.1	390.9	0.944	14888	736
0300	8.9	475.4	1.600	1171.8	366.9	0.886	14849	734
0400	9.0	481.3	1.600	1176.3	370.5	0.885	14723	736
0500	9.1	491.0	1.610	1199.0	374.1	0.884	14710	743
0600	10.6	653.2	1.840	2130.3	437.4	0.887	19646	1156
0700	12.2	823.8	2.020	3160.5	559.7	0.986	23111	1566
0800	12.4	768.3	1.850	2873.5	551.7	0.956	22530	1552
0900	12.3	744.1	1.810	2785.4	551.4	0.963	22550	1540
1000	12.3	719.2	1.750	2696.1	529.7	0.926	22583	1543
1100	12.4	736.9	1.780	2773.0	535.6	0.928	22669	1561
1200	12.4	750.4	1.810	2818.0	516.1	0.895	22623	1558
1300	12.4	721.4	1.740	2739.9	530.4	0.919	22880	1576
1400	12.8	719.8	1.680	2880.5	588.7	0.988	24108	1714
1500	12.7	702.3	1.650	2774.3	603.4	1.021	23797	1679
1600	12.7	702.8	1.650	2807.9	577.2	0.977	24068	1698
1700	12.8	713.7	1.670	2845.2	572.2	0.961	24015	1707
1800	12.6	707.2	1.680	2809.2	566.7	0.967	23929	1675
1900	12.7	724.7	1.710	2869.2	581.1	0.983	23850	1682

2000	12.8	746.9	1.740	2914.5	568.0	0.954	23507	1671
2100	12.3	694.4	1.690	2685.3	535.0	0.935	23296	1591
2200	12.9	731.6	1.690	2828.4	590.0	0.983	23289	1669
2300	11.5	627.3	1.630	2117.3	517.0	0.966	20333	1299
2400	8.7	462.8	1.590	1094.1	367.1	0.907	14242	688
AVRGE	11.5	660.5	1.706	2353.4	507.1	0.942	20865	1368

Daily SO_2 28.2 Tons
Daily CO_2 3367.9 Tons

Legend
C - Out of Control
F - Fans Off
D - Out of Service
I - Insufficient Data
M - Maintenance Fault
A - Calibration Error
X - Calibration Expired

===

Gannon Station
Unit 3
Tampa

===

Today's Date: 07/02/98 Reporting Period
Time: 06:49:30 Day: 05/21/98

DAILY EPA CEM SUMMARY

Time	CO2	SO2	SO2	SO2	NOX	NOX	FLOW	Ht Inp
	%	ppm	lb/mmBtu	lb/hr	ppm	lb/mmBtu	kscfh	mmBtu
0100	8.4	453.0	1.610	1129.0	337.5	0.864	15014	700
0200	8.7	483.6	1.660	1174.5	350.7	0.866	14631	707
0300	8.9	471.4	1.580	1152.1	362.1	0.874	14723	727
0400	8.8	462.6	1.570	1150.9	356.9	0.872	14987	732
0500	11.5	683.0	1.770	2190.1	464.9	0.869	19316	1234
0600	12.4	776.7	1.870	2896.4	530.2	0.919	22464	1547
0700	12.4	853.1	2.060	3203.7	524.7	0.909	22623	1558
0800	12.5	801.9	1.920	3013.2	534.3	0.919	22636	1571
0900	12.3	762.8	1.850	2865.4	522.6	0.913	22629	1546
1000	12.3	764.2	1.860	2879.9	522.0	0.912	22702	1551
1100	12.5	751.4	1.800	2820.1	526.1	0.905	22610	1570
1200	12.4	708.3	1.710	2658.4	507.2	0.879	22610	1557
1300	12.5	678.2	1.620	2633.1	541.1	0.930	23388	1624
1400	12.7	675.3	1.590	2742.4	587.4	0.994	24464	1726
1500	12.8	660.5	1.540	2635.3	578.4	0.971	24035	1709
1600	12.8	659.1	1.540	2652.8	585.6	0.983	24246	1724
1700	12.8	655.2	1.530	2610.5	594.7	0.999	24002	1706
1800	12.6	658.0	1.560	2584.2	562.0	0.959	23659	1656
1900	12.5	680.0	1.630	2651.2	548.3	0.943	23487	1631

2000	12.7	651.2	1.530	2608.9	566.6	0.959	24134	1702
2100	12.8	625.3	1.460	2510.6	556.8	0.935	24187	1719
2200	12.8	621.0	1.450	2481.1	557.9	0.937	24068	1711
2300	12.8	603.4	1.410	2378.4	530.7	0.891	23745	1688
2400	12.6	607.1	1.440	2362.4	520.6	0.888	23441	1640
AVRGE	11.9	656.1	1.648	2416.0	511.2	0.920	21825	1469

Daily SO_2 29.0 Tons
Daily CO_2 3616.5 Tons

Legend
C - Out of Control
F - Fans Off
D - Out of Service
I - Insufficient Data
M - Maintenance Fault
A - Calibration Error
X - Calibration Expired

CEMS RECORDS
GANNON UNIT 3

	Date	Time	Load	NOx	Opacity	SO2
1	05/20/98	070000	137.565	0.988	3.805	2.016
2	05/20/98	080000	137.019	0.955	3.523	1.849
3	05/20/98	090000	136.677	0.959	3.481	1.802
4	05/20/98	100000	136.738	0.928	3.363	1.751
5	05/20/98	110000	137.926	0.928	3.594	1.772
6	05/20/98	120000	137.905	0.897	3.668	1.806
7	05/20/98	130000	139.459	0.918	3.671	1.741
8	05/20/98	140000	150.066	0.987	3.709	1.680
9	/ /					
10	/ /	AVE	139.169	0.945	3.602	1.802

CEMS RECORDS
GANNON UNIT 3

	Date	Time	Load	NOx	Opacity	SO2
1	05/21/98	070000	138.622	0.911	3.090	2.054
2	05/21/98	080000	138.027	0.917	2.969	1.913
3	05/21/98	090000	137.651	0.909	2.959	1.851
4	05/21/98	100000	137.402	0.909	2.946	1.848
5	05/21/98	110000	137.319	0.903	2.896	1.795
6	05/21/98	120000	136.870	0.882	2.940	1.713
7	05/21/98	130000	141.939	0.930	3.133	1.627
8	05/21/98	140000	149.684	0.991	3.464	1.584
9	/ /					
10	/ /	AVE	139.689	0.919	3.050	1.798

BEST AVAILABLE COPY

Record#	DATE	TIME	GN1CO231	GN1GEN32	GN1NOX33	GN1NOX34	GN1OPA35	GN1SO236
1	05/20/98	100000	12.351	136.438	528.967	0.920	3.357	699.228
2	05/20/98	100100	12.302	136.426	529.523	0.925	3.647	686.654
3	05/20/98	100200	12.283	136.533	529.769	0.927	3.249	681.937
4	05/20/98	100300	12.248	137.136	529.244	0.929	3.400	678.333
5	05/20/98	100400	12.213	137.416	527.812	0.929	3.333	685.651
6	05/20/98	100500	12.227	137.404	527.476	0.927	3.658	716.468
7	05/20/98	100600	12.238	137.440	527.148	0.926	3.423	719.401
8	05/20/98	100700	12.244	137.412	529.312	0.929	3.617	706.118
9	05/20/98	100800	12.240	137.448	532.455	0.935	3.483	705.762
10	05/20/98	100900	12.219	137.100	526.830	0.927	3.400	742.390
11	05/20/98	101000	12.256	136.869	526.993	0.924	3.667	745.283
12	05/20/98	101100	12.309	137.059	536.137	0.936	3.268	712.429
13	05/20/98	101200	12.363	137.370	540.095	0.939	3.258	707.307
14	05/20/98	101300	12.434	137.393	537.694	0.929	3.191	723.895
15	05/20/98	101400	12.424	137.366	539.374	0.933	3.199	720.445
16	05/20/98	101500	12.435	137.706	541.734	0.936	3.488	709.511
17	05/20/98	101600	12.387	138.366	540.133	0.937	3.321	701.373
18	05/20/98	101700	12.372	138.661	537.526	0.934	3.334	697.836
19	05/20/98	101800	12.363	138.676	535.828	0.931	3.281	697.885
20	05/20/98	101900	12.418	137.851	538.356	0.932	3.534	704.050
21	05/20/98	102000	12.429	137.721	540.727	0.935	3.710	702.255
22	05/20/98	102100	12.406	137.496	538.889	0.934	3.481	719.139
23	05/20/98	102200	12.363	137.125	532.267	0.925	3.667	834.851
24	05/20/98	102300	12.410	137.525	527.524	0.914	3.717	834.851
25	05/20/98	102400	12.407	137.664	529.297	0.917	4.202	831.646
26	05/20/98	102500	12.365	138.273	532.194	0.925	4.174	790.991
27	05/20/98	102600	12.336	138.958	536.280	0.934	3.649	777.229
28	05/20/98	102700	12.348	139.289	539.176	0.938	3.604	771.447
29	05/20/98	102800	12.460	138.611	541.825	0.935	3.477	794.199
30	05/20/98	102900	12.553	138.266	539.748	0.924	3.953	802.318
31	05/20/98	103000	12.518	138.216	543.221	0.933	3.479	762.174
32	05/20/98	103100	12.481	138.078	548.931	0.945	3.432	733.042
33	05/20/98	103200	12.448	137.637	546.031	0.943	3.340	715.730
34	05/20/98	103300	12.418	137.269	541.535	0.937	3.370	713.076
35	05/20/98	103400	12.403	137.947	539.064	0.934	3.543	715.469
36	05/20/98	103500	12.441	138.602	543.544	0.939	3.683	717.385
37	05/20/98	103600	12.430	138.795	544.169	0.941	3.565	721.389
38	05/20/98	103700	12.419	138.572	541.334	0.937	3.468	742.330
39	05/20/98	103800	12.417	138.093	541.685	0.938	3.887	734.896
40	05/20/98	103900	12.420	138.150	543.960	0.941	4.074	714.089
41	05/20/98	104000	12.462	138.147	539.198	0.930	3.390	749.444
42	05/20/98	104100	12.521	137.731	536.464	0.921	3.486	769.860
43	05/20/98	104200	12.500	137.649	540.837	0.930	3.477	719.154
44	05/20/98	104300	12.478	138.212	542.675	0.935	3.542	703.043
45	05/20/98	104400	12.480	138.350	537.539	0.926	3.650	728.758
46	05/20/98	104500	12.487	138.538	533.834	0.919	3.353	729.548
47	05/20/98	104600	12.425	138.698	535.390	0.926	3.350	707.725
48	05/20/98	104700	12.401	138.776	535.787	0.929	3.369	699.093
49	05/20/98	104800	12.411	138.307	535.142	0.927	3.955	694.043
50	05/20/98	104900	12.404	138.103	535.805	0.928	3.421	691.965
51	05/20/98	105000	12.438	138.215	536.846	0.928	3.587	693.901
52	05/20/98	105100	12.466	137.667	539.822	0.931	3.683	697.140
53	05/20/98	105200	12.485	137.603	537.978	0.926	3.810	728.170
54	05/20/98	105300	12.465	137.530	532.471	0.918	4.262	762.382
55	05/20/98	105400	12.460	137.743	526.042	0.907	4.039	795.319
56	05/20/98	105500	12.492	138.414	526.207	0.905	4.011	815.081
57	05/20/98	105600	12.494	138.804	525.094	0.903	3.984	799.615
58	05/20/98	105700	12.469	138.331	527.025	0.908	3.853	788.603

BEST AVAILABLE COPY

59	05/20/98	105800	12.497	138.394	531.272	0.914	3.879	779.676
60	05/20/98	105900	12.509	138.336	529.106	0.909	3.641	781.606
61	05/20/98	110000	12.588	138.065	528.125	0.902	3.643	784.692
62	/ /							
63	/ /	AVE	12.405	137.901	535.516	0.928	3.590	735.890

GANNON 3 CWDF BASELINE RUN 2 5-20-98

BEST AVAILABLE COPY

Record#	DATE	TIME	GN1CO231	GN1GEN32	GN1NOX33	GN1NOX34	GN1OPA35	GN1SO236
1	05/20/98	111700	12.504	137.838	520.523	0.895	3.629	717.340
2	05/20/98	111800	12.438	137.878	521.328	0.901	3.427	717.340
3	05/20/98	111900	12.420	138.125	521.352	0.902	3.364	715.529
4	05/20/98	112000	12.438	138.324	523.577	0.905	3.385	709.090
5	05/20/98	112100	12.448	138.216	525.177	0.907	3.603	709.234
6	05/20/98	112200	12.454	138.007	524.541	0.905	3.843	704.769
7	05/20/98	112300	12.463	137.881	523.629	0.903	3.681	714.220
8	05/20/98	112400	12.437	137.923	516.941	0.893	3.704	761.854
9	05/20/98	112500	12.401	138.043	514.168	0.891	3.721	800.501
10	05/20/98	112600	12.417	137.968	513.580	0.889	3.994	811.083
11	05/20/98	112700	12.434	138.005	515.961	0.892	3.925	786.410
12	05/20/98	112800	12.449	137.922	518.658	0.895	3.672	774.341
13	05/20/98	112900	12.440	137.883	519.287	0.897	3.589	774.341
14	05/20/98	113000	12.430	137.676	516.652	0.893	3.586	805.223
15	05/20/98	113100	12.462	137.799	510.163	0.880	4.087	863.224
16	05/20/98	113200	12.447	137.801	511.240	0.883	3.727	863.051
17	05/20/98	113300	12.426	137.912	512.595	0.887	3.499	815.096
18	05/20/98	113400	12.450	138.017	519.706	0.897	3.398	757.048
19	05/20/98	113500	12.443	137.891	523.549	0.904	3.390	731.201
20	05/20/98	113600	12.452	137.979	520.523	0.898	3.818	723.556
21	05/20/98	113700	12.467	137.909	521.729	0.899	3.534	711.576
22	05/20/98	113800	12.479	137.881	522.565	0.900	3.530	708.746
23	05/20/98	113900	12.495	137.929	523.975	0.901	3.426	706.299
24	05/20/98	114000	12.477	137.858	526.568	0.907	3.739	700.857
25	05/20/98	114100	12.470	137.433	526.947	0.908	3.967	698.230
26	05/20/98	114200	12.494	137.127	525.483	0.904	3.521	719.066
27	05/20/98	114300	12.455	137.602	521.145	0.899	3.420	760.819
28	05/20/98	114400	12.451	137.736	522.369	0.902	3.479	726.331
29	05/20/98	114500	12.425	138.053	523.878	0.906	3.642	704.522
30	05/20/98	114600	12.418	138.014	522.818	0.905	3.467	716.943
31	05/20/98	114700	7.801	137.836	258.518	0.712	3.283	312.721
32	05/20/98	114800	6.738	137.769	316.247	1.009	3.396	497.338
33	05/20/98	114900	10.248	137.669	442.618	0.928	3.343	627.867
34	05/20/98	115000	11.157	137.614	465.401	0.897	3.791	643.031
35	05/20/98	115100	11.449	137.817	474.203	0.890	3.383	650.055
36	05/20/98	115200	11.561	137.740	477.467	0.888	3.411	654.092
37	05/20/98	115300	11.683	137.183	484.329	0.891	3.483	664.634
38	05/20/98	115400	11.826	136.965	490.877	0.892	3.614	691.060
39	05/20/98	115500	11.866	136.972	487.527	0.883	4.338	744.655
40	05/20/98	115600	11.806	137.183	482.884	0.879	4.076	793.157
41	05/20/98	115700	11.950	137.589	488.798	0.879	3.898	830.590
42	05/20/98	115800	12.017	137.790	488.204	0.873	3.799	815.724
43	05/20/98	115900	12.015	137.623	494.239	0.884	3.808	764.863
44	05/20/98	120000	12.055	137.576	503.154	0.897	3.885	740.464
45	05/20/98	120100	12.070	137.935	506.081	0.901	3.612	814.701
46	05/20/98	120200	12.121	138.033	503.069	0.892	3.511	814.701
47	05/20/98	120300	12.190	137.868	502.346	0.886	3.482	793.328
48	05/20/98	120400	12.211	137.550	507.336	0.893	3.554	730.017
49	05/20/98	120500	12.168	137.157	509.968	0.901	3.610	699.934
50	05/20/98	120600	12.087	136.843	506.336	0.900	3.467	683.123
51	05/20/98	120700	12.095	137.259	504.158	0.896	3.377	683.370
52	05/20/98	120800	12.120	137.943	504.411	0.894	3.404	691.909
53	05/20/98	120900	12.189	138.031	509.106	0.898	3.623	697.312
54	05/20/98	121000	12.222	137.922	510.504	0.898	3.477	703.308
55	05/20/98	121100	12.247	137.810	516.437	0.906	3.673	698.703
56	05/20/98	121200	12.267	137.476	522.101	0.915	3.871	708.224
57	05/20/98	121300	12.293	137.688	522.006	0.913	3.573	708.224
58	05/20/98	121400	12.328	137.844	523.847	0.913	3.951	758.251

05/20/98	121500	12.375	138.117	528.094	0.917	3.513	736.351
05/20/98	121600	12.405	138.959	531.593	0.921	3.413	693.910
05/20/98	121700	12.399	138.632	535.425	0.928	3.319	701.366
/ /							
/ /	AVE	12.056	137.787	503.408	0.897	3.618	723.850

63 WDF BASELINE RVC 3 5-20-98

BEST AVAILABLE COPY

Record#	DATE	TIME	GN1CO231	GN1GEN32	GN1NOX33	GN1NOX34	GN1OPA35	GN1SO236
1	05/20/98	123500	12.425	137.644	512.417	0.886	3.583	767.395
2	05/20/98	123600	12.357	137.351	516.479	0.898	3.589	724.357
3	05/20/98	123700	12.372	137.554	520.496	0.904	3.489	711.246
4	05/20/98	123800	12.393	138.008	519.367	0.901	4.064	706.228
5	05/20/98	123900	12.417	138.479	525.949	0.910	3.570	706.185
6	05/20/98	124000	12.446	138.766	534.165	0.922	3.688	708.190
7	05/20/98	124100	12.466	138.704	541.523	0.934	3.789	707.611
8	05/20/98	124200	12.495	138.398	543.211	0.934	4.111	704.205
9	05/20/98	124300	12.499	137.921	540.199	0.929	4.341	700.554
10	05/20/98	124400	12.493	137.983	537.495	0.925	3.922	712.954
11	05/20/98	124500	12.450	138.154	530.587	0.916	3.565	768.090
12	05/20/98	124600	12.459	138.149	530.406	0.915	3.557	757.324
13	05/20/98	124700	12.453	138.137	536.301	0.926	3.714	707.221
14	05/20/98	124800	12.468	141.798	541.300	0.933	3.658	689.908
15	05/20/98	124900	12.457	144.916	543.244	0.937	4.166	683.311
16	05/20/98	125000	12.490	144.984	544.055	0.936	4.289	679.706
17	05/20/98	125100	12.519	143.585	540.934	0.929	4.009	686.352
18	05/20/98	125200	12.535	144.916	533.152	0.914	3.997	702.431
19	05/20/98	125300	12.557	146.399	535.496	0.917	3.582	714.151
20	05/20/98	125400	12.582	146.590	547.025	0.934	3.429	714.454
21	05/20/98	125500	12.675	145.398	565.377	0.959	3.346	716.538
22	05/20/98	125600	12.607	143.647	567.125	0.967	3.418	688.002
23	05/20/98	125700	12.537	142.865	560.952	0.962	3.919	688.002
24	05/20/98	125800	12.516	142.722	558.047	0.958	3.424	690.288
25	05/20/98	125900	12.531	144.601	560.239	0.961	3.538	692.603
26	05/20/98	130000	12.579	146.342	550.670	0.941	3.649	697.509
27	05/20/98	130100	12.617	146.858	548.946	0.935	3.819	700.620
28	05/20/98	130200	12.674	148.972	554.863	0.941	4.107	708.187
29	05/20/98	130300	12.725	149.610	552.483	0.933	3.757	710.283
30	05/20/98	130400	12.700	150.056	551.971	0.934	3.783	708.545
31	05/20/98	130500	12.742	150.601	556.606	0.939	3.700	713.522
32	05/20/98	130600	12.727	151.204	558.865	0.944	3.735	710.464
33	05/20/98	130700	12.733	151.489	558.719	0.943	4.027	714.461
34	05/20/98	130800	12.800	151.529	564.333	0.948	3.640	714.461
35	05/20/98	130900	12.809	151.319	568.848	0.954	3.653	713.433
36	05/20/98	131000	12.796	150.973	569.021	0.956	3.622	708.075
37	05/20/98	131100	12.773	150.707	571.110	0.961	3.929	706.302
38	05/20/98	131200	12.722	150.601	568.010	0.960	3.666	703.765
39	05/20/98	131300	12.705	150.482	569.305	0.963	3.579	704.050
40	05/20/98	131400	12.691	150.285	566.986	0.960	3.552	706.294
41	05/20/98	131500	12.695	150.187	567.298	0.960	3.600	706.141
42	05/20/98	131600	12.691	150.231	566.477	0.959	4.069	703.582
43	05/20/98	131700	12.703	150.424	567.965	0.961	3.652	703.910
44	05/20/98	131800	12.757	150.622	572.978	0.965	3.627	711.908
45	05/20/98	131900	12.794	150.471	576.488	0.968	3.635	711.908
46	05/20/98	132000	12.772	150.478	578.140	0.973	3.733	718.215
47	05/20/98	132100	12.773	150.472	578.885	0.974	4.269	720.831
48	05/20/98	132200	12.718	150.413	577.213	0.975	3.655	708.417
49	05/20/98	132300	12.730	150.383	577.107	0.974	3.678	713.476
50	05/20/98	132400	12.759	150.373	576.065	0.970	3.538	714.717
51	05/20/98	132500	12.782	150.200	578.591	0.973	3.672	720.209
52	05/20/98	132600	12.747	149.984	574.734	0.969	3.710	713.686
53	05/20/98	132700	12.753	150.787	577.003	0.972	3.635	720.117
54	05/20/98	132800	12.829	151.659	583.131	0.977	3.675	720.117
55	05/20/98	132900	12.852	151.886	584.553	0.978	3.585	719.051
56	05/20/98	133000	12.856	152.010	584.863	0.978	3.825	719.051
57	05/20/98	133100	12.925	152.175	590.547	0.982	3.684	725.032
58	05/20/98	133200	12.930	152.191	591.204	0.983	3.707	725.409

59	05 20/98	133300	12.909	152.313	589.721	0.982	3.608	717.220
60	05 20/98	133400	12.896	152.574	590.563	0.984	3.637	718.016
61	05/20/98	133500	12.905	153.317	591.501	0.985	3.979	722.660
62	/ /							
63	/ /	AVE	12.652	146.752	558.546	0.949	3.740	711.163

R3 WDF BASELINE RUN 4 5-20-98

BEST AVAILABLE COPY

Record#	DATE	TIME	GN1CO231	GN1GEN32	GN1NOX33	GN1NOX34	GN1OPA35	GN1SO236
1	05/21/98	075600	12.546	138.422	527.928	0.904	3.065	773.255
2	05/21/98	075700	12.578	138.169	527.634	0.902	2.882	780.240
3	05/21/98	075800	12.606	137.904	531.686	0.907	2.840	766.180
4	05/21/98	075900	12.579	137.176	530.619	0.907	2.991	757.234
5	05/21/98	080000	12.579	136.835	525.751	0.898	3.026	785.152
6	05/21/98	080100	12.650	136.908	515.837	0.876	3.323	881.201
7	05/21/98	080200	12.598	136.842	512.312	0.874	3.022	899.474
8	05/21/98	080300	12.523	136.919	514.258	0.883	2.876	891.226
9	05/21/98	080400	12.488	137.627	516.376	0.889	2.861	848.712
10	05/21/98	080500	12.494	138.059	519.448	0.894	3.299	796.522
11	05/21/98	080600	12.515	137.989	521.425	0.895	3.099	778.095
12	05/21/98	080700	12.570	137.696	526.813	0.901	2.959	853.250
13	05/21/98	080800	12.577	137.290	520.573	0.890	2.962	853.250
14	05/21/98	080900	12.593	136.841	518.137	0.884	2.852	856.874
15	05/21/98	081000	12.563	137.021	521.496	0.892	3.053	819.592
16	05/21/98	081100	12.524	137.027	525.156	0.901	2.823	785.441
17	05/21/98	081200	12.514	137.275	527.683	0.906	2.783	776.920
18	05/21/98	081300	12.517	137.791	529.754	0.910	2.854	767.491
19	05/21/98	081400	12.525	138.213	531.765	0.912	2.935	757.659
20	05/21/98	081500	12.503	138.035	532.773	0.916	3.076	758.476
21	05/21/98	081600	12.522	137.356	527.901	0.906	2.909	773.918
22	05/21/98	081700	12.552	137.153	527.077	0.902	2.899	780.831
23	05/21/98	081800	12.529	137.003	524.512	0.900	2.878	762.049
24	05/21/98	081900	12.515	137.016	523.761	0.899	2.929	762.049
25	05/21/98	082000	12.476	136.955	524.529	0.904	3.040	749.687
26	05/21/98	082100	12.439	137.437	524.189	0.906	2.889	740.146
27	05/21/98	082200	12.411	137.863	524.927	0.909	2.910	739.700
28	05/21/98	082300	12.418	138.254	526.000	0.910	2.967	741.053
29	05/21/98	082400	12.452	137.995	525.315	0.907	3.231	753.874
30	05/21/98	082500	12.459	137.187	527.595	0.910	3.085	747.933
31	05/21/98	082600	12.444	136.832	527.819	0.912	2.916	747.823
32	05/21/98	082700	12.420	136.937	526.930	0.912	2.839	745.778
33	05/21/98	082800	12.367	137.295	524.043	0.911	2.814	747.361
34	05/21/98	082900	12.349	137.623	523.306	0.911	3.264	740.305
35	05/21/98	083000	12.315	138.256	524.444	0.915	2.979	740.305
36	05/21/98	083100	12.290	138.231	523.150	0.915	3.026	752.843
37	05/21/98	083200	12.360	137.771	516.265	0.898	2.999	824.168
38	05/21/98	083300	12.347	136.973	511.424	0.890	2.994	846.498
39	05/21/98	083400	12.250	136.678	514.481	0.903	3.030	793.135
40	05/21/98	083500	12.189	136.799	516.980	0.912	2.955	749.781
41	05/21/98	083600	12.170	137.233	517.884	0.915	2.998	737.583
42	05/21/98	083700	12.165	137.610	517.775	0.915	2.965	727.037
43	05/21/98	083800	12.117	138.167	516.420	0.916	2.993	721.573
44	05/21/98	083900	12.151	138.116	513.795	0.909	2.986	761.826
45	05/21/98	084000	12.201	137.868	513.100	0.904	2.804	772.110
46	05/21/98	084100	12.147	137.580	514.115	0.910	2.807	740.441
47	05/21/98	084200	12.124	137.175	516.636	0.916	2.778	721.156
48	05/21/98	084300	12.115	137.191	515.428	0.914	2.949	721.353
49	05/21/98	084400	12.115	137.382	519.104	0.921	3.072	720.238
50	05/21/98	084500	12.124	138.166	520.454	0.923	2.998	721.713
51	05/21/98	084600	12.122	138.384	520.602	0.923	3.004	719.944
52	05/21/98	084700	12.177	138.290	518.451	0.915	2.818	748.386
53	05/21/98	084800	12.228	138.465	518.025	0.910	3.417	754.436
54	05/21/98	084900	12.186	138.355	517.783	0.913	2.888	741.689
55	05/21/98	085000	12.187	138.328	520.859	0.919	2.904	733.700
56	05/21/98	085100	12.178	138.270	521.751	0.921	2.839	730.307
57	05/21/98	085200	12.178	138.210	524.257	0.925	2.858	728.878
58	05/21/98	085300	12.189	137.852	525.576	0.927	3.149	732.689

59	05/21/98	085400	12.254	137.897	528.394	0.927	2.858	736.654
60	05/21/98	085500	12.335	137.549	531.521	0.926	2.826	745.658
61	05/21/98	085600	12.306	138.011	530.959	0.927	2.834	736.621
62	05/21/98	085700	12.249	138.360	528.804	0.928	2.924	735.568
63	05/21/98	085800	12.207	138.499	527.587	0.929	2.955	732.270
64	05/21/98	085900	12.227	138.498	526.003	0.925	2.770	748.344
65	05/21/98	090000	12.298	138.472	532.614	0.931	2.817	741.422
66	05/21/98	090100	12.307	137.848	534.282	0.933	2.997	734.750
67	/ /							
68	/ /	AVE	12.367	137.658	522.943	0.909	2.960	766.240

G3 WDF BASELINE RUN 4-5 4-21-98

BEST AVAILABLE COPY

Record#	DATE	TIME	GN1CO231	GN1GEN32	GN1NOX33	GN1NOX34	GN1OPA35	GN1SO236
1	05/21/98	094400	12.414	137.056	521.634	0.903	2.844	755.755
2	05/21/98	094500	12.363	136.838	519.797	0.904	2.890	744.227
3	05/21/98	094600	12.356	136.966	516.832	0.899	2.949	753.960
4	05/21/98	094700	12.410	136.963	521.788	0.904	2.814	751.987
5	05/21/98	094800	12.498	136.671	527.746	0.908	2.790	763.653
6	05/21/98	094900	12.493	137.130	524.032	0.901	2.761	767.611
7	05/21/98	095000	12.458	137.275	519.245	0.896	3.347	776.709
8	05/21/98	095100	12.450	137.515	520.188	0.898	2.874	765.500
9	05/21/98	095200	12.435	137.502	522.210	0.903	2.841	753.123
10	05/21/98	095300	12.384	137.765	522.635	0.907	2.809	749.437
11	05/21/98	095400	12.328	137.931	521.330	0.909	2.803	738.938
12	05/21/98	095500	12.299	137.492	523.488	0.915	3.385	735.054
13	05/21/98	095600	12.294	137.180	523.722	0.916	2.915	735.009
14	05/21/98	095700	12.298	136.820	522.914	0.914	3.021	740.980
15	05/21/98	095800	12.252	136.800	522.346	0.916	3.004	735.253
16	05/21/98	095900	12.182	136.718	519.230	0.916	3.005	733.658
17	05/21/98	100000	12.157	137.066	519.219	0.918	3.018	735.141
18	05/21/98	100100	12.181	137.785	517.280	0.913	2.835	746.443
19	05/21/98	100200	12.217	138.131	520.811	0.916	2.768	742.104
20	05/21/98	100300	12.289	138.208	528.332	0.924	2.853	736.190
21	05/21/98	100400	12.256	137.678	528.136	0.926	2.978	733.926
22	05/21/98	100500	12.344	137.048	524.914	0.914	2.962	782.074
23	05/21/98	100600	12.384	136.734	518.288	0.899	2.809	812.411
24	05/21/98	100700	12.368	136.494	517.185	0.899	2.872	799.991
25	05/21/98	100800	12.351	136.521	520.596	0.906	2.852	774.112
26	05/21/98	100900	12.399	136.691	521.689	0.904	3.052	768.799
27	05/21/98	101000	12.396	136.847	523.980	0.908	2.910	746.960
28	05/21/98	101100	12.463	136.897	527.321	0.909	3.122	741.234
29	05/21/98	101200	12.513	136.938	528.853	0.908	3.058	758.094
30	05/21/98	101300	12.428	137.850	513.666	0.888	2.797	790.916
31	05/21/98	101400	12.035	138.359	488.183	0.872	3.205	773.475
32	05/21/98	101500	12.540	137.907	517.230	0.886	2.816	784.695
33	05/21/98	101600	12.602	137.453	530.922	0.905	2.698	760.320
34	05/21/98	101700	12.581	137.236	533.942	0.912	2.751	757.731
35	05/21/98	101800	12.581	137.032	534.098	0.912	2.791	750.730
36	05/21/98	101900	12.571	136.934	533.521	0.912	3.194	761.164
37	05/21/98	102000	12.601	136.889	533.006	0.909	2.948	761.164
38	05/21/98	102100	12.619	136.877	526.374	0.896	2.835	780.335
39	05/21/98	102200	12.595	136.756	526.599	0.899	2.831	767.133
40	05/21/98	102300	12.574	137.416	530.496	0.907	2.851	750.993
41	05/21/98	102400	12.531	137.624	530.111	0.909	2.896	743.620
42	05/21/98	102500	12.530	137.675	530.608	0.910	2.772	742.571
43	05/21/98	102600	12.524	136.841	531.870	0.913	2.857	740.311
44	05/21/98	102700	12.517	137.091	532.050	0.914	2.787	737.934
45	05/21/98	102800	12.533	137.130	531.954	0.912	2.927	746.293
46	05/21/98	102900	12.553	137.056	530.358	0.908	2.789	749.308
47	05/21/98	103000	12.520	137.077	530.597	0.911	2.795	742.367
48	05/21/98	103100	12.510	136.898	531.449	0.913	2.768	742.367
49	05/21/98	103200	12.534	137.311	532.578	0.913	2.773	744.719
50	05/21/98	103300	12.530	137.635	531.263	0.911	3.161	743.263
51	05/21/98	103400	12.562	137.803	532.445	0.911	2.905	739.210
52	05/21/98	103500	12.544	137.491	533.970	0.915	2.872	737.698
53	05/21/98	103600	12.612	137.084	533.322	0.909	2.883	756.859
54	05/21/98	103700	12.672	137.049	530.492	0.900	2.936	782.758
55	05/21/98	103800	12.592	136.993	520.777	0.889	3.289	802.668
56	05/21/98	103900	12.545	136.829	516.285	0.885	2.850	812.364
57	05/21/98	104000	12.528	137.103	517.373	0.888	2.791	783.543
58	05/21/98	104100	12.508	137.673	522.511	0.898	3.001	747.300

[illegible]/21/98	104200	12.538	137.660	527.851	0.905	3.044	738.114
[illegible]/21/98	104300	12.565	137.783	530.994	0.908	3.006	731.996
[illegible]/21/98	104400	12.626	137.609	528.707	0.900	2.913	768.911
[illegible]/21/98	104500	12.640	137.106	527.754	0.897	2.844	755.734
[illegible]/21/98	104600	12.633	136.947	527.425	0.897	2.819	737.083
[illegible]/21/98	104700	12.612	137.147	528.765	0.901	2.813	725.190
[illegible]/21/98	104800	12.597	137.104	528.207	0.901	2.776	721.935
[illegible]/21/98	104900	12.619	137.563	530.037	0.903	2.763	726.187
[illegible]/21/98	105000	12.589	137.906	529.992	0.905	2.780	719.699
/ /							
/ /	AVE	12.466	137.247	525.276	0.906	2.905	754.283

63 MODF BASELINE RUN 5-5 4-21-98

BEST AVAILABLE COPY

Record#	DATE	TIME	GN1CO231	GN1GEN32	GN1NOX33	GN1NOX34	GN1OPA35	GN1SO236
1	05/21/98	112700	12.566	137.343	525.876	0.899	2.886	716.185
2	05/21/98	112800	12.569	137.138	521.205	0.891	2.803	709.460
3	05/21/98	112900	12.577	136.820	519.816	0.888	2.863	706.244
4	05/21/98	113000	12.563	136.675	519.475	0.889	3.057	704.804
5	05/21/98	113100	12.535	136.828	515.614	0.884	2.931	709.599
6	05/21/98	113200	12.511	137.157	518.319	0.890	2.912	714.405
7	05/21/98	113300	12.441	137.045	514.361	0.889	2.889	718.634
8	05/21/98	113400	12.452	136.663	515.284	0.889	2.809	726.267
9	05/21/98	113500	12.461	136.409	513.486	0.886	3.118	729.375
10	05/21/98	113600	12.465	136.484	515.162	0.888	2.899	715.386
11	05/21/98	113700	12.453	136.668	518.684	0.895	2.989	693.405
12	05/21/98	113800	12.496	136.585	520.155	0.895	2.976	706.577
13	05/21/98	113900	12.570	136.584	516.166	0.883	3.086	752.258
14	05/21/98	114000	12.516	136.594	510.953	0.877	3.395	760.324
15	05/21/98	114100	12.478	137.124	507.955	0.875	2.922	769.943
16	05/21/98	114200	12.452	137.168	506.930	0.875	2.854	765.852
17	05/21/98	114300	12.464	137.152	514.556	0.887	2.835	730.239
18	05/21/98	114400	12.423	136.444	515.633	0.892	3.248	709.856
19	05/21/98	114500	12.452	136.336	517.764	0.894	3.206	706.862
20	05/21/98	114600	12.480	136.539	516.883	0.890	3.021	714.607
21	05/21/98	114700	7.821	137.593	257.420	0.707	2.892	311.272
22	05/21/98	114800	6.735	142.651	313.594	1.001	2.960	492.571
23	05/21/98	114900	10.416	146.189	445.612	0.919	3.339	627.003
24	05/21/98	115000	11.437	147.328	476.884	0.896	3.187	649.495
25	05/21/98	115100	11.698	148.204	493.172	0.906	3.109	657.344
26	05/21/98	115200	11.733	143.675	497.223	0.911	3.079	670.944
27	05/21/98	115300	12.033	134.682	499.702	0.892	2.695	703.383
28	05/21/98	115400	12.175	135.274	502.009	0.886	2.600	714.419
29	05/21/98	115500	12.103	133.349	486.883	0.865	2.373	745.508
30	05/21/98	115600	11.807	129.590	468.727	0.853	2.480	699.508
31	05/21/98	115700	11.696	126.727	443.678	0.815	2.691	723.245
32	05/21/98	115800	11.736	125.081	447.906	0.820	2.967	703.205
33	05/21/98	115900	11.638	128.277	461.022	0.851	3.509	657.705
34	05/21/98	120000	11.566	130.755	468.023	0.870	3.138	648.976
35	05/21/98	120100	11.695	133.437	483.671	0.889	2.988	662.606
36	05/21/98	120200	11.841	135.443	499.753	0.907	2.896	668.447
37	05/21/98	120300	11.954	136.455	511.973	0.920	2.876	672.370
38	05/21/98	120400	12.055	136.432	517.051	0.922	2.953	674.050
39	05/21/98	120500	12.116	135.141	516.038	0.915	2.724	677.414
40	05/21/98	120600	12.145	134.534	508.306	0.900	2.705	674.573
41	05/21/98	120700	12.219	134.624	505.806	0.890	2.805	672.888
42	05/21/98	120800	12.268	134.377	508.625	0.891	3.009	672.825
43	05/21/98	120900	12.309	134.782	509.926	0.890	2.877	684.952
44	05/21/98	121000	12.341	135.300	516.356	0.899	2.859	684.952
45	05/21/98	121100	12.381	132.180	521.844	0.906	3.129	688.595
46	05/21/98	121200	12.320	131.295	521.345	0.909	2.829	676.439
47	05/21/98	121300	11.427	131.680	472.902	0.889	2.921	594.638
48	05/21/98	121400	11.249	132.438	423.308	0.809	2.912	691.269
49	05/21/98	121500	12.266	133.248	477.631	0.837	2.858	713.846
50	05/21/98	121600	12.396	134.281	512.266	0.888	2.890	680.115
51	05/21/98	121700	12.407	135.489	523.584	0.907	2.997	680.342
52	05/21/98	121800	12.455	136.061	529.614	0.914	3.106	682.602
53	05/21/98	121900	12.479	136.524	531.767	0.916	2.942	681.467
54	05/21/98	122000	12.451	136.875	532.605	0.919	2.856	673.490
55	05/21/98	122100	12.462	137.791	534.800	0.922	2.899	673.490
56	05/21/98	122200	12.464	138.772	534.938	0.922	2.940	674.586
57	05/21/98	122300	12.475	141.019	535.703	0.923	3.348	680.473
58	05/21/98	122400	12.467	143.750	534.086	0.921	3.046	678.383

59	05/21/98	122500	12.486	144.337	537.266	0.925	3.174	676.029
60	05/21/98	122600	12.539	145.712	538.512	0.923	3.168	685.594
61	05/21/98	122700	12.605	146.894	545.805	0.931	3.599	699.758
62	05/21/98	122800	12.675	148.158	552.758	0.937	3.324	706.632
63	05/21/98	122900	12.682	149.843	557.416	0.945	3.140	695.933
64	05/21/98	123000	12.653	149.644	560.943	0.953	3.143	695.933
65	05/21/98	123100	12.597	149.421	560.716	0.957	3.077	676.933
66	05/21/98	123200	12.578	149.962	560.413	0.958	3.268	676.933
67	05/21/98	123300	12.548	150.170	555.208	0.951	3.303	670.291
68	/ /							
69	/ /	AVE	12.097	137.779	504.762	0.896	2.989	684.533

G-3 WDF Baseline Run 6-S 5-21-98

D-2 FUEL BLEND CEMS STACK TEST LOGS

===

Gannon Station
Unit 3
Tampa

===

Today's Date: 07/02/98 Reporting Period
Time: 06:43:12 Day: 05/13/98

DAILY EPA CEM SUMMARY

Time	CO2	SO2	SO2	SO2	NOX	NOX	FLOW	Ht Inp
	%	ppm	lb/mmBtu	lb/hr	ppm	lb/mmBtu	kscfh	mmBtu
0100	8.0	428.5	1.600	1195.1	341.2	0.917	16802	746
0200	7.3	409.3	1.680	1262.2	312.0	0.919	18577	753
0300	7.2	388.7	1.610	1153.5	312.5	0.933	17878	715
0400	7.5	393.9	1.570	1130.1	332.2	0.952	17284	720
0500	11.0	731.6	1.990	2637.6	456.3	0.892	21719	1327
0600	11.2	634.7	1.690	2330.7	495.2	0.950	22121	1376
0700	12.1	798.5	1.970	2959.3	507.2	0.901	22326	1500
0800	12.2	771.9	1.890	2901.3	522.6	0.921	22643	1534
0900	12.1	721.4	1.780	2702.0	509.7	0.905	22563	1516
1000	12.1	724.4	1.790	2691.8	510.6	0.907	22385	1504
1100	12.2	775.1	1.900	2887.9	520.1	0.916	22445	1521
1200	12.2	759.2	1.860	2792.9	572.1	1.008	22161	1502
1300	11.9	709.6	1.780	2605.0	535.1	0.966	22115	1462
1400	12.4	746.0	1.800	2744.3	554.3	0.961	22161	1526
1500	12.4	751.5	1.810	2754.7	564.9	0.979	22082	1521
1600	12.4	759.8	1.830	2768.4	552.9	0.958	21950	1512
1700	11.8	695.9	1.760	2489.1	503.5	0.917	21547	1412
1800	11.1	650.9	1.750	2172.7	452.4	0.876	20108	1240
1900	12.2	763.8	1.870	2729.5	556.5	0.980	21527	1459

2000	12.6	787.0	1.870	2905.5	628.0	1.071	22240	1556
2100	12.5	802.8	1.920	2957.6	627.0	1.078	22194	1541
2200	12.6	808.7	1.920	2943.1	620.4	1.058	21923	1534
2300	11.9	739.4	1.860	2426.0	557.6	1.007	19765	1306
2400	9.0	528.5	1.750	1298.1	437.9	1.046	14796	739
AVRGE	11.2	678.4	1.802	2393.3	499.3	0.959	20888	1314

Daily SO2 28.7 Tons
Daily CO2 3235.2 Tons

Legend
C - Out of Control
F - Fans Off
D - Out of Service
I - Insufficient Data
M - Maintenance Fault
A - Calibration Error
X - Calibration Expired

CEMS RECORDS
GANNON UNIT 3

	Date	Time	Load	NOx	Opacity	SO2
1	05/13/98	070000	134.653	0.904	3.959	1.982
2	05/13/98	080000	135.889	0.924	3.906	1.899
3	05/13/98	090000	135.207	0.906	3.626	1.785
4	05/13/98	100000	134.971	0.906	3.619	1.784
5	05/13/98	110000	135.114	0.913	3.806	1.894
6	05/13/98	120000	135.061	1.003	3.572	1.839
7	05/13/98	130000	134.351	0.964	3.571	1.777
8	05/13/98	140000	134.594	0.959	3.706	1.796
9	05/13/98	150000	134.492	0.981	3.714	1.810
10	05/13/98	160000	134.033	0.960	3.769	1.836
11	05/13/98	170000	124.063	0.919	3.617	1.764
12	05/13/98	180000	108.141	0.876	3.051	1.762
13	05/13/98	190000	130.595	0.973	3.823	1.860
14	05/13/98	200000	136.842	1.071	4.115	1.866
15	05/13/98	210000	136.796	1.074	4.340	1.913
16	/ /					
17	/ /	AVE	132.320	0.956	3.746	1.838

BEST AVAILABLE COPY

Record#	DATE	TIME	GN1CO231	GN1GEN32	GN1NOX33	GN1NOX34	GN1OPA35	GN1SO236
1	05/13/98	073600	12.224	136.284	523.096	0.920	3.862	833.305
2	05/13/98	073700	12.202	136.090	527.560	0.929	4.082	766.846
3	05/13/98	073800	12.196	135.932	528.881	0.932	3.955	764.084
4	05/13/98	073900	12.171	135.861	519.664	0.918	4.081	864.197
5	05/13/98	074000	12.147	135.856	518.279	0.917	4.483	887.587
6	05/13/98	074100	12.246	135.861	520.025	0.913	4.139	868.732
7	05/13/98	074200	12.218	135.933	521.037	0.917	3.856	814.394
8	05/13/98	074300	12.192	136.016	519.628	0.916	3.767	771.541
9	05/13/98	074400	12.162	135.725	518.048	0.915	3.787	749.300
10	05/13/98	074500	12.125	135.541	519.054	0.920	4.055	723.769
11	05/13/98	074600	12.111	135.619	519.256	0.921	3.711	705.993
12	05/13/98	074700	12.049	135.709	516.497	0.921	3.680	716.547
13	05/13/98	074800	12.104	135.756	523.738	0.930	3.768	711.455
14	05/13/98	074900	12.149	135.930	527.893	0.934	3.723	707.640
15	05/13/98	075000	12.174	135.730	523.722	0.925	3.648	744.574
16	05/13/98	075100	12.256	135.359	519.325	0.911	3.687	798.587
17	05/13/98	075200	12.301	134.989	518.852	0.907	3.846	772.129
18	05/13/98	075300	12.156	134.975	517.145	0.914	3.774	729.340
19	05/13/98	075400	12.052	135.017	514.176	0.917	4.045	715.111
20	05/13/98	075500	12.019	135.479	509.696	0.911	3.836	707.255
21	05/13/98	075600	12.002	135.705	507.614	0.909	3.646	695.804
22	05/13/98	075700	12.060	135.839	507.287	0.904	3.593	705.856
23	05/13/98	075800	12.176	135.811	513.804	0.907	3.647	717.220
24	05/13/98	075900	12.237	135.775	518.241	0.910	4.247	713.811
25	05/13/98	080000	12.211	135.678	516.462	0.909	3.868	720.190
26	05/13/98	080100	12.219	135.570	515.341	0.906	3.878	724.438
27	05/13/98	080200	12.204	135.573	510.308	0.899	3.833	724.438
28	05/13/98	080300	12.150	135.446	506.477	0.896	3.763	755.418
29	05/13/98	080400	12.209	135.460	507.426	0.893	4.509	795.721
30	05/13/98	080500	12.255	135.455	508.575	0.892	3.821	819.757
31	05/13/98	080600	12.257	135.484	504.030	0.884	3.669	845.794
32	05/13/98	080700	12.235	135.453	500.117	0.878	3.687	794.601
33	05/13/98	080800	12.154	135.539	500.734	0.885	3.767	739.950
34	05/13/98	080900	12.167	135.482	502.399	0.887	3.937	736.624
35	05/13/98	081000	12.199	135.434	497.317	0.876	3.775	799.473
36	05/13/98	081100	12.231	135.356	494.515	0.869	3.620	813.386
37	05/13/98	081200	12.225	135.308	490.614	0.862	3.584	748.537
38	05/13/98	081300	12.188	135.181	497.141	0.877	3.737	748.537
39	05/13/98	081400	12.129	135.183	498.991	0.884	3.664	722.481
40	05/13/98	081500	12.101	135.117	501.002	0.890	3.626	715.335
41	05/13/98	081600	12.120	135.377	505.104	0.896	3.751	719.698
42	05/13/98	081700	12.116	135.609	506.973	0.899	3.665	711.136
43	05/13/98	081800	12.119	135.611	507.365	0.900	3.901	721.701
44	05/13/98	081900	12.160	135.543	513.312	0.907	3.591	717.021
45	05/13/98	082000	12.177	135.502	514.942	0.909	3.668	707.683
46	05/13/98	082100	12.165	135.242	511.464	0.904	3.501	724.515
47	05/13/98	082200	12.152	134.869	503.321	0.890	3.488	724.515
48	05/13/98	082300	12.073	134.625	499.388	0.889	4.227	691.000
49	05/13/98	082400	11.982	134.637	500.582	0.898	3.545	691.000
50	05/13/98	082500	11.931	134.870	502.250	0.905	3.434	684.825
51	05/13/98	082600	11.908	135.142	501.045	0.904	3.424	689.628
52	05/13/98	082700	11.999	135.503	500.316	0.896	3.633	690.698
53	05/13/98	082800	12.003	135.621	498.127	0.892	3.583	687.398
54	05/13/98	082900	12.105	135.385	497.988	0.884	3.497	699.449
55	05/13/98	083000	12.155	135.304	499.564	0.883	3.501	695.507
56	05/13/98	083100	12.126	135.110	503.946	0.893	3.585	697.124
57	05/13/98	083200	12.128	135.041	508.604	0.899	3.684	703.308
58	05/13/98	083300	12.111	135.028	508.604	0.903	3.867	703.308

59	05/13/98	083400	12.106	134.919	505.835	0.898	3.781	735.771
60	05/13/98	083500	12.100	135.013	505.884	0.899	3.932	776.030
61	05/13/98	083600	12.074	135.135	508.114	0.904	3.649	793.092
62	/ /							
63	/ /	AVE	12.142	135.452	509.946	0.903	3.780	743.511

RUN 1 WDF Blend

BEST AVAILABLE COPY

Record#	DATE	TIME	GN1CO231	GN1GEN32	GN1NOX33	GN1NOX34	GN1OPA35	GN1SO236
1	05/13/98	081300	12.188	135.181	497.141	0.877	3.737	748.537
2	05/13/98	081400	12.129	135.183	498.991	0.884	3.664	722.481
3	05/13/98	081500	12.101	135.117	501.002	0.890	3.626	715.335
4	05/13/98	081600	12.120	135.377	505.104	0.896	3.751	719.698
5	05/13/98	081700	12.116	135.609	506.973	0.899	3.665	711.136
6	05/13/98	081800	12.119	135.611	507.365	0.900	3.901	721.701
7	05/13/98	081900	12.160	135.543	513.312	0.907	3.591	717.021
8	05/13/98	082000	12.177	135.502	514.942	0.909	3.668	707.683
9	05/13/98	082100	12.165	135.242	511.464	0.904	3.501	724.515
10	05/13/98	082200	12.152	134.869	503.321	0.890	3.488	724.515
11	05/13/98	082300	12.073	134.625	499.388	0.889	4.227	691.000
12	05/13/98	082400	11.982	134.637	500.582	0.898	3.545	691.000
13	05/13/98	082500	11.931	134.870	502.250	0.905	3.434	684.825
14	05/13/98	082600	11.908	135.142	501.045	0.904	3.424	689.628
15	05/13/98	082700	11.999	135.503	500.316	0.896	3.633	690.698
16	05/13/98	082800	12.003	135.621	498.127	0.892	3.583	687.398
17	05/13/98	082900	12.105	135.385	497.988	0.884	3.497	699.449
18	05/13/98	083000	12.155	135.304	499.564	0.883	3.501	695.507
19	05/13/98	083100	12.126	135.110	503.946	0.893	3.585	697.124
20	05/13/98	083200	12.128	135.041	508.604	0.899	3.684	703.308
21	05/13/98	083300	12.111	135.028	508.604	0.903	3.867	703.308
22	05/13/98	083400	12.106	134.919	505.835	0.898	3.781	735.771
23	05/13/98	083500	12.100	135.013	505.884	0.899	3.932	776.030
24	05/13/98	083600	12.074	135.135	508.114	0.904	3.649	793.092
25	05/13/98	083700	12.062	135.317	506.383	0.902	3.656	797.838
26	05/13/98	083800	12.096	135.254	505.830	0.899	3.419	764.286
27	05/13/98	083900	12.112	135.182	513.553	0.911	3.765	722.006
28	05/13/98	084000	12.029	135.286	509.810	0.911	3.582	698.833
29	05/13/98	084100	12.002	135.414	503.537	0.902	3.497	730.824
30	05/13/98	084200	12.053	135.547	500.494	0.892	3.984	730.011
31	05/13/98	084300	12.110	135.529	508.174	0.902	3.615	716.209
32	05/13/98	084400	12.094	135.394	512.743	0.911	3.431	703.890
33	05/13/98	084500	12.083	135.207	516.711	0.919	3.428	705.151
34	05/13/98	084600	12.085	134.947	517.065	0.920	3.550	702.683
35	05/13/98	084700	12.048	134.900	518.996	0.926	4.012	695.916
36	05/13/98	084800	12.010	134.965	521.905	0.934	3.504	687.324
37	05/13/98	084900	11.953	135.222	519.558	0.934	3.408	684.646
38	05/13/98	085000	11.939	135.371	518.952	0.934	3.371	686.879
39	05/13/98	085100	11.995	135.310	523.220	0.938	3.425	687.174
40	05/13/98	085200	12.051	135.154	527.531	0.941	3.278	690.125
41	05/13/98	085300	12.018	135.014	525.478	0.940	3.291	688.435
42	05/13/98	085400	12.007	134.922	524.324	0.938	3.282	683.043
43	05/13/98	085500	11.963	134.853	524.546	0.942	3.297	682.182
44	05/13/98	085600	11.965	134.945	529.252	0.951	3.428	681.652
45	05/13/98	085700	12.006	134.896	531.605	0.952	3.332	687.199
46	05/13/98	085800	12.003	134.711	531.268	0.951	3.346	684.042
47	05/13/98	085900	11.927	134.505	528.369	0.952	3.375	674.251
48	05/13/98	090000	11.891	134.457	527.570	0.954	3.513	669.135
49	05/13/98	090100	11.852	134.578	522.473	0.947	3.891	666.554
50	05/13/98	090200	11.798	134.850	515.515	0.939	3.558	670.163
51	05/13/98	090300	11.841	134.951	518.748	0.942	3.689	674.392
52	05/13/98	090400	11.896	135.062	519.406	0.938	3.799	682.860
53	05/13/98	090500	11.937	135.148	515.519	0.928	3.952	741.948
54	05/13/98	090600	12.003	134.975	514.818	0.922	4.396	778.967
55	05/13/98	090700	12.023	134.967	512.354	0.916	3.774	781.326
56	05/13/98	090800	12.001	134.855	509.516	0.912	3.497	766.957
57	05/13/98	090900	11.965	134.951	508.609	0.914	3.464	714.926
58	05/13/98	091000	11.921	134.996	507.959	0.916	3.951	682.359

59	05/13/98	091100	11.900	134.997	507.549	0.917	3.804	667.318
60	05/13/98	091200	11.926	135.047	506.933	0.914	3.767	689.208
61	05/13/98	091300	12.007	135.002	508.074	0.909	3.733	721.860
62	/ /							
63	/ /	AVE	12.030	135.102	511.708	0.914	3.623	708.907

Run 2 63 WDF

BEST AVAILABLE COPY

Record#	DATE	TIME	GN1CO231	GN1GEN32	GN1NOX33	GN1NOX34	GN1OPA35	GN1SO236
1	05/13/98	094700	12.140	134.693	503.156	0.891	3.464	717.119
2	05/13/98	094800	12.163	134.695	507.668	0.897	3.777	712.398
3	05/13/98	094900	12.165	134.616	508.310	0.898	3.957	713.937
4	05/13/98	095000	12.201	134.437	512.313	0.902	3.818	719.965
5	05/13/98	095100	12.180	134.527	515.546	0.910	3.464	712.015
6	05/13/98	095200	12.134	134.682	515.494	0.913	3.471	707.421
7	05/13/98	095300	12.111	135.041	513.348	0.911	3.800	700.202
8	05/13/98	095400	12.159	135.463	519.046	0.917	3.578	700.011
9	05/13/98	095500	12.209	135.549	523.747	0.922	3.358	707.816
10	05/13/98	095600	12.279	135.492	529.126	0.926	3.424	715.391
11	05/13/98	095700	12.340	135.423	532.420	0.927	3.553	719.920
12	05/13/98	095800	12.339	135.332	532.095	0.927	3.546	717.505
13	05/13/98	095900	12.346	135.310	530.944	0.924	3.433	726.747
14	05/13/98	100000	12.367	135.411	525.607	0.913	3.407	728.818
15	05/13/98	100100	12.399	135.512	521.748	0.904	3.497	730.792
16	05/13/98	100200	12.346	135.406	523.085	0.911	3.499	716.463
17	05/13/98	100300	12.350	135.320	516.888	0.900	3.723	726.168
18	05/13/98	100400	12.334	135.217	512.484	0.893	3.652	724.563
19	05/13/98	100500	12.243	134.930	516.900	0.907	3.879	709.514
20	05/13/98	100600	12.176	134.741	516.239	0.911	3.843	715.144
21	05/13/98	100700	12.141	134.761	512.226	0.907	4.068	749.058
22	05/13/98	100800	12.116	134.966	509.426	0.904	4.306	769.930
23	05/13/98	100900	12.135	134.934	508.063	0.900	3.721	794.166
24	05/13/98	101000	12.193	134.989	509.783	0.899	3.680	807.042
25	05/13/98	101100	12.184	134.937	511.193	0.902	3.726	783.624
26	05/13/98	101200	12.140	134.972	516.225	0.914	3.931	734.365
27	05/13/98	101300	12.118	135.138	518.185	0.919	3.926	722.060
28	05/13/98	101400	12.103	135.307	518.013	0.920	3.532	722.060
29	05/13/98	101500	12.196	135.223	511.222	0.901	3.704	775.361
30	05/13/98	101600	12.219	135.165	513.957	0.904	3.694	753.277
31	05/13/98	101700	12.176	134.979	513.468	0.906	4.175	726.249
32	05/13/98	101800	12.150	134.757	507.609	0.898	4.105	765.223
33	05/13/98	101900	12.189	134.695	497.052	0.876	4.097	832.130
34	05/13/98	102000	12.100	134.597	490.539	0.871	3.897	823.180
35	05/13/98	102100	12.052	134.614	490.568	0.875	3.896	822.338
36	05/13/98	102200	12.125	134.879	496.396	0.880	3.832	789.518
37	05/13/98	102300	12.057	135.045	501.664	0.894	3.631	747.441
38	05/13/98	102400	12.124	135.072	509.913	0.904	3.801	713.601
39	05/13/98	102500	12.141	135.159	514.080	0.910	3.675	713.601
40	05/13/98	102600	12.169	135.211	511.220	0.903	3.647	738.498
41	05/13/98	102700	12.234	135.134	507.618	0.892	3.903	814.535
42	05/13/98	102800	12.308	135.302	504.243	0.881	3.869	865.649
43	05/13/98	102900	12.312	135.527	509.328	0.889	3.632	853.037
44	05/13/98	103000	12.325	135.458	507.847	0.886	3.619	860.474
45	05/13/98	103100	12.388	135.234	506.823	0.879	3.857	811.216
46	05/13/98	103200	12.410	134.998	503.657	0.872	3.800	777.056
47	05/13/98	103300	12.315	134.829	501.923	0.876	3.479	768.962
48	05/13/98	103400	12.261	134.657	507.387	0.889	3.567	741.067
49	05/13/98	103500	12.239	134.711	514.194	0.903	3.721	711.550
50	05/13/98	103600	12.196	134.821	517.727	0.912	4.282	727.153
51	05/13/98	103700	12.192	134.952	515.904	0.909	4.027	741.565
52	05/13/98	103800	12.163	135.058	517.664	0.915	4.029	739.995
53	05/13/98	103900	12.159	135.137	513.022	0.907	3.862	770.829
54	05/13/98	104000	12.211	135.276	512.078	0.901	4.028	801.545
55	05/13/98	104100	12.247	135.367	511.682	0.898	3.711	820.253
56	05/13/98	104200	12.279	135.207	506.839	0.887	3.628	860.437
57	05/13/98	104300	12.320	134.887	502.989	0.877	3.767	850.822
58	05/13/98	104400	12.273	134.774	503.007	0.881	4.311	852.479

BEST AVAILABLE COPY

59	05/13/98	104500	12.223	134.677	503.396	0.885	4.202	877.032
60	05/13/98	104600	12.256	134.744	507.274	0.890	4.259	950.388
61	05/13/98	104700	12.275	134.848	516.233	0.904	3.819	904.432
62	/ /							
63	/ /	AVE	12.220	135.029	511.931	0.900	3.780	765.657

RUN 3 WDF 63
SO_2

BEST AVAILABLE COPY

Record#	DATE	TIME	GN1CO231	GN1GEN32	GN1NOX33	GN1NOX34	GN1OPA35	GN1SO236
1	05/13/98	070000	12.120	135.639	531.867	0.943	4.054	754.613
2	05/13/98	070100	12.112	135.809	533.166	0.946	3.883	771.125
3	05/13/98	070200	12.160	136.204	534.003	0.944	4.439	804.818
4	05/13/98	070300	12.187	136.169	529.467	0.934	3.885	851.135
5	05/13/98	070400	12.268	136.128	523.320	0.917	3.766	893.835
6	05/13/98	070500	12.225	135.756	523.374	0.920	3.941	841.573
7	05/13/98	070600	12.164	135.411	527.498	0.932	4.361	788.955
8	05/13/98	070700	12.120	135.507	528.360	0.937	4.245	788.955
9	05/13/98	070800	11.982	135.890	521.661	0.936	4.304	865.989
10	05/13/98	070900	12.018	136.087	514.323	0.920	4.122	917.845
11	05/13/98	071000	12.108	136.031	517.638	0.919	3.825	917.034
12	05/13/98	071100	12.152	135.947	525.641	0.930	4.032	870.997
13	05/13/98	071200	12.086	135.907	524.616	0.933	3.882	804.402
14	05/13/98	071300	12.064	136.015	524.140	0.934	3.699	748.258
15	05/13/98	071400	12.085	135.891	527.258	0.938	3.760	739.106
16	05/13/98	071500	12.180	136.003	532.773	0.940	3.623	730.128
17	05/13/98	071600	12.160	136.067	531.202	0.939	4.137	728.754
18	05/13/98	071700	12.179	136.020	531.191	0.937	3.823	717.250
19	05/13/98	071800	12.207	135.895	532.314	0.937	3.746	717.250
20	05/13/98	071900	12.199	135.866	527.983	0.930	3.646	750.635
21	05/13/98	072000	12.174	136.001	521.052	0.920	3.607	761.256
22	05/13/98	072100	12.159	136.089	524.341	0.927	4.381	738.131
23	05/13/98	072200	12.108	136.276	526.112	0.934	3.855	722.488
24	05/13/98	072300	12.089	136.361	525.728	0.935	3.734	734.707
25	05/13/98	072400	12.191	136.138	526.203	0.928	3.793	744.984
26	05/13/98	072500	12.225	136.047	519.607	0.913	3.671	737.724
27	05/13/98	072600	12.131	136.234	516.150	0.914	3.668	720.545
28	05/13/98	072700	12.101	136.441	522.431	0.928	3.810	705.186
29	05/13/98	072800	12.140	136.634	529.355	0.937	3.716	736.732
30	05/13/98	072900	12.242	136.622	531.541	0.933	3.744	736.732
31	05/13/98	073000	12.297	136.319	527.269	0.922	3.866	750.596
32	05/13/98	073100	12.330	135.708	525.869	0.917	4.092	772.966
33	05/13/98	073200	12.256	135.414	524.022	0.919	4.035	804.521
34	05/13/98	073300	12.184	135.616	527.853	0.931	4.159	827.831
35	05/13/98	073400	12.159	136.094	527.892	0.933	3.947	846.429
36	05/13/98	073500	12.196	136.258	520.972	0.918	4.366	886.827
37	05/13/98	073600	12.224	136.284	523.096	0.920	3.862	833.305
38	05/13/98	073700	12.202	136.090	527.560	0.929	4.082	766.846
39	05/13/98	073800	12.196	135.932	528.881	0.932	3.955	764.084
40	05/13/98	073900	12.171	135.861	519.664	0.918	4.081	864.197
41	05/13/98	074000	12.147	135.856	518.279	0.917	4.483	887.587
42	05/13/98	074100	12.246	135.861	520.025	0.913	4.139	868.732
43	05/13/98	074200	12.218	135.933	521.037	0.917	3.856	814.394
44	05/13/98	074300	12.192	136.016	519.628	0.916	3.767	771.541
45	05/13/98	074400	12.162	135.725	518.048	0.915	3.787	749.300
46	05/13/98	074500	12.125	135.541	519.054	0.920	4.055	723.769
47	05/13/98	074600	12.111	135.619	519.256	0.921	3.711	705.993
48	05/13/98	074700	12.049	135.709	516.497	0.921	3.680	716.547
49	05/13/98	074800	12.104	135.756	523.738	0.930	3.768	711.455
50	05/13/98	074900	12.149	135.930	527.893	0.934	3.723	707.640
51	05/13/98	075000	12.174	135.730	523.722	0.925	3.648	744.574
52	05/13/98	075100	12.256	135.359	519.325	0.911	3.687	798.587
53	05/13/98	075200	12.301	134.989	518.852	0.907	3.846	772.129
54	05/13/98	075300	12.156	134.975	517.145	0.914	3.774	729.340
55	05/13/98	075400	12.052	135.017	514.176	0.917	4.045	715.111
56	05/13/98	075500	12.019	135.479	509.696	0.911	3.836	707.255
57	05/13/98	075600	12.002	135.705	507.614	0.909	3.646	695.804
58	05/13/98	075700	12.060	135.839	507.287	0.904	3.593	705.856

59	05/13/98	075800	12.176	135.811	513.804	0.907	3.647	717.220
60	05/13/98	075900	12.237	135.775	518.241	0.910	4.247	713.811
61	05/13/98	080000	12.211	135.678	516.462	0.909	3.868	720.190
62	05/13/98	080100	12.219	135.570	515.341	0.906	3.878	724.438
63	05/13/98	080200	12.204	135.573	510.308	0.899	3.833	724.438
64	05/13/98	080300	12.150	135.446	506.477	0.896	3.763	755.418
65	05/13/98	080400	12.209	135.460	507.426	0.893	4.509	795.721
66	/ /							
67	/ /	AVE	12.161	135.862	522.257	0.923	3.914	771.317

Run 1 WDF Part. & HCL

BEST AVAILABLE COPY

Record#	DATE	TIME	GN1CO231	GN1GEN32	GN1NOX33	GN1NOX34	GN1OPA35	GN1SO236
1	05/13/98	150500	12.603	135.490	590.667	1.007	3.803	793.489
2	05/13/98	150600	12.773	134.964	606.269	1.020	3.537	797.860
3	05/13/98	150700	12.803	134.306	600.255	1.008	3.590	804.091
4	05/13/98	150800	12.708	133.441	588.369	0.995	3.964	833.615
5	05/13/98	150900	12.606	132.992	580.357	0.989	3.876	844.058
6	05/13/98	151000	12.423	133.449	579.487	1.002	3.921	753.697
7	05/13/98	151100	12.250	133.794	571.080	1.002	3.702	753.697
8	05/13/98	151200	12.352	134.136	570.947	0.993	3.883	755.820
9	05/13/98	151300	12.302	134.467	562.990	0.984	3.968	732.937
10	05/13/98	151400	12.176	134.549	563.058	0.994	3.458	724.674
11	05/13/98	151500	12.339	134.420	571.854	0.996	3.473	737.978
12	05/13/98	151600	12.337	134.047	577.824	1.007	3.439	727.361
13	05/13/98	151700	12.309	133.896	570.067	0.995	4.144	735.337
14	05/13/98	151800	12.252	133.741	560.368	0.983	3.967	731.263
15	05/13/98	151900	12.208	133.664	555.817	0.979	3.914	735.122
16	05/13/98	152000	12.277	133.614	553.322	0.969	3.761	765.102
17	05/13/98	152100	12.301	133.714	550.852	0.962	4.153	798.935
18	05/13/98	152200	12.292	133.797	543.195	0.950	4.117	798.935
19	05/13/98	152300	12.306	133.825	539.694	0.943	3.725	792.958
20	05/13/98	152400	12.350	133.946	540.666	0.941	3.868	770.371
21	05/13/98	152500	12.286	133.985	540.369	0.945	4.031	742.421
22	05/13/98	152600	12.314	133.858	540.354	0.943	3.755	747.398
23	05/13/98	152700	12.343	133.804	531.402	0.925	3.882	783.179
24	05/13/98	152800	12.372	133.879	529.029	0.919	3.627	775.875
25	05/13/98	152900	12.341	133.903	534.094	0.930	3.505	755.783
26	05/13/98	153000	12.293	134.085	535.421	0.936	3.664	743.621
27	05/13/98	153100	12.282	134.235	538.777	0.943	3.541	733.270
28	05/13/98	153200	12.352	134.306	542.402	0.944	3.915	739.801
29	05/13/98	153300	12.477	134.214	547.819	0.944	3.870	739.801
30	05/13/98	153400	12.476	134.024	545.291	0.939	3.549	733.468
31	05/13/98	153500	12.475	133.837	544.597	0.938	3.448	739.474
32	05/13/98	153600	12.379	133.913	540.265	0.938	4.021	725.062
33	05/13/98	153700	12.311	134.024	541.702	0.946	3.732	714.661
34	05/13/98	153800	12.316	134.208	544.574	0.950	3.552	722.337
35	05/13/98	153900	12.347	134.125	541.886	0.943	3.452	731.510
36	05/13/98	154000	12.407	134.079	543.225	0.941	3.665	745.073
37	05/13/98	154100	12.400	134.073	545.956	0.946	3.808	738.576
38	05/13/98	154200	12.354	134.196	548.076	0.953	3.446	741.290
39	05/13/98	154300	12.410	134.034	546.838	0.947	3.386	749.920
40	05/13/98	154400	12.503	133.876	545.575	0.938	3.395	752.351
41	05/13/98	154500	12.414	133.569	546.165	0.946	3.404	733.055
42	05/13/98	154600	12.325	133.607	550.836	0.960	3.622	720.045
43	05/13/98	154700	12.295	133.783	557.120	0.974	3.473	710.103
44	05/13/98	154800	12.256	133.955	556.271	0.975	3.677	715.901
45	05/13/98	154900	12.289	133.859	552.660	0.967	4.169	727.501
46	05/13/98	155000	12.290	133.652	549.635	0.961	3.890	743.062
47	05/13/98	155100	12.329	133.569	543.331	0.947	3.940	794.838
48	05/13/98	155200	12.320	133.650	544.410	0.950	3.897	804.015
49	05/13/98	155300	12.304	133.955	544.438	0.951	3.797	799.948
50	05/13/98	155400	12.279	134.297	544.122	0.952	3.729	788.252
51	05/13/98	155500	12.372	134.375	549.463	0.954	3.995	780.927
52	05/13/98	155600	12.432	134.224	556.417	0.962	4.254	765.449
53	05/13/98	155700	12.459	134.132	555.151	0.958	3.917	768.195
54	05/13/98	155800	12.434	134.067	539.745	0.933	3.887	805.589
55	05/13/98	155900	12.420	133.945	535.192	0.926	3.718	802.200
56	05/13/98	160000	12.422	133.946	542.476	0.939	4.286	778.967
57	05/13/98	160100	12.386	134.070	551.961	0.958	3.976	750.209
58	05/13/98	160200	12.433	133.944	558.580	0.966	3.854	744.479

BEST AVAILABLE COPY

59	05/13/98	160300	12.392	133.735	555.373	0.963	3.626	749.209
60	05/13/98	160400	12.358	133.539	556.101	0.967	3.793	744.891
61	05/13/98	160500	12.323	133.473	556.617	0.971	3.729	732.700
62	/ /							
63	/ /	AVE	12.376	133.971	553.293	0.961	3.773	757.405

Run 3 WDF 63
VOC

BEST AVAILABLE COPY

Record#	DATE	TIME	GN1CO231	GN1GEN32	GN1NOX33	GN1NOX34	GN1OPA35	GN1SO236
1	05/13/98	184500	12.657	139.641	626.526	1.064	3.923	766.532
2	05/13/98	184600	12.646	139.145	611.753	1.040	3.835	795.725
3	05/13/98	184700	12.665	138.787	608.391	1.032	4.388	804.546
4	05/13/98	184800	12.659	138.967	613.852	1.042	3.987	792.652
5	05/13/98	184900	12.621	139.288	614.169	1.046	3.735	781.456
6	05/13/98	185000	12.684	139.241	619.227	1.049	3.597	781.295
7	05/13/98	185100	12.701	139.139	616.314	1.043	3.710	776.144
8	05/13/98	185200	12.647	138.952	615.622	1.046	4.340	767.684
9	05/13/98	185300	12.578	138.728	619.815	1.059	3.979	758.553
10	05/13/98	185400	12.583	138.739	624.505	1.067	3.979	750.880
11	05/13/98	185500	12.578	139.007	626.868	1.071	4.015	756.872
12	05/13/98	185600	12.595	139.299	627.673	1.071	4.760	766.781
13	05/13/98	185700	12.679	139.640	629.405	1.067	4.314	793.902
14	05/13/98	185800	12.757	139.863	621.909	1.048	4.067	844.600
15	05/13/98	185900	12.772	139.996	620.691	1.044	4.034	850.413
16	05/13/98	190000	12.848	139.573	618.583	1.035	3.993	865.811
17	05/13/98	190100	12.965	138.061	618.700	1.026	3.992	880.804
18	05/13/98	190200	12.943	137.391	616.953	1.024	3.933	904.073
19	05/13/98	190300	12.846	137.109	626.041	1.047	4.042	864.708
20	05/13/98	190400	12.675	136.993	626.541	1.062	4.141	824.113
21	05/13/98	190500	12.619	136.876	619.989	1.056	4.038	856.274
22	05/13/98	190600	12.577	136.875	618.159	1.056	4.284	843.316
23	05/13/98	190700	12.534	136.883	626.676	1.075	3.915	795.600
24	05/13/98	190800	12.555	137.061	638.812	1.094	4.136	758.360
25	05/13/98	190900	12.507	136.994	639.516	1.099	4.167	750.980
26	05/13/98	191000	12.523	136.964	642.035	1.102	4.092	763.344
27	05/13/98	191100	12.528	136.786	639.298	1.097	4.928	769.506
28	05/13/98	191200	12.503	136.352	636.391	1.094	4.250	769.896
29	05/13/98	191300	12.480	136.154	630.325	1.085	4.030	769.896
30	05/13/98	191400	12.465	136.179	633.276	1.092	3.846	751.305
31	05/13/98	191500	12.416	136.542	638.792	1.106	4.310	732.861
32	05/13/98	191600	12.403	136.811	639.485	1.108	4.336	730.950
33	05/13/98	191700	12.486	137.017	635.237	1.093	3.836	753.013
34	05/13/98	191800	12.559	137.079	633.678	1.084	3.840	772.012
35	05/13/98	191900	12.590	137.040	630.405	1.076	3.832	764.352
36	05/13/98	192000	12.623	136.740	628.114	1.069	3.825	766.950
37	05/13/98	192100	12.672	136.409	628.689	1.066	3.690	759.420
38	05/13/98	192200	12.735	136.377	632.544	1.068	3.615	759.420
39	05/13/98	192300	12.633	136.396	631.403	1.074	3.693	750.259
40	05/13/98	192400	12.606	136.254	633.963	1.081	3.660	750.259
41	05/13/98	192500	12.594	136.015	636.379	1.086	3.997	743.048
42	05/13/98	192600	12.525	135.939	634.154	1.088	3.887	731.951
43	05/13/98	192700	12.510	136.065	628.689	1.080	4.348	735.818
44	05/13/98	192800	12.471	136.640	624.399	1.076	4.214	733.149
45	05/13/98	192900	12.536	137.100	619.327	1.062	3.933	791.324
46	05/13/98	193000	12.650	137.490	619.876	1.053	4.350	835.035
47	05/13/98	193100	12.777	137.477	624.538	1.051	4.140	857.142
48	05/13/98	193200	12.805	137.408	620.476	1.041	3.993	860.423
49	05/13/98	193300	12.830	137.267	615.436	1.031	3.765	860.423
50	05/13/98	193400	12.750	136.948	615.157	1.037	4.267	831.340
51	05/13/98	193500	12.685	136.795	627.291	1.063	4.651	794.544
52	05/13/98	193600	12.674	136.743	622.037	1.055	4.312	828.043
53	05/13/98	193700	12.548	136.672	618.269	1.059	4.404	821.832
54	05/13/98	193800	12.515	136.835	622.125	1.068	4.118	800.419
55	05/13/98	193900	12.572	136.799	631.099	1.079	4.478	791.564
56	05/13/98	194000	12.522	137.065	635.284	1.090	4.266	771.902
57	05/13/98	194100	12.486	137.222	635.972	1.095	4.145	764.557
58	05/13/98	194200	12.483	137.144	632.557	1.089	4.278	769.780

59	05/13/98	194300	12.614	137.313	644.319	1.098	4.196	778.355
60	05/13/98	194400	12.597	137.096	643.705	1.098	4.044	769.103
61	05/13/98	194500	12.642	136.573	643.779	1.094	4.043	785.156
62	/ /							
63	/ /	AVE	12.621	137.475	627.134	1.068	4.081	789.351

Run 5 WDF 63
VOC

BEST AVAILABLE COPY

Record#	DATE	TIME	GN1CO231	GN1GEN32	GN1NOX33	GN1NOX34	GN1OPA35	GN1SO236
1	05/13/98	125400	12.193	133.885	546.796	0.964	3.997	752.419
2	05/13/98	125500	12.132	133.378	540.311	0.957	3.914	743.370
3	05/13/98	125600	12.024	133.322	532.496	0.952	3.724	732.679
4	05/13/98	125700	11.913	133.540	530.742	0.958	3.874	701.242
5	05/13/98	125800	11.877	134.134	530.491	0.960	3.656	690.845
6	05/13/98	125900	11.959	134.700	534.752	0.961	3.656	703.409
7	05/13/98	130000	12.100	135.116	545.078	0.968	3.573	708.481
8	05/13/98	130100	12.234	135.163	551.848	0.969	3.479	712.438
9	05/13/98	130200	12.299	135.121	552.725	0.966	3.527	715.584
10	05/13/98	130300	12.437	134.770	550.796	0.952	3.436	731.478
11	05/13/98	130400	12.471	134.576	548.847	0.946	4.047	737.369
12	05/13/98	130500	12.473	134.692	549.878	0.947	3.581	732.234
13	05/13/98	130600	12.417	134.815	547.136	0.947	3.572	729.697
14	05/13/98	130700	12.472	135.024	545.108	0.939	3.498	740.454
15	05/13/98	130800	12.550	134.868	541.728	0.928	3.471	747.839
16	05/13/98	130900	12.571	134.586	544.116	0.930	3.606	728.842
17	05/13/98	131000	12.526	134.168	547.349	0.939	3.631	728.842
18	05/13/98	131100	12.463	133.774	551.020	0.950	3.605	715.479
19	05/13/98	131200	12.298	133.777	550.104	0.961	3.632	700.997
20	05/13/98	131300	12.261	133.869	547.735	0.960	4.019	706.669
21	05/13/98	131400	12.223	133.949	545.190	0.959	3.936	711.648
22	05/13/98	131500	12.224	133.980	541.448	0.952	3.894	757.636
23	05/13/98	131600	12.250	134.125	539.335	0.946	3.790	781.309
24	05/13/98	131700	12.244	134.426	538.494	0.945	3.791	789.556
25	05/13/98	131800	12.283	134.554	539.026	0.943	3.845	783.812
26	05/13/98	131900	12.358	134.537	542.833	0.944	3.700	758.923
27	05/13/98	132000	12.387	134.493	544.853	0.945	4.019	735.404
28	05/13/98	132100	12.350	134.369	546.244	0.951	3.986	735.404
29	05/13/98	132200	12.369	134.584	543.562	0.944	3.798	763.909
30	05/13/98	132300	12.400	134.648	541.760	0.939	4.201	793.924
31	05/13/98	132400	12.495	134.329	540.451	0.930	3.667	807.231
32	05/13/98	132500	12.551	134.157	547.288	0.937	3.764	779.347
33	05/13/98	132600	12.434	133.908	547.940	0.947	3.706	737.940
34	05/13/98	132700	12.347	133.747	545.957	0.950	3.605	722.105
35	05/13/98	132800	12.275	133.801	545.729	0.956	4.502	717.045
36	05/13/98	132900	12.264	133.751	550.644	0.965	3.761	709.014
37	05/13/98	133000	12.214	133.939	550.480	0.969	3.519	709.014
38	05/13/98	133100	12.151	134.308	551.451	0.975	3.510	698.426
39	05/13/98	133200	12.170	134.478	558.506	0.986	3.758	698.426
40	05/13/98	133300	12.257	134.745	566.045	0.993	3.837	699.979
41	05/13/98	133400	12.304	134.716	562.946	0.983	3.616	714.263
42	05/13/98	133500	12.337	134.578	556.695	0.970	3.667	729.455
43	05/13/98	133600	12.365	134.865	559.197	0.972	3.587	724.870
44	05/13/98	133700	12.332	135.042	556.547	0.970	3.558	716.363
45	05/13/98	133800	12.374	135.119	551.459	0.958	3.367	726.558
46	05/13/98	133900	12.539	134.976	551.257	0.945	3.358	738.771
47	05/13/98	134000	12.561	134.731	549.259	0.940	3.318	743.356
48	05/13/98	134100	12.504	134.606	550.518	0.946	3.364	726.718
49	05/13/98	134200	12.421	134.540	560.450	0.970	3.693	715.414
50	05/13/98	134300	12.380	134.722	561.191	0.974	3.608	708.672
51	05/13/98	134400	12.350	134.732	550.809	0.959	4.085	708.911
52	05/13/98	134500	12.318	134.611	550.212	0.960	3.972	721.280
53	05/13/98	134600	12.378	134.551	549.800	0.955	3.685	766.072
54	05/13/98	134700	12.378	134.698	546.415	0.949	4.278	788.920
55	05/13/98	134800	12.392	134.906	555.026	0.963	3.814	787.207
56	05/13/98	134900	12.420	135.044	558.399	0.966	3.599	786.774
57	05/13/98	135000	12.548	134.892	566.778	0.971	3.496	805.334
58	05/13/98	135100	12.573	134.816	571.595	0.977	3.840	791.062

59	05/13/98	135200	12.511	134.853	573.793	0.986	4.046	765.609
60	05/13/98	135300	12.473	134.939	561.748	0.968	3.872	806.985
61	05/13/98	135400	12.530	135.000	556.679	0.955	3.621	806.985
62	05/13/98	135500	12.483	135.436	555.066	0.956	3.451	783.801
63	05/13/98	135600	12.500	135.536	563.342	0.969	3.617	759.641
64	05/13/98	135700	12.666	135.427	579.963	0.984	3.565	780.400
65	05/13/98	135800	12.713	135.008	592.113	1.001	3.557	774.789
66	05/13/98	135900	12.598	134.731	587.984	1.003	3.516	765.126
67	05/13/98	140000	12.498	134.561	585.414	1.007	3.540	750.160
68	/ /							
69	/ /	AVE	12.364	134.533	551.954	0.960	3.713	742.446

Run 1 WDF 63
VOC

BEST AVAILABLE COPY

Record#	DATE	TIME	GN1CO231	GN1GEN32	GN1NOX33	GN1NOX34	GN1OPA35	GN1SO236
1	05/13/98	144700	12.453	133.739	561.612	0.969	3.964	740.061
2	05/13/98	144800	12.348	133.772	549.049	0.956	4.112	738.691
3	05/13/98	144900	12.250	134.009	535.574	0.940	4.662	750.627
4	05/13/98	145000	12.184	134.364	528.885	0.933	4.193	767.573
5	05/13/98	145100	12.234	134.562	531.159	0.933	4.027	784.199
6	05/13/98	145200	12.302	134.478	541.588	0.946	3.922	777.487
7	05/13/98	145300	12.314	134.430	544.378	0.950	4.151	769.346
8	05/13/98	145400	12.201	134.537	540.858	0.953	4.478	741.881
9	05/13/98	145500	12.240	134.719	537.513	0.944	4.032	742.420
10	05/13/98	145600	12.407	134.881	532.534	0.922	3.953	807.589
11	05/13/98	145700	12.524	134.980	537.388	0.922	3.583	834.382
12	05/13/98	145800	12.580	134.954	550.391	0.940	3.775	834.522
13	05/13/98	145900	12.585	134.343	557.449	0.952	3.798	824.155
14	05/13/98	150000	12.597	133.974	563.344	0.961	3.787	815.434
15	05/13/98	150100	12.461	133.810	549.491	0.948	3.796	798.196
16	05/13/98	150200	12.357	134.094	542.774	0.944	3.929	789.521
17	05/13/98	150300	12.314	135.032	544.627	0.951	3.640	769.664
18	05/13/98	150400	12.357	135.542	560.145	0.974	3.614	778.198
19	05/13/98	150500	12.603	135.490	590.667	1.007	3.803	793.489
20	05/13/98	150600	12.773	134.964	606.269	1.020	3.537	797.860
21	05/13/98	150700	12.803	134.306	600.255	1.008	3.590	804.091
22	05/13/98	150800	12.708	133.441	588.369	0.995	3.964	833.615
23	05/13/98	150900	12.606	132.992	580.357	0.989	3.876	844.058
24	05/13/98	151000	12.423	133.449	579.487	1.002	3.921	753.697
25	05/13/98	151100	12.250	133.794	571.080	1.002	3.702	753.697
26	05/13/98	151200	12.352	134.136	570.947	0.993	3.883	755.820
27	05/13/98	151300	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
28	05/13/98	151400	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
29	05/13/98	151500	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
30	05/13/98	151600	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
31	05/13/98	151700	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
32	05/13/98	151800	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
33	05/13/98	151900	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
34	05/13/98	152000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
35	05/13/98	152100	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
36	05/13/98	152200	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
37	05/13/98	152300	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
38	05/13/98	152400	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
39	05/13/98	152500	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
40	05/13/98	152600	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
41	05/13/98	152700	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
42	05/13/98	152800	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
43	05/13/98	152900	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
44	05/13/98	153000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
45	05/13/98	153100	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
46	05/13/98	153200	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
47	05/13/98	153300	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
48	05/13/98	153400	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
49	05/13/98	153500	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
50	05/13/98	153600	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
51	05/13/98	153700	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
52	05/13/98	153800	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
53	05/13/98	153900	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
54	05/13/98	154000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
55	05/13/98	154100	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
56	05/13/98	154200	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
57	05/13/98	154300	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
58	05/13/98	154400	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000

BEST AVAILABLE COPY

05/13/98	154500	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
05/13/98	154600	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
05/13/98	154700	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
05/13/98	154800	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
05/13/98	154900	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
05/13/98	155000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
05/13/98	155100	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
05/13/98	155200	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
05/13/98	155300	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000	-9999.000
/ /							
/ /	AVE	-6113.967	-6066.660	-5902.430	-6118.417	-6117.273	-5814.309

Run 2 WDF G3

D-3 CONTINUOUS EMISSIONS RELATIVE ACCURACY TEST AUDIT RESULTS - 1997

TECO
TAMPA ELECTRIC

CORPORATE ENVIRONMENTAL SERVICES
MEMORANDUM

SUBJECT: Continuous Emissions Monitoring (CEM) Systems
Relative Accuracy Test Audit Results - 1997

TO: Cindy Barringer

FROM: David Smith

DATE: 18, December, 1997

Corporate Environmental Services, Air Programs Group, performed a Relative Accuracy Test Audit (RATA) on Boiler No. 3 (GB03) on November 5 and November 6, 1997. This audit was conducted in accordance with the system supplier's directions, and meet the requirements of 40 CFR 75, Appendix B.

All results were deemed acceptable, meeting the performance specifications of 40 CFR 75, Appendix A, Performance Specification 3.31, 3.32, 3.33, 3.34.

Attached to this memorandum, you will find data summary sheets for each system tested. All testing was performed under my direction, and the results are certified as true and accurate.

These records should be maintained at your facility for a period of three (3) years to comply with 40 CFR 75, Appendix F, Record Keeping Requirements. Corporate Environmental Services will maintain all supporting information for this test for the same time period.

Should you have any questions regarding this information, feel free to contact me at extension 38282.

David A. Smith
Environmental Technician
Corporate Environmental Services
Air Programs

cc: L. Robinson
G. Nelson
J. Woodlee
J. Williams

RELATIVE ACCURACY TEST AUDIT

DATA SUMMARY

PLANT: F. J. GANNON STATION DATE: 11/06/97

UNIT: BOILER NO. 3

MONITOR: SPECTRUM SYSTEMS

COMPARISON: ppm SO2 (wet basis)

OPERATING LEVEL: HIGH GROSS SOURCE LOAD: 140

VALID OR INVALID RUN	RUN	TIME	RM ppm SO2	CEMS ppm SO2	DIFF ppm SO2
V	1	0826-0848	780.2	808.8	-28.6
V	2	0920-0941	783.5	796.6	-13.1
V	3	1005-1026	794.0	800.7	-6.7
V	4	1113-1134	795.1	807.9	-12.8
V	5	1156-1217	794.6	819.8	-25.2
V	6	1242-1303	785.1	784.9	0.2
V	7	1355-1416	772.0	793.8	-21.8
V	8	1445-1506	788.3	806.3	-18.0
V	9	1528-1549	790.1	807.0	-16.9
I	10	00:00 - 00:00	0.0	0.0	0.0
I	11	00:00 - 00:00	0.0	0.0	0.0
I	12	00:00 - 00:00	0.0	0.0	0.0
I	13	00:00 - 00:00	0.0	0.0	0.0
I	14	00:00 - 00:00	0.0	0.0	0.0
I	15	00:00 - 00:00	0.0	0.0	0.0

REFERENCE MEAN:	786.989	MD:	-15.891
MEAN CEM:	802.880	STD DEV:	9.012
		CC:	6.927
NUMBER OF RUNS:	9		
T-VALUE:	2.306		
		REL ACCY:	2.90%
BIAS TEST:	PASSED		
BIAS ADJ. (BAF)	1.000		

RELATIVE ACCURACY TEST AUDIT

DATA SUMMARY

PLANT: F. J. GANNON STATION DATE: 11/06/97

UNIT: BOILER NO. 3

MONITOR: SPECTRUM SYSTEMS

COMPARISON: lb NOx/MMBTU

OPERATING LEVEL: HIGH GROSS SOURCE LOAD: 140

VALID OR INVALID RUN	RUN	TIME	RM lbNOx/ MMBTU	CEMS lbNOx/ MMBTU	DIFF lbNOx/ MMBTU
V	1	0826-0848	1.317	1.349	-0.032
V	2	0920-0941	1.310	1.327	-0.017
V	3	1005-1026	1.317	1.333	-0.016
V	4	1113-1134	1.282	1.310	-0.028
V	5	1156-1217	1.284	1.311	-0.027
V	6	1242-1303	1.320	1.312	0.008
V	7	1355-1416	1.262	1.289	-0.027
V	8	1445-1506	1.271	1.288	-0.017
V	9	1528-1549	1.276	1.293	-0.017
I	10	00:00 - 00:00	0.000	0.000	0.000
I	11	00:00 - 00:00	0.000	0.000	0.000
I	12	00:00 - 00:00	0.000	0.000	0.000
I	13	00:00 - 00:00	0.000	0.000	0.000
I	14	00:00 - 00:00	0.000	0.000	0.000
I	15	00:00 - 00:00	0.000	0.000	0.000

REFERENCE MEAN: 1.293
MEAN CEM: 1.312

NUMBER OF RUNS: 9
T-VALUE: 2.306

BIAS TEST: PASSED
BIAS ADJ. (BAF) 1.000

MD: -0.019
STD DEV: 0.012
CC: 0.009

REL ACCY: 2.19%

RELATIVE ACCURACY TEST AUDIT

DATA SUMMARY

PLANT: F. J. GANNON STATION DATE: 11/06/97

UNIT: UNIT NO. 3

MONITOR: SPECTRUM SYSTEMS

COMPARISON: Percent CO2 (wet basis)

OPERATING LEVEL: HIGH GROSS SOURCE LOAD: 140

VALID OR INVALID RUN	RUN	TIME	RM % CO2	CEMS % CO2	DIFF % CO2
V	1	0826-0848	12.11	12.7	-0.6
V	2	0920-0941	12.34	12.7	-0.4
V	3	1005-1026	12.41	12.7	-0.3
V	4	1113-1134	12.47	12.7	-0.2
V	5	1156-1217	12.37	12.6	-0.3
V	6	1242-1303	12.37	12.7	-0.3
V	7	1355-1416	12.37	12.6	-0.2
V	8	1445-1506	12.47	12.7	-0.2
V	9	1528-1549	12.47	12.7	-0.2
I	10	00:00-00:00	0.00	0.0	0.0
I	11	00:00 - 00:00	0.00	0.0	0.0
I	12	00:00 - 00:00	0.00	0.0	0.0
I	13	00:00 - 00:00	0.00	0.0	0.0
I	14	00:00 - 00:00	0.00	0.0	0.0
I	15	00:00 - 00:00	0.00	0.0	0.0

REFERENCE MEAN: 12.376 MD: -0.296
MEAN CEM: 12.672 STD DEV: 0.117
CC: 0.090

NUMBER OF RUNS: 9
T-VALUE: 2.306

REL ACCY: 3.12%

BIAS TEST: PASSED
BIAS ADJ. (BAF) 1.000

RELATIVE ACCURACY TEST AUDIT

DATA SUMMARY

PLANT: F. J. GANNON STATION DATE: 11/06/97

UNIT: BOILER 3

MONITOR: SPECTRUM SYSTEM

COMPARISON: STACK FLOW

OPERATING LEVEL: HIGH GROSS SOURCE LOAD: 140

VALID OR INVALID RUN	RUN	TIME	RM FLOW WSCFH	CEMS FLOW WSCFH	DIFF FLOW WSCFH
V	1	0826-0838	342522	320619	21903
V	2	0920-0937	342314	319466	22848
V	3	1005-1020	344768	321010	23758
V	4	1113-1127	341105	317219	23886
V	5	1156-1212	340703	318470	22233
V	6	1242-1258	341772	319387	22385
V	7	1355-1411	345750	327103	18647
V	8	1445-1457	337927	314840	23087
V	9	1528-1543	344052	316987	27065
i	10	00:00 - 00:00	0	0	0
I	11	00:00 - 00:00	0	0	0
i	12	00:00 - 00:00	0	0	0
i	13	00:00 - 00:00	0	0	0
i	14	00:00 - 00:00	0	0	0
i	15	00:00 - 00:00	0	0	0

REFERENCE MEAN: 342324
MEAN CEM: 319456

NUMBER OF RUNS: 9
T-VALUE: 2.306

BIAS TEST: NOT PASSED
BIAS ADJ. (BAF) 1.072

MD: 22868
STD DEV: 2204
CC: 1694

REL ACCY: 7.18%

RELATIVE ACCURACY TEST AUDIT

DATA SUMMARY

PLANT F.J. GANNON STATION DATE: 11-5-97

UNIT: BOILER NO. 3

MONITOR: USI PRIMARY

COMPARISON: STACK FLOW

OPERATING LEVEL: MID GROSS SOURCE LOAD: 125

VALID OR INVALID RUN	RUN	TIME	RM FLOW WSCFH	CEMS FLOW WSCFH	DIFF FLOW WSCFH
I	1	1946-1953	324498	298445	26053
V	2	1953-1959	323698	299571	24127
V	3	1959-2006	324716	299049	25667
V	4	2017-2024	322965	297680	25285
V	5	2025-2031	323106	297448	25658
V	6	2032-2038	323227	298056	25171
I	7	2049-2056	323587	297762	25825
V	8	2057-2103	322073	299688	22385
V	9	2103-2109	323327	299072	24255
I	10	2123-2131	337831	298857	38974
V	11	2132-2137	346124	321203	24921
V	12	2137-2143	317763	316509	1254
I	13	00:00 - 00:00	0	0	0
I	14	00:00 - 00:00	0	0	0
I	15	00:00 - 00:00	0	0	0

REFERENCE MEAN:	325222	MD:	22080
MEAN CEM:	303142	STD DEV:	7876
		CC:	6054
NUMBER OF RUNS:	9		
T-VALUE:	2.306		
		REL ACCY:	8.65%
BIAS TEST:	NOT PASSED		
BIAS ADJ. (BAF)	1.073		

RELATIVE ACCURACY TEST AUDIT

DATA SUMMARY

PLANT F.J. GANNON STATION DATE: 11-5-97

UNIT: BOILER NO. 3

MONITOR: USI PRIMARY

COMPARISON: STACK FLOW

OPERATING LEVEL: LOW GROSS SOURCE LOAD: 70

VALID OR INVALID RUN	RUN	TIME	RM FLOW WSCFH	CEMS FLOW WSCFH	DIFF FLOW WSCFH
i	1	2230-2239	262281	232459	29822
i	2	2240-2249			0
v	3	2249-2259	263557	243386	20171
v	4	2312-2320	263426	237467	25959
v	5	2321-2328	263420	237930	25490
v	6	2329-2336	264610	240187	24423
v	7	2348-2356	260513	237884	22629
v	8	2357-0006	262693	236644	26049
v	9	0006-0013	260436	237043	23393
I	10	0026-0034	262711	236452	26259
v	11	0034-0041	259088	237451	21637
v	12	0042-0049	261483	237217	24266
I	13	00:00 - 00:00	0	0	0
I	14	00:00 - 00:00	0	0	0
I	15	00:00 - 00:00	0	0	0

REFERENCE MEAN: 262136
MEAN CEM: 238357

MD: 23780
STD DEV: 2017
CC: 1551

NUMBER OF RUNS: 9
T-VALUE: 2.306

REL ACCY: 9.66%

BIAS TEST: NOT PASSED
BIAS ADJ. (BAF) 1.100

D-4 CONTINUOUS EMISSIONS QUALITY ASSURANCE LINEARITY CHECKS - QUARTER 2 1998

TECO
TAMPA ELECTRIC

CORPORATE ENVIRONMENTAL SERVICES
MEMORANDUM

TO: Cindy Barringer

FROM: R. A. Mc Darby

DATE: 6, July, 1998

SUBJECT: Continuous Emissions Monitoring (CEM) Systems
Quality Assurance Linearity Checks
Quarter 2, 1998
Gannon Unit 3

Corporate Environmental Services, Air Programs group, performed linearity checks on Gannon Unit 3, on May 18, 1998. These checks were conducted in accordance with the system supplier's directions, and meet the requirements of 40 CFR 75, Appendix B, Quality Assurance and Quality Control Procedures.

Linearity checks were performed from 10:30 through 12:20. All final results were deemed acceptable, meeting the performance specifications of 40 CFR 75, Appendix A, section 3.2.

Attached to this memorandum, you will find data summary sheets for each analyzer tested.

These records should be maintained at your facility for a period of three (3) years to comply with 40 CFR 75, Appendix F, Recordkeeping Requirements. Corporate Environmental Services will maintain all supporting information for this test for the same time period.

Should you have any questions regarding this information, feel free to contact me at extension 38306.

Raymond A. Mc Darby
Senior Environmental Technician
Corporate Environmental Services
Air Programs

annon Station
NIT 3 Start Time: 1030 Date: 5-18-98 End Time: 1220 Date: 5-18-98

Analyzer SO2	LOW	MID	HIGH
REF GAS VALUE	367.30	779.90	1261.00
DATE	05/18/98	05/18/98	05/18/98
TIME	10:40	10:50	11:00
RUN 1	379.58	793.62	1269.08
DATE	05/18/98	05/18/98	05/18/98
TIME	11:10	11:20	11:30
RUN 2	382.10	797.39	1271.15
DATE	05/18/98	05/18/98	05/18/98
TIME	12:00	12:10	12:20
RUN 3	381.19	797.28	1270.98
AVERAGE=SUM/3	380.96	796.10	1270.40
% ACCURACY	3.72	2.08	0.75
OUT OF CONTROL	NO	NO	NO
SERIAL NUMBER	AAL15376	ALM-041075	ALM041257
EXPIRATION DATE	11/04/99	08/20/99	11/18/99

Analyzer NOX	LOW	MID	HIGH
REF GAS VALUE	375.20	845.70	1417.00
DATE	05/18/98	05/18/98	05/18/98
TIME	10:40	10:50	11:00
RUN 1	389.92	857.18	1395.99
DATE	05/18/98	05/18/98	05/18/98
TIME	11:10	11:20	11:30
RUN 2	385.95	848.38	1384.86
DATE	05/18/98	05/18/98	05/18/98
TIME	12:00	12:10	12:20
RUN 3	389.42	855.10	1391.82
AVERAGE=SUM/3	388.43	853.55	1390.89
% ACCURACY	3.53	0.93	1.84
OUT OF CONTROL	NO	NO	NO
SERIAL NUMBER	AAL15376	ALM-041075	ALM041257
EXPIRATION DATE	11/04/99	08/20/99	11/18/99

Analyzer CO2	LOW	MID	HIGH
REF GAS VALUE	4.96	11.36	17.63
DATE	05/18/98	05/18/98	05/18/98
TIME	10:40	10:50	11:00
RUN 1	5.05	11.36	17.67
DATE	05/18/98	05/18/98	05/18/98
TIME	11:10	11:20	11:30
RUN 2	5.10	11.38	17.67
DATE	05/18/98	05/18/98	05/18/98
TIME	12:00	12:10	12:20
RUN 3	5.08	11.36	17.66
AVERAGE=SUM/3	5.08	11.37	17.67
% ACCURACY	0.12	0.09	0.23
OUT OF CONTROL	NO	NO	NO
SERIAL NUMBER	AAL15376	ALM-041075	ALM041257
EXPIRATION DATE	11/04/99	08/20/99	11/18/99

APPENDIX E

FUEL ANALYSIS

E-1 BASELINE WEEKLY COMPOSITE

From: Tampa Electric Company
Laboratory Services Department
5012 Causeway Blvd. Tampa, FL 33619
H.R.S. Certification # E54272
D.E.P. Comprehensive QA Plan #910140

July 8, 1998

To: Environmental Coord., Gannon
Fuel Data Coord., Envir. Plan.
Fernando Serrano, Fuels, PSC

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA43034 Location code: GN-WK-3
Location Description: Gannon, Wkly Coal Comp, Unit 3
Sample collector: GANNON
Sample collection date: 05/14/98 Time: 05:28
Lab submittal date: 05/26/98 Time: 14:21
Sample Matrix: COAL

Coal Identification Information
Gannon sample I.D. number: WAF21-G3
Week ending date: 05/24/98

Parameter	**Result**	**Units**	**MDL**
Total Moisture	25.6	%	0.1
Ash, as Received	6.58	%	0.1
BTU, as Received	9228	BTU/Lb	100
Sulfur, as Received	0.82	%	0.08
BTU, Moisture-Ash Free, Calc.	13607	BTU/Lb.	100
BTU in Coal, as Determined	10025	BTU/Lb.	1
Pounds SO2 / Million BTU, Coal	1.69	Lbs. SO2/MMBTU	
Ash, Dry Basis	8.85	%	0.1
BTU, Dry Basis	12403	BTU/Lb.	100
Sulfur, Dry Basis	1.10	%	0.08
Sulfur in Coal, as Determined	0.89	%	0.08
Volatiles, as Received	32.20	%	1.40
Volatiles, Dry Basis	43.28	%	1.40
Fixed Carbon, as Received	35.62	%	
Fixed Carbon, Dry Basis	47.87	%	
Carbon, as Received	52.46	%	0.5
Hydrogen, as Received	3.86	%	0.14
Nitrogen, as Received	0.841	%	0.10
Oxygen, as Received (Calculated)	9.80	%	
Carbon, Dry Basis	70.51	%	0.5
Hydrogen, Dry Basis	5.19	%	0.14
Nitrogen, Dry Basis	1.13	%	0.10
Oxygen, Dry Basis, Calculated	13.2	%	
Chlorine by Bomb/IC, as Received	0.04	%	0.01
Chlorine by Bomb/IC, Dry Basis	0.05	%	0.01
Metals by ICP	see below	ug/g in ash	0.1

Data for Metals by ICP ug/g in ash:

Component Name	Result	Component MDL
Arsenic	29	0.1
Beryllium	6.2	0.1
Chromium	255	0.1
Lead	111	0.1
Nickel	104	0.1
Vanadium	316	0.1
Zinc	694	0.1

If there are any questions regarding this data, please call.

RL Dorey 7-8-98
Robert L. Dorey
Supervisor of Laboratory Services

E-2 FUEL BLEND WEEKLY COMPOSITES

From: Tampa Electric Company
Laboratory Services Department
5012 Causeway Blvd. Tampa, FL 33619
H.R.S. Certification # E54272
D.E.P. Comprehensive QA Plan #910140

July 9, 1998

To: David Smith, Air Programs

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA43693 Location code: SPECL-GN
Project account code: J18
Location Description: Gannon, WDF, Pellet Comp.
Sample collector: GANNON
Sample collection date: 05/13/98 Time: 15:46
Lab submittal date: 07/02/98 Time: 15:52

Parameter	**Result**	**Units**	**MDL**
Total Moisture	19.8	%	0.1
Ash, as Received	8.74	%	0.1
Ash, Dry Basis	10.9	%	0.1
Volatiles, as Received	61.25	%	1.40
Volatiles, Dry Basis	76.37	%	1.40
Fixed Carbon, as Received	10.21	%	
Fixed Carbon, Dry Basis	12.73	%	
Carbon, as Received	39.23	%	0.5
Hydrogen, as Received	5.71	%	0.14
Nitrogen, as Received	0.411	%	0.10
Sulfur, as Received	0.12	%	0.08
Oxygen, as Received (Calculated)	25.6	%	
Carbon, Dry Basis	48.91	%	0.5
Hydrogen, Dry Basis	7.12	%	0.14
Nitrogen, Dry Basis	0.513	%	0.10
Sulfur, Dry Basis	0.15	%	0.08
Oxygen, Dry Basis, Calculated	31.9	%	
Sulfur in Coal, as Determined	0.14	%	0.08
Chlorine by Bomb/IC, as Received	0.41	%	0.01
Chlorine by Bomb/IC, Dry Basis	0.51	%	0.01
BTU, as Received	7384	BTU/Lb	100
BTU, Moisture-Ash Free, Calc.	10333	BTU/Lb.	100
BTU in Coal, as Determined	8430	BTU/Lb.	1
Pounds SO2 / Million BTU, Coal	0.316	Lbs. SO2/MMBTU	
BTU, Dry Basis	9207.1	BTU/Lb.	100
Metals by ICP	see below	ug/g in ash	0.1

Data for Metals by ICP ug/g in ash:

Component Name	**Result**	**Component MDL**
Arsenic	52	0.1
Beryllium	8.3	0.1
Chromium	579	0.1
Lead	94	0.1
Nickel	142	0.1
Vanadium	188	0.1
Zinc	1055	0.1

Sample comments:

Composite of pellets for Gannon Unit #3,
05-12-98 and 05-13-98

If there are any questions regarding this data, please call.

Robert L. Dorey
Supervisor of Laboratory Services

From: Tampa Electric Company
Laboratory Services Department
5012 Causeway Blvd. Tampa, FL 33619
H.R.S. Certification # E54272
D.E.P. Comprehensive QA Plan #910140

July 8, 1998

To: Environmental Coord., Gannon
Fuel Data Coord., Envir. Plan.
Fernando Serrano, Fuels, PSC

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA42965 Location code: GN-WK-3
Location Description: Gannon, Wkly Coal Comp, Unit 3
Sample collector: GANNON
Sample collection date: 05/17/98 Time: 15:00
Lab submittal date: 05/21/98 Time: 15:47
Sample Matrix: COAL

Coal Identification Information
Gannon sample I.D. number: WAF20-G3
Week ending date: 05/17/98

Parameter	**Result**	**Units**	**MDL**
Total Moisture	23.3	%	0.1
Ash, as Received	6.53	%	0.1
BTU, as Received	9724	BTU/Lb	100
Sulfur, as Received	0.97	%	0.08
BTU, Moisture-Ash Free, Calc.	13857	BTU/Lb.	100
BTU in Coal, as Determined	10807	BTU/Lb.	1
Pounds SO2 / Million BTU, Coal	1.88	Lbs. SO2/MMBTU	
Ash, Dry Basis	8.51	%	0.1
BTU, Dry Basis	12678	BTU/Lb.	100
Sulfur, Dry Basis	1.26	%	0.08
Sulfur in Coal, as Determined	1.07	%	0.08
Volatiles, as Received	32.31	%	1.40
Volatiles, Dry Basis	42.12	%	1.40
Fixed Carbon, as Received	37.86	%	
Fixed Carbon, Dry Basis	49.37	%	
Carbon, as Received	54.73	%	0.5
Hydrogen, as Received	3.77	%	0.14
Nitrogen, as Received	0.982	%	0.10
Oxygen, as Received (Calculated)	9.64	%	
Carbon, Dry Basis	71.36	%	0.5
Hydrogen, Dry Basis	4.91	%	0.14
Nitrogen, Dry Basis	1.28	%	0.10
Oxygen, Dry Basis, Calculated	12.6	%	
Chlorine by Bomb/IC, as Received	0.08	%	0.01
Chlorine by Bomb/IC, Dry Basis	0.11	%	0.01
Metals by ICP	see below	ug/g in ash	0.1

Data for Metals by ICP ug/g in ash:

Component Name	**Result**	**Component MDL**
Arsenic	69	0.1
Beryllium	7.6	0.1
Chromium	165	0.1
Lead	123	0.1
Nickel	103	0.1
Vanadium	351	0.1
Zinc	601	0.1

If there are any questions regarding this data, please call.

RL Dorey 7-8-98

Robert L. Dorey
Supervisor of Laboratory Services

E-3 BASELINE/FUEL BLEND TEST DAILY

From: Tampa Electric Company
Laboratory Services Department
5012 Causeway Blvd. Tampa, FL 33619
H.R.S. Certification # E54272
D.E.P. Comprehensive QA Plan #910140

July 8, 1998

To: David Smith, Air Programs, CES

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA43010 Location code: GN-STK-3
Location Description: Gannon, Stack Test - Unit 3
Sample collector: DAB
Sample collection date: 05/21/98 Time: 08:00
Lab submittal date: 05/26/98 Time: 11:20
Sample Matrix: COAL

Parameter	**Result**	**Units**	**MDL**
Total Moisture	27.2	%	0.1
Ash, as Received	6.16	%	0.1
BTU, as Received	9042	BTU/Lb	100
Sulfur, as Received	0.80	%	0.08
BTU, Moisture-Ash Free, Calc.	13569	BTU/Lb.	100
BTU in Coal, as Determined	10411	BTU/Lb.	1
Pounds SO2 / Million BTU, Coal	1.68	Lbs. SO2/MMBTU	
Ash, Dry Basis	8.46	%	0.1
BTU, Dry Basis	12421	BTU/Lb.	100
Sulfur, Dry Basis	1.10	%	0.08
Sulfur in Coal, as Determined	0.92	%	0.08
Carbon, as Received	51.70	%	0.5
Hydrogen, as Received	3.56	%	0.14
Nitrogen, as Received	0.815	%	0.10
Oxygen, as Received (Calculated)	9.72	%	
Carbon, Dry Basis	71.01	%	0.5
Hydrogen, Dry Basis	4.89	%	0.14
Nitrogen, Dry Basis	1.12	%	0.10
Oxygen, Dry Basis, Calculated	13.4	%	
Chlorine by Bomb/IC, as Received	0.04	%	0.01
Chlorine by Bomb/IC, Dry Basis	0.06	%	0.01
Volatiles, Dry Basis	43.34	%	1.40
Volatiles, as Received	31.55	%	1.40
Metals by ICP	see below	ug/g in ash	0.1

Data for Metals by ICP ug/g in ash:

Component Name	**Result**	**Component MDL**
Arsenic	28	0.1
Beryllium	6.6	0.1

Data for Metals by ICP (continued):

Component Name	**Result**	**Component MDL**
Chromium	126	0.1
Lead	96	0.1
Nickel	104	0.1
Vanadium	277	0.1
Zinc	624	0.1

Sample comments:

Sample I.D.: #s-6166

Quality Control Values of Knowns

SULFUR		B.T.U.	
Source:	NIST 2684a	Source:	NIST 1632b
True Value:	2.94%	True Value:	13715 BTU/Lbs.
Avg. CES Value:	2.94%	CES Value:	13734 BTU/Lbs.

RLDorey 7-8-98
Approved by / Date

If there are any questions regarding this data, please call.

Robert L. Dorey
Supervisor of Laboratory Services

From: Tampa Electric Company
Laboratory Services Department
5012 Causeway Blvd. Tampa, FL 33619
H.R.S. Certification # E54272
D.E.P. Comprehensive QA Plan #910140

July 8, 1998

To: David Smith, Air Programs, CES

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA42966 Location code: GN-STK-3
Location Description: Gannon, Stack Test - Unit 3
Sample collector: C.W.PETERSON
Sample collection date: 05/20/98 Time: 01:00
Lab submittal date: 05/21/98 Time: 15:49
Sample Matrix: COAL

Parameter	**Result**	**Units**	**MDL**
Total Moisture	26.0	%	0.1
Ash, as Received	7.24	%	0.1
BTU, as Received	9123	BTU/Lb	100
Sulfur, as Received	0.81	%	0.08
BTU, Moisture-Ash Free, Calc.	13667	BTU/Lb.	100
BTU in Coal, as Determined	10191	BTU/Lb.	1
Pounds SO2 / Million BTU, Coal	1.70	Lbs. SO2/MMBTU	
Ash, Dry Basis	9.79	%	0.1
BTU, Dry Basis	12329	BTU/Lb.	100
Sulfur, Dry Basis	1.10	%	0.08
Sulfur in Coal, as Determined	0.91	%	0.08
Carbon, as Received	51.99	%	0.5
Hydrogen, as Received	3.67	%	0.14
Nitrogen, as Received	0.844	%	0.10
Oxygen, as Received (Calculated)	9.40	%	
Carbon, Dry Basis	70.26	%	0.5
Hydrogen, Dry Basis	4.96	%	0.14
Nitrogen, Dry Basis	1.14	%	0.10
Oxygen, Dry Basis, Calculated	12.7	%	
Chlorine by Bomb/IC, as Received	0.05	%	0.01
Chlorine by Bomb/IC, Dry Basis	0.07	%	0.01
Volatiles, Dry Basis	42.72	%	1.40
Volatiles, as Received	31.61	%	1.40
Metals by ICP	see below	ug/g in ash	0.1

Data for Metals by ICP ug/g in ash:

Component Name	**Result**	**Component MDL**
Arsenic	28	0.1
Beryllium	6.0	0.1

Data for Metals by ICP (continued):

Component Name	**Result**	**Component MDL**
Chromium	869	0.1
Lead	117	0.1
Nickel	126	0.1
Vanadium	283	0.1
Zinc	937	0.1

Sample comments:

Sample I.D.: #S-6165 Baseline

Quality Control Values of Knowns

SULFUR		B.T.U.	
Source:	NIST 2684a	Source:	NIST 1632b
True Value:	2.94 %	True Value:	13715 BTU/Lbs.
Avg. CES Value:	2.94%	CES Value:	13734 BTU/Lbs.

R L Dorey 7-8-98
Approved by / Date

If there are any questions regarding this data, please call.

Robert L. Dorey
Supervisor of Laboratory Services

From: Tampa Electric Company
Laboratory Services Department
5012 Causeway Blvd. Tampa, FL 33619
H.R.S. Certification # E54272
D.E.P. Comprehensive QA Plan #910140

July 8, 1998

To: David Smith, Air Programs, CES

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA42832 Location code: GN-STK-3
Location Description: Gannon, Stack Test - Unit 3
Sample collector: H.B.HANCOCK
Sample collection date: 05/13/98 Time: 08:00
Lab submittal date: 05/15/98 Time: 08:13
Sample Matrix: PAPER PELLETS

Parameter	**Result**	**Units**	**MDL**
Total Moisture	18.3	%	0.1
Ash, as Received	8.66	%	0.1
BTU, as Received	8803	BTU/Lb	100
Sulfur, as Received	0.25	%	0.08
BTU, Moisture-Ash Free, Calc.	12053	BTU/Lb.	100
BTU in Coal, as Determined	9939	BTU/Lb.	1
Pounds SO2 / Million BTU, Coal	0.535	Lbs. SO2/MMBTU	
Ash, Dry Basis	10.6	%	0.1
BTU, Dry Basis	10775	BTU/Lb.	100
Sulfur, Dry Basis	0.30	%	0.08
Sulfur in Coal, as Determined	0.28	%	0.08
Carbon, as Received	41.81	%	0.5
Hydrogen, as Received	5.35	%	0.14
Nitrogen, as Received	0.425	%	0.10
Oxygen, as Received (Calculated)	24.9	%	
Carbon, Dry Basis	51.18	%	0.5
Hydrogen, Dry Basis	6.55	%	0.14
Nitrogen, Dry Basis	0.520	%	0.10
Oxygen, Dry Basis, Calculated	30.5	%	
Chlorine by Bomb/IC, as Received	0.27	%	0.01
Chlorine by Bomb/IC, Dry Basis	0.33	%	0.01
Volatiles, Dry Basis	77.17	%	1.40
Volatiles, as Received	63.05	%	1.40
Metals by ICP	see below	ug/g in ash	0.1

Data for Metals by ICP ug/g in ash:

Component Name	**Result**	**Component MDL**
Arsenic	42	0.1
Beryllium	5.6	0.1

Data for Metals by ICP (continued):

Component Name	**Result**	**Component MDL**
Chromium	747	0.1
Lead	131	0.1
Nickel	171	0.1
Vanadium	230	0.1
Zinc	1240	0.1

Sample comments:

Sample I.D.: #Paper from paper pellets stack test

Quality Control Values of Knowns

SULFUR		B.T.U.	
Source:	NIST 2683b	Source:	NIST 1632b
True Value:	1.88%	True Value:	13715 BTU/Lbs.
Avg. CES Value:	1.88%	CES Value:	13727 BTU/Lbs.

RLDorey 7-8-98
Approved by / Date

If there are any questions regarding this data, please call.

Robert L. Dorey
Supervisor of Laboratory Services

From: Tampa Electric Company
Laboratory Services Department
5012 Causeway Blvd. Tampa, FL 33619
H.R.S. Certification # E54272
D.E.P. Comprehensive QA Plan #910140

July 8, 1998

To: David Smith, Air Programs, CES

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA42831 Location code: GN-STK-3
Location Description: Gannon, Stack Test - Unit 3
Sample collector: H.B.HANCOCK Sample collection date: 05/12/98
Lab submittal date: 05/15/98 Time: 08:13
Sample Matrix: COAL

Parameter	**Result**	**Units**	**MDL**
Total Moisture	26.5	%	0.1
Ash, as Received	6.61	%	0.1
BTU, as Received	9110	BTU/Lb	100
Sulfur, as Received	0.85	%	0.08
BTU, Moisture-Ash Free, Calc.	13619	BTU/Lb.	100
BTU in Coal, as Determined	10277	BTU/Lb.	1
Pounds SO2 / Million BTU, Coal	1.76	Lbs. SO2/MMBTU	
Ash, Dry Basis	8.99	%	0.1
BTU, Dry Basis	12395	BTU/Lb.	100
Sulfur, Dry Basis	1.15	%	0.08
Sulfur in Coal, as Determined	0.95	%	0.08
Carbon, as Received	51.99	%	0.5
Hydrogen, as Received	3.49	%	0.14
Nitrogen, as Received	0.808	%	0.10
Oxygen, as Received (Calculated)	9.71	%	
Carbon, Dry Basis	70.74	%	0.5
Hydrogen, Dry Basis	4.75	%	0.14
Nitrogen, Dry Basis	1.10	%	0.10
Oxygen, Dry Basis, Calculated	13.2	%	
Chlorine by Bomb/IC, as Received	0.04	%	0.01
Chlorine by Bomb/IC, Dry Basis	0.06	%	0.01
Volatiles, Dry Basis	43.07	%	1.40
Volatiles, as Received	31.66	%	1.40
Metals by ICP	see below	ug/g in ash	0.1

Data for Metals by ICP ug/g in ash:

Component Name	**Result**	**Component MDL**
Arsenic	32	0.1
Beryllium	7.0	0.1
Chromium	146	0.1

David Smith, Air Programs, CES   Sample I.D. AA42831 (continued)
Page: 2
July 8, 1998

Data for Metals by ICP (continued):

Component Name	**Result**	**Component MDL**
Lead	115	0.1
Nickel	109	0.1
Vanadium	293	0.1
Zinc	739	0.1

Sample comments:

Sample I.D.: Coal from paper pellets stack test

Quality Control Values of Knowns

	SULFUR		B.T.U.
Source:	NIST 2683b	Source:	NIST 1632b
True Value:	1.88%	True Value:	13715 BTU/Lbs.
Avg. CES Value:	1.86%	CES Value:	13727 BTU/Lbs.

RLDorey 7-8-98
Approved by / Date

If there are any questions regarding this data, please call.

Robert L. Dorey
Supervisor of Laboratory Services

E-4 12 MONTH COMPOSITE

	SAMPLE	LOCATION	DATE	A-MST-60	T-MOIST	LBS-SO2	AR-ASH
	AA36224	GN-WK-3	05/11/97	9.90	19.2	2.2	7.26
	AA36330	GN-WK-3	05/18/97	15.10	23.9	2.0	7.76
	AA36518	GN-WK-3	05/25/97	16.01	23.4	2.0	6.54
	AA36652	GN-WK-3	06/01/97	14.94	24.3	2.0	6.50
	AA36761	GN-WK-3	06/08/97	18.14	25.0	2.0	6.57
	AA36902	GN-WK-3	06/15/97	15.86	24.2	2.2	6.74
	AA37046	GN-WK-3	06/22/97	17.36	23.2	1.9	6.47
	AA37197	GN-WK-3	06/29/97	11.15	21.8	2.0	6.59
	AA37292	GN-WK-3	07/06/97	13.98	21.6	2.0	6.66
	AA37459	GN-WK-3	07/13/97	14.96	22.7	2.0	6.52
	AA37616	GN-WK-3	07/20/97	17.14	24.9	2.0	6.59
	AA37778	GN-WK-3	07/27/97	15.77	25.2	1.9	6.56
	AA37910	GN-WK-3	08/03/97	17.41	24.0	1.9	6.76
	AA38028	GN-WK-3	08/10/97	15.32	25.9	1.6	6.63
	AA38181	GN-WK-3	08/17/97	12.42	21.9	1.8	6.58
	AA38348	GN-WK-3	08/24/97	12.46	24.3	1.8	6.85
	AA38473	GN-WK-3	08/31/97	15.24	23.9	1.8	6.87
	AA38564	GN-WK-3	09/07/97	11.13	23.0	1.9	6.87
	AA38758	GN-WK-3	09/14/97	11.85	23.1	1.9	7.92
	AA38918	GN-WK-3	09/21/97	13.99	23.1	1.9	6.77
	AA39059	GN-WK-3	09/28/97	14.15	24.1	2.0	6.91
	AA39150	GN-WK-3	10/05/97	18.45	24.2	1.8	6.75
	AA39245	GN-WK-3	10/12/97	18.23	23.3	1.8	6.86
	AA39370	GN-WK-3	10/19/97	11.64	23.5	1.8	7.35
	AA39474	GN-WK-3	10/26/97	15.29	23.5	1.8	7.08
	AA39593	GN-WK-3	11/02/97	7.23	15.2	1.8	7.40
	AA39736	GN-WK-3	11/09/97	11.09	16.4	1.6	6.89
	AA39830	GN-WK-3	11/16/97	19.11	29.1	0.9	5.56
	AA39971	GN-WK-3	11/23/97	5.09	12.5	1.8	8.02
	AA40063	GN-WK-3	11/30/97	4.99	12.7	1.7	7.45
	AA40161	GN-WK-3	12/07/97	4.48	11.3	1.8	7.59
	AA40264	GN-WK-3	12/14/97	5.68	13.9	1.9	6.77
	AA40391	GN-WK-3	12/21/97	5.55	13.0	1.8	6.79
	AA40535	GN-WK-3	12/28/97	5.55	12.0	1.8	6.64
	AA40572	GN-WK-3	01/04/98	5.05	11.9	1.9	6.62
	AA40689	GN-WK-3	01/11/98	18.17	28.8	1.0	5.30
	AA40833	GN-WK-3	01/18/98	21.39	29.0	1.1	5.60
	AA40971	GN-WK-3	01/25/98	12.84	21.8	1.9	6.40
	AA41091	GN-WK-3	02/01/98	18.56	29.2	1.7	6.02
	AA41219	GN-WK-3	02/08/98	16.90	25.5	2.1	6.62
	AA41533	GN-WK-3	03/01/98	11.73	21.0	1.8	7.00
	AA41715	GN-WK-3	03/08/98	17.88	27.3	1.5	6.18
	AA41842	GN-WK-3	03/15/98	16.65	25.1	1.8	6.58
	AA41929	GN-WK-3	03/22/98	11.13	22.5	1.7	6.15
	AA42011	GN-WK-3	03/29/98	15.95	26.3	1.8	6.48
	AA42214	GN-WK-3	04/05/98	18.51	25.5	1.8	6.53
	AA42277	GN-WK-3	04/12/98	12.66	22.6	2.0	6.35
	AA42370	GN-WK-3	04/19/98	15.98	26.3	1.7	6.46
	AA42488	GN-WK-3	04/20/98	15.36	24.1	1.7	6.77
	AA42578	GN-WK-3	05/03/98	16.42	24.2	1.8	6.74
	AA42756	GN-WK-3	05/10/98	12.73	21.2	2.0	6.52
Mean				13.62	22.3	1.8	6.71
S.D.				4.35	4.7	0.3	0.52
Count				51.00	51.0	%51.0	51.00
[illegible]				4.48	11.3	0.9	5.30
Max				21.39	29.2	2.2	8.02
Range				16.91	17.9	1.3	2.72

D-ASH	AR-BTU	D-BTU	AR-S	D-S	MAF-BTU	SUL-C	AIR-DRY	ASH	BTU
[illegible]	10373	12838	1.20	1.49	14105	1.34	10.35	8.09	11567
10.20	9340	12273	1.00	1.31	13667	1.11	10.33	8.67	10420
8.54	9593	12524	1.00	1.31	13693	1.10	8.74	7.17	10519
8.58	9499	12548	1.02	1.35	13726	1.15	11.06	7.30	10673
8.76	9374	12498	0.99	1.32	13698	1.08	8.40	7.17	10231
8.89	9511	12547	1.10	1.45	13771	1.22	9.89	7.48	10557
8.42	9684	12610	0.97	1.26	13769	1.04	7.01	6.96	10421
8.43	9895	12654	1.06	1.35	13819	1.20	11.95	7.49	11243
8.50	9928	12663	1.03	1.31	13839	1.13	8.90	7.31	10893
8.44	9777	12648	1.02	1.32	13814	1.12	9.08	7.18	10756
8.77	9369	12475	0.96	1.28	13674	1.06	9.32	7.27	10337
8.77	9276	12401	0.91	1.22	13593	1.03	11.20	7.39	10445
8.89	9476	12468	0.93	1.22	13685	1.01	8.02	7.34	10297
8.95	9099	12280	0.77	1.04	13487	0.88	12.55	7.58	10399
8.43	9902	12679	0.94	1.21	13846	1.06	10.84	7.38	11104
9.05	9365	12371	0.87	1.15	13602	1.01	13.52	7.92	10830
9.03	9449	12416	0.90	1.18	13648	1.00	10.22	7.65	10524
8.92	9633	12510	0.96	1.25	13735	1.11	13.39	7.93	11118
10.30	9462	12304	0.95	1.23	13717	1.08	12.79	9.08	10846
8.80	9614	12502	0.95	1.24	13708	1.07	10.56	7.57	10753
9.11	9437	12434	0.99	1.30	13680	1.12	11.54	7.82	10675
8.91	9401	12403	0.91	1.20	13616	0.98	7.07	7.27	10115
8.95	9551	12453	0.88	1.15	13677	0.94	6.18	7.32	10183
9.61	9496	12413	0.92	1.20	13733	1.06	13.43	8.49	10968
9.26	9471	12380	0.91	1.19	13643	1.01	9.68	7.84	10487
8.73	11115	13107	1.06	1.25	14361	1.16	8.60	8.10	12159
[illegible]	10967	13118	0.91	1.09	14296	0.97	5.94	7.33	11663
[illegible]	8588	12113	0.38	0.54	13143	0.44	12.35	6.34	9798
9.17	11651	13315	1.13	1.29	14659	1.22	7.85	8.70	12637
8.53	11743	13451	1.07	1.23	14705	1.17	8.14	8.10	12780
8.56	11937	13458	1.14	1.29	14718	1.23	7.09	8.18	12855
7.86	11606	13480	1.16	1.35	14630	1.27	8.68	7.41	12714
7.81	11855	13626	1.13	1.30	14780	1.23	7.94	7.38	12870
7.55	12021	13660	1.14	1.29	14776	1.22	6.80	7.13	12902
7.51	11999	13620	1.20	1.36	14726	1.29	7.23	7.13	12932
7.44	8677	12187	0.46	0.64	13167	0.52	13.04	6.09	9973
7.89	8583	12089	0.48	0.67	13125	0.53	9.68	6.20	9503
8.18	10032	12828	0.99	1.26	13971	1.10	10.31	7.13	11181
8.50	8660	12231	0.76	1.08	13367	0.88	13.12	6.92	9961
8.89	9271	12444	1.01	1.36	13658	1.13	10.38	7.39	10341
8.86	10096	12780	0.95	1.20	14022	1.06	10.49	7.82	11281
8.50	8981	12353	0.70	0.96	13501	0.79	11.49	6.98	10144
8.78	9388	12534	0.88	1.18	13740	0.98	10.15	7.32	10447
7.93	10016	12924	0.89	1.15	14037	1.02	12.79	7.05	11486
8.79	9187	12465	0.88	1.20	13666	1.01	12.26	7.39	10477
8.77	9231	12390	0.89	1.20	13581	0.98	8.54	7.15	10097
8.21	9801	12663	1.01	1.31	13796	1.14	11.36	7.17	11060
8.76	9128	12385	0.83	1.13	13574	0.95	12.24	7.36	10406
8.92	9451	12452	0.86	1.13	13672	0.96	10.31	7.55	10539
8.89	9427	12437	0.89	1.18	13651	0.99	9.29	7.43	10395
8.27	10120	12842	1.04	1.32	14000	1.15	9.70	7.22	11207
8.64	9853	12652	0.94	1.21	13848	1.05	10.04	7.46	10944
0.57	932	410	0.17	0.18	417	0.18	2.06	0.57	899
[illegible]	51	51	51.00	51.00	51	51.00	51.00	51.00	51
[illegible]	8583	12089	0.38	0.54	13125	0.44	5.94	6.09	9503
10.30	12021	13660	1.20	1.49	14780	1.34	13.52	9.08	12932
2.86	3438	1571	0.82	0.95	1655	0.90	7.58	2.99	3429

APPENDIX F

FIELD DATA SHEETS

F-1 BASELINE PARTICULATE DATA SHEETS

BEST AVAILABLE COPY

PARTICULATE SAMPLING FIELD DATA SHEET

SAMPLING LOCATION: GANNON STATION Boiler No. 3
TEST METHOD: USEPA METHOD #17.
OPERATOR:
CONTROL BOX: Jeff Sellars
SAMPLE PROBE: STEVE Kelly
DATE: 5-20-98 **RUN NO.:** 1-5 **MIN / PT.:** 3
TIME START: 07:33 **END:** 09:03 **TOTAL:** 60 MIN
STACK DIMENSIONS: 12.4237 FT ID
STACK AREA: 121.225 FT^2 **EFF. AREA:** 121.225 FT^2

EQUIPMENT:
CONTROL BOX NO: 6 **PYRO NO.:** 12
NOZZLE NO.: 6 (0.197) **PITOT NO.:** 00122
THIMBLE HOLDER NO. A **PROBE LENGTH:** 8' FT
METER CALIBRATION: (Y) = 1.006 (ΔH) = 1.718
ASSUMED H_2O: 9.0 % % PITOT C_P: 0.84
WEATHER: CLEAR
PRESSURE: P_b (" H_g) 29.94 P_g (" H_2O) 0.8 P_s (" H_g) 30.00 ✓
COMMENTS: SOOTBLOWING RUN

DRY GAS METER VOLUME
FINAL: 186.779 FT^3
INITIAL: 151.232 FT^3
NET: 35.547 ✓ FT^3

MOISTURE DETERMINATION
IMPINGER: ~~65~~ 75 ml
SILICA GEL: 8.4 ml
TOTAL: 83.4 ✓ ml

EQUIPMENT LEAK CKECKS
INITIAL: 0.0 CFM@ 15.0 " H_g
FINAL: 0.0 CFM@ 8.0 ✓ " H_g
PITOT: 0.0 @ 4.0 " H_2O

PROBE ASSEMBLY CHECKS
NOZZLE / PITOT: 1 (≥ 3/4 IN.)
THERMO / PITOT: 2 (≥ 2.0 IN.)
PROBE / PITOT: 3 (≥ 3.0 IN.)
DAMAGE DURING TEST? No

JM 5/20/98

TRAVERSE POINT NUMBER	CLOCK TIME (24 HR)	METER READING (FT^3)	ΔP (" H_2O)	ΔH (" H_2O)	STACK TEMP. T_s (°F)	METER TEMP. T_m (°F)	LAST IMP. TEMP. (°F)	VACUUM READING (" H_g)
1	0753	153.1	1.35	1.27	291	75	47	6.5
2		155.0	1.30	1.22	299	78	47	6.0
3		156.9	1.30	1.22	300	81	47	6.0
4		158.5	1.25	1.18	296	82	49	6.0
5	08:08	160.0	.85	.80	286	83	50	5.0
1	08:10	161.9	1.40	1.32	298	83	52	7.0
2		163.8	1.40	1.32	301	84	53	7.0
3		165.6	1.30	1.22	300	84	54	6.5
ATP→ 4		167.4	1.30	1.25	296	84	54	6.0
5	08:25	169.1	1.15	1.10	298	84	56	6.0

BEST AVAILABLE COPY

PARTICULATE SAMPLING FIELD DATA SHEET

	TRAVERSE POINT NUMBER	CLOCK TIME (24 HR)	METER READING (FT^3)	ΔP ("H_2O)	ΔH ("H_2O)	STACK TEMP. T_s (°F)	METER TEMP. T_m (°F)	LAST IMP. TEMP. (°F)	VACUUM READING ("H_g)
3	1	08:27	171.0	1.30	1.25	300	83	56	6.5
6	2		172.8	1.20	1.15	302	83	54	6.5
9	3		174.6	1.20	1.15	302	84	53	6.5
12	4		176.3	1.10	1.10	300	84	55	6.0
15	5	08:42	177.8	.95	.89	290	87	52	5.0
3	1	08:48	179.7 ~~176.3~~	1.30 ~~.95~~	1.25 ~~.89~~	292	82	52	6.5
6	2		181.5 ~~179.7~~	1.25	1.20	303	83	50	6.5
9	3		183.3 ~~181.5~~	1.25	1.20	303	86	50	6.5
12	4		185.1	1.10	1.10	300	85	51	6.0
15	5	09:03	186.7	.93	.89	292	84	51	5.5

BEST AVAILABLE COPY

PARTICULATE SAMPLING FIELD DATA SHEET

SAMPLING LOCATION: Gannon Station Boiler No. 3
TEST METHOD: USEPA Method # 17
OPERATOR:
CONTROL BOX: Jeff Sellars
SAMPLE PROBE: Steve Kelly
DATE: 5-20-98 RUN NO.: 2-5 MIN / PT.: 3
TIME START: 09:40 END: 10:45 TOTAL: 60 min
STACK DIMENSIONS: 12-4237 FT ID
STACK AREA: 121.225 FT^2 EFF. AREA: 121.225 FT^2

DRY GAS METER VOLUME
FINAL: 222.749 FT^3
INITIAL: 187.232 FT^3
NET: 35.517 ✓ FT^3

MOISTURE DETERMINATION
IMPINGER: 95 ml
SILICA GEL: 7.6 ml
TOTAL: 102.6 ✓ ml

5/20/98

EQUIPMENT:
CONTROL BOX NO: 6 PYRO NO.: 12
NOZZLE NO.: 6 (0.197) PITOT NO.: 00122
THIMBLE HOLDER NO. B PROBE LENGTH: 8' FT
METER CALIBRATION: (Y) 1.036 (ΔH) 1.718
ASSUMED H_2O: 9.0% % PITOT C_P: 0.84
WEATHER: Clear
PRESSURE: P_b(" H_g) 29.94 P_g(" H_2O) 0.8 P_s(" H_g) 30.00 ✓
COMMENTS: Sootblowing Run

EQUIPMENT LEAK CKECKS
INITIAL: 0.0 CFM@ 15.0 " H_g
FINAL: 0.0 CFM@ 9.0 ✓ " H_g
PITOT: 0.0 @ 4.0 " H_2O

PROBE ASSEMBLY CHECKS
NOZZLE / PITOT: 1 (≥ 3/4 IN.)
THERMO / PITOT: 2 (≥ 2.0 IN.)
PROBE / PITOT: 3 (≥ 3.0 IN.)
DAMAGE DURING TEST? No

	TRAVERSE POINT NUMBER	CLOCK TIME (24 HR)	METER READING (FT^3)	ΔP ("H_2O)	ΔH ("H_2O)	STACK TEMP T_s(°F)	METER TEMP T_m(°F)	LAST IMP. TEMP (°F)	VACUUM READING ("H_g)
	1	09:40	189.1	1.30	1.25	282	84	65	6.5
6	2		190.7	1.20	1.15	304	87	56	6.0
9	3		192.6	1.20	1.15	305	88	54	6.0
12	4		194.4	1.05	1.01	303	89	52	5.5
15	5	9:55	196.0	.87	.83	298	89	51	5.0
3	1	09:57	197.9	1.30	1.25	302	88	50	6.0
6	2		199.6	1.20	1.15	306	90	48	6.0
9	3		201.3	1.20	1.15	308	90	50	6.0
12	4		203.2	1.10	1.05	308	90	50	6.0
15	5	10:12 ~~204.~~	204.8	.97	.93	298	91	49	6.0

BEST AVAILABLE COPY

	TRAVERSE POINT NUMBER	CLOCK TIME (24 HR)	METER READING (FT^3)	ΔP ("H_2O)	ΔH ("H_2O)	STACK TEMP. T_s (°F)	METER TEMP. T_m (°F)	LAST IMP. TEMP. (°F)	VACUUM READING ("H_g)
3	1	10:13	206.7	1.40	1.34	302	90	58	6.0
6	2		208.5	1.30	1.25	305	91	48	6.0
9	3		210.2	1.20	1.15	302	92	48	6.0
12	4		212.0	1.10	1.05	298	96	49	6.0
15	5	10:28	213.7	1.10	1.05	297	96	49	6.0
3	1	10:30	215.5	1.30	1.25	300	93	52	6.0
6	2		217.4	1.30	1.25	306	94	49	6.0
9	3		219.2	1.30	1.25	306	96	50	6.0
12	4		221.1	1.20	1.15	303	95	51	6.0
15	5	10:45	222.749	1.10	1.05	292	95	52	6.0

BEST AVAILABLE COPY

PARTICULATE SAMPLING FIELD DATA SHEET

SAMPLING LOCATION: Gannon Station Boiler No. 3	**DRY GAS METER VOLUME**
TEST METHOD: USEPA Method #17	FINAL: 259.448 FT^3
OPERATOR:	INITIAL: 222.936 FT^3
CONTROL BOX: Jeff Sellars	NET: 36.512 ✓ FT^3
SAMPLE PROBE: Steve Kelly	**MOISTURE DETERMINATION**
DATE: 5-20-98 RUN NO.: 3-S MIN / PT.: ~~6~~ 3	IMPINGER: 90 ml
TIME START: 11:13 END: 12:18 TOTAL: 60 min	SILICA GEL: 8.4 ml
STACK DIMENSIONS: 12.4237 FT ID	TOTAL: 98.4 ✓ ml
STACK AREA: 121.225 FT^2 EFF. AREA: 121.225 FT^2	

EQUIPMENT:

CONTROL BOX NO: 6 PYRO NO.: 12	**EQUIPMENT LEAK CKECKS**
NOZZLE NO.: 6 (0.197) PITOT NO.: 00122	INITIAL: 0.0 CFM@ 15.0 "H_g
THIMBLE HOLDER NO. C PROBE LENGTH: 8' FT	FINAL: 0.0 CFM@ 9.0 ✓ "H_g
METER CALIBRATION: (Y) 1.006 (ΔH) 1.718	PITOT: 0.0 @ 4.0 "H_2O
ASSUMED H_2O: 9.0% % PITOT C_P: 0.84	**PROBE ASSEMBLY CHECKS**
	NOZZLE / PITOT: 1 (≥ 3/4 IN.)
WEATHER: Clear / Sunny	THERMO / PITOT: 2 (≥ 2.0 IN.)
PRESSURE: P_b(" H_g) 30.12 P_g(" H_2O) 0.8 P_s(" H_g) 30.18 ✓	PROBE / PITOT: 3 (≥ 3.0 IN.)
COMMENTS: Sootblowing Run	DAMAGE DURING TEST? No

	TRAVERSE POINT NUMBER	CLOCK TIME (24 HR)	METER READING (FT^3)	ΔP ("H_2O)	ΔH ("H_2O)	STACK TEMP. T_s (°F)	METER TEMP. T_m (°F)	LAST IMP. TEMP. (°F)	VACUUM READING ("H_g)
	1	11:13	224.9	1.35	1.30	304	96	65	7.0
6	2	/	226.8	1.30	1.25	309	97	60	6.5
9	3	/	228.7	1.30	1.25	310	92	59	6.5
12	4	/	230.2	1.20	1.16	305	96	60	6.0
15	5	11:28	232.0	.86	.83	296	96	60	5.0
3	1	11:31	234.1	1.40	1.35	307	98	59	6.5
6	2	/	235.9	1.35	1.30	309	98	58	6.5
9	3	/	237.8	1.25	1.21	310	99	60	6.5
12	4	/	239.6	1.20	1.16	308	99	58	6.5
15	5	11:46	241.4	1.10	1.06	302	100	58	6.0

BEST AVAILABLE COPY

PARTICULATE SAMPLING FIELD [illegible]

	TRAVERSE POINT NUMBER	CLOCK TIME (24 HR)	METER READING (FT^3)	ΔP ("H_2O)	ΔH ("H_2O)	STACK TEMP T_s (°F)	METER TEMP T_m (°F)	LAST IMP. TEMP (°F)	VACUUM READING ("H_g)
3	1	11:47	243.2	1.30	1.25	306	102	60	6.0
6	2		245.3	1.30	1.25	312	100	58	6.5
9	3		246.9	1.20	1.16	312	100	58	6.5
12	4		248.8	1.10	1.06	310	100	58	6.5
15	5	12:02	250.4	.97	.94	302	100	59	6.0
3	1	12:03	252.3	1.30	1.25	309	102	60	6.5
6	2		254.2	1.30	1.25	314	102	58	7.0
9	3		256.1	1.20	1.16	315	102	59	6.5
12	4		257.9	1.15	1.11	314	101	58	6.5
15	5	12:18	259.4	.86	.83	308	102	61	6.0

F-2 BASELINE SULFURIC ACID DATA SHEETS

Sulfuric Acid Mist Field Data Form

Plant	GANNON STATION	Nozzle I.D. No.	6 (0.197)	Dry Gas Meter Volume	
Location	BOILER No. 3	Nozzle Diameter	(0.197)	Final	294.466 Ft³
Date	5-21-98	Pitot Tube No.	00112	Initial	259.816 Ft³
Method No.	8	Pitot Tube (C_p)	0.84	Net	34.650 Ft³ ✓
Run No.	4-5	Probe Length	8'		
Box Operator	Jeff Sellars	Probe Liner Material	GLASS	Equipment Leak Checks	
Probe Operator	STEVE Kelly	Probe Heater Setting	250°F	Initial	0.0 CFM @ 15.0 "Hg
Time - Start	07:56 End: 09:01	Pressure	Pb ("Hg): 29.88 Pg ("H2O): 1.0 Ps ("Hg): 29.95	Final	0.0 CFM @ 8.0 "H2O ✓
Sampling Time	60min	Ambient Temperature	70°F	Pitot Tube	0.0 @ 5.0 "H2O
Min.\ Pt.	3	Assumed Moisture (%)	9.0%		
Meter Box No.	6	Filter Holder No.		Moisture Determination	
Stack Area Ft.²	121.225	Comments		Impinger	72 ml
Meter Cal. (ΔH)	~~1.700~~ 1.718		SOOTBLOWING RUN	Silica Gel	20.8 gm ✓
Meter Cal. (ΔY)	1.006			Total	92.8 ✓

✓ [initials] 5/26/98

Traverse Point No.	Clock Time	Gas Sample Volume (Ft³)	ΔP (In. H_2O)	ΔH (In. H_2O)	Probe Temp. (°F)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Umbilical Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
3 1	07:56	261.7	1.30	1.24	250	293	77	252	58	6.5
6 2		263.4	1.15	1.10	249	293	80	253	54	6.0
9 3		265.1	1.20	1.15	254	293	82	254	55	6.0
12 4		266.8	1.10	1.05	253	293	83	250	56	5.5
15 5	08:11	268.5	.92	.88	250	292	83	250	57	5.0
1	08:14	270.2	1.25	1.19	244	292	82	252	59	5.5
2		271.9	1.20	1.15	245	292	83	249	60	6.0
3		273.7	1.15	1.10	245	292	83	250	59	5.5
4		275.4	1.10	1.05	242	292	83	250	60	6.0
5	8:29	276.9	.94	.90	246	290	83	249	61	5.0

Sulfuric Acid Mist Field Data Form (Continued)

Traverse Point No.	Clock Time	Gas Sample Volume (Ft^3)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Umbilical Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	08:30	278.8	1.30	1.24	248	292	81	254	60	6.0
2		280.5	1.30	1.24	252	293	83	252	61	6.5
3		282.4	1.20	1.15	250	293	83	251	63	6.5
4		284.1	1.20	1.15	252	292	83	250	63	6.5
5	08:45	284.8	1.10	1.05	251	290	83	249	64	6.0
1	08:46	287.6	1.25	1.19	247	294	82	254	64	6.0
2		289.3	1.20	1.15	245	295	82	253	66	6.0
3		291.1	1.30	1.24	246	295	83	250	65	6.0
4		292.2	1.20	1.15	246	294	83	253	64	6.0
5	09:01	294.4	.93	.89	246	292	83	254	62	5.0

Sulfuric Acid Mist Field Data Form

Plant: GANNON STATION
Location: Boiler No. 3
Date: 5-21-98
Method No.: 8
Run No.: ~~AF 5~~ 5-S
Box Operator: Jeff Sellers
Probe Operator: STEVE kelly
Time - Start: 09:44 End: 10:50
Sampling Time: 60 min
Min.\ Pt.: 3
Meter Box No.: 6
Stack Area Ft²: 121.225
Meter Cal. (ΔH): 1.718
Meter Cal. (ΔY): 1.006

Nozzle I.D. No.: 6
Nozzle Diameter: (0.197)
Pitot Tube No.: 00112
Pitot Tube (C_p): 0.84
Probe Length: 8'
Probe Liner Material: GLASS
Probe Heater Setting: 250°F
Pressure: Pb ("Hg): 29.88 Pg ("H2O): 1.0 Ps ("Hg): 29.95 ✓
Ambient Temperature: 76°F
Assumed Moisture (%): 9.0%
Filter Holder No.: N/A
Comments: SOOTBLOWING RUN
PARTLY cloudy

Dry Gas Meter Volume
Final: 339.878 Ft³
Initial: 305.051 Ft³
Net: 34.827 ✓ Ft³

Equipment Leak Checks
Initial: 0.0 CFM @ 15.0 "Hg
Final: 0.0 CFM @ 8.0 ✓ "H2O
Pitot Tube: 0.0 @ 5.0 "H2O

Moisture Determination
Impinger: 78 ml
Silica Gel: 21.2 gm
Total: 99.2 ✓

✓ RAM 5/26/98

Traverse Point No.	Clock Time	Gas Sample Volume (Ft³)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Umbilical Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
										~~6.5~~ 6.5
1	09:44	306.9	1.25	1.19	248	295	84	251	65	6.5
2		308.7	1.30	1.24	250	298	87	250	60	6.0
3		310.5	1.30	1.24	250	297	88	254	63	6.0
4		312.3	1.20	1.15	249	297	89	253	64	6.0
5	09:59	313.8	.83	.79	249	295	90	255	63	4.5
									~~64~~	~~6.0~~
1	10:01	~~314.~~ 315.7	1.30	1.24	248	299	91	253	64	6.0
2		317.4	1.25	1.19	246	297	91	252	61	6.0
3		319.2	1.20	1.15	249	297	92	249	62	6.0
4		320.9	1.20	1.15	247	296	93	256	62	6.0
5	10:16	322.6	1.00	.95	248	295	92	251	65	5.5

Sulfuric Acid Mist Field Data Form (Continued)

Traverse Point No.	Clock Time	Gas Sample Volume (Ft^3)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Umbilical Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	10:18	324.4	1.25	1.19	249	299	90	254	64	6.0
2		326.3	1.00	.95	252	298	92	256	64	5.5
3		327.9	1.10	1.05	250	292	92	252	64	5.0
4		329.6	1.20	1.15	251	297	92	257	65	5.5
5	10:33	331.2	~~.98~~ .93	.89	246	296	92	254	64	5.0
1	10:35	333.0	1.20	1.15	249	296	90	252	63	6.0
2		335.1	1.25	1.19	252	300	92	251	64	6.0
3		336.6	1.20	1.15	250	300	91	253	65	6.0
4		338.3	1.10	1.05	249	300	91	252	62	6.0
5	10:50	339.8	.90	.86	250	300	91	251	65	5.0

Sulfuric Acid Mist Field Data Form

Plant	GANNON STATION
Location	Boiler No. 3
Date	5-21-98
Method No.	8
Run No.	6-S
Box Operator	Jeff Sellars
Probe Operator	STEVE Kelly
Time - Start	End:
Sampling Time	60 min
Min.\ Pt.	3
Meter Box No.	6
Stack Area Ft²	121.225
Meter Cal. (ΔH)	1.718
Meter Cal. (ΔY)	1.006

Nozzle I.D. No.	6
Nozzle Diameter	(0.197)
Pitot Tube No.	00112
Pitot Tube (C_p)	0.84
Probe Length	8'
Probe Liner Material	Glass
Probe Heater Setting	250°F
Pressure	Pb ("Hg): 29.88 Pg ("H20): 1.0 Ps ("Hg): 29.95 ✓
Ambient Temperature	85°F
Assumed Moisture (%)	9.0%
Filter Holder No.	N/A
Comments	PARTLY cloudy
	SOOTBLOWING

Dry Gas Meter Volume

Final	384.717	Ft³
Initial	349.838	Ft³
Net	34.879 ✓	Ft³

Equipment Leak Checks

Initial	0.0 CFM @ 15.0	"Hg
Final	0.0 CFM @ 9.0" ✓	"H2O
Pitot Tube	OOK 5.0"	"H2O

Moisture Determination

Impinger	73	ml
Silica Gel	17.1	gm
Total	90.1 ✓	

✓ RKM 5/26/98

Traverse Point No.	Clock Time	Gas Sample Volume (Ft^3)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Umbilical Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	11:27	351.7	1.20	1.15	254	297	92	259	65	6.5
2		353.5	1.20	1.15	253	303	90	259	63	6.0
3		355.4	1.10	1.05	254	304	89	260	63	5.5
4		357.1	1.10	1.05	255	304	89	260	62	5.5
5	11:42	358.4	.80	.76	252	302	89	260	61	4.5
1	11:44	360.2	1.20	1.15	250	301	~~301~~ 88	254	65	5.5
2		362.0	1.10	1.05	248	302	88	254	62	5.5
3		363.7	1.10	1.05	249	301	88	252	61	5.5
4		365.4	1.10	1.05	249	302	88	253	60	5.5
5	11:59	367.0	.89	.85	249	300	90	254	61	5.0

Sulfuric Acid Mist Field Data Form (Continued)

Traverse Point No.	Clock Time	Gas Sample Volume (Ft^3)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Umbilical Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	12:01	368.8	1.30	1.24	246	302	88	257	61	6.0
2		370.5	1.20	1.15	245	302	89	255	62	6.0
3		372.4	1.20	1.15	247	302	89	252	63	6.0
4		374.1	1.30	1.24	247	301	89	257	63	6.0
5	12:16	375.9	1.10	1.05	247	300	89	252	62	6.0
							0			
1	12:18	377.5	1.30	1.24	246	305	91	251	64	6.5
2		379.4	1.30	1.24	247	304	90	252	63	6.5
3		381.3	1.25	1.19	246	305	90	252	63	6.5
4		383.1	1.20	1.15	247	304	89	256	64	6.5
5	12:33	384.7	.91	.87	245	301	89	257	64	5.0

F-3 BASELINE ORSAT DATA SHEETS

ORSAT DATA AND CALCULATION SHEET

Source GANNON STATION Location BOILER No. 3

Run No.	Date	Gas	Orsat Analysis, Dry Basis (% Volume) 1	2	3	Avg.	Remarks
1-S	5-20-98	CO2	13.6	13.6	13.6	13.6	Fo = 1.14
		O2	5.4	5.4	5.4	5.4	
		CO	0	0	0	0	
		N2	81.0	81.0	81.0	81.0	1.140
2-S	5-20-98	CO2	13.2	13.2	13.2	13.2	Fo = 1.17
		O2	5.4	5.4	5.4	5.4	
		CO	0	0	0	0	
		N2	81.4	81.4	81.4	81.4	1.174
3-S	5-20-98	CO2	13.8	13.8	13.8	13.8	Fo = 1.12
		O2	5.4	5.4	5.4	5.4	
		CO	0	0	0	0	
		N2	80.8	80.8	80.8	80.8	1.123

✓ [illegible] 5/26/98

ORSAT DATA AND CALCULATION SHEET

Source Gannon Station Location Boiler No. 3

Run No.	Date	Gas	Orsat Analysis, Dry Basis (% Volume) 1	2	3	Avg.	Remarks
4-S	5-21-98	CO2	13.6	13.6	13.6	13.6	Fo = 1.14
		O2	5.4	5.4	5.4	5.4	
		CO	0	0	0	0	
		N2	81.0	81.0	81.0	81.0	1.140
5-S	5-21-98	CO2	13.8	13.8	13.8	13.8	Fo = 1.14
		O2	5.2	5.2	5.2	5.2	
		CO	0	0	0	0	
		N2	81.0	81.0	81.0	81.0	~~1.14~~ BAM 1.138
6-S	5-21-98	CO2	13.8	13.8	13.8	13.8	Fo = 1.15
		O2	5.0	5.0	5.0	5.0	
		CO	0	0	0	0	
		N2	81.2	81.2	81.2	81.2	1.152

√ BAM 5/26/98

F-4 BASELINE VISIBLE EMISSIONS DATA SHEETS

TAMPA ELECTRIC
A TECO ENERGY COMPANY

VISIBLE EMISSION OBSERVATION

E-496 R 10/85

SOURCE NAME	SOURCE LOCATION	OBSERVATION DATE	START TIME	STOP TIME
Boiler #3	Gannon Station	5-20-98	0803	0903

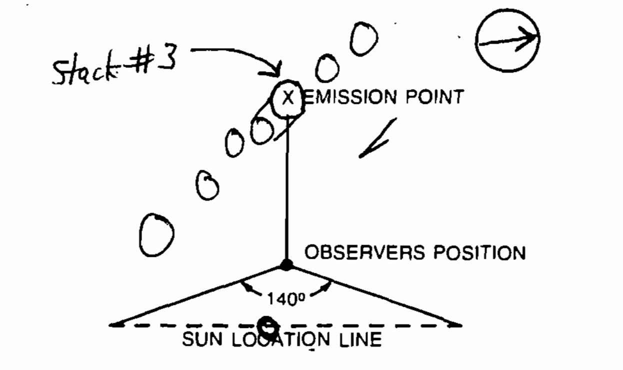
TYPE OF FACILITY: Coal Fired Boiler

DISTANCE FROM OBSERVER: 915 ~~875~~' GN

SKY CONDITIONS/PLUME BACKGROUND: Clear / Blue (Hazy)

SOURCE LAYOUT SKETCH

DRAW NORTH ARROW



AVERAGE OPACITY: 0.0 %

WIND SPEED (EST.)	WIND DIRECTION (EST.)
Calm 1-3 mph	North West

OBSERVER'S NAME (PRINT): Glenn NasLund

OBSERVER'S SIGNATURE	DATE
Glenn Naslund	05-20-98

COMMENTS

WDF Baseline Test

Soot Blowing Run.

Slant angle < 18°.

Note: Observer position on top of Dike around Pond.

COPY OF VISIBLE EMISSIONS CERTIFICATION CARD

5/28/98

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

THIS IS TO CERTIFY THAT

GLENN NASLUND, has completed the STATE OF FLORIDA visible emissions evaluation training and is a qualified observer of visible emissions as specified by EPA reference method 9.

THIS CERTIFICATE EXPIRES Aug 27, 1998

CERTIFICATE OFFICER

BEARER'S SIGNATURE Glenn Naslund

MIN \ SEC	0	15	30	45	MIN \ SEC	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

F-5 BASELINE VOLATILE ORGANICS DATA SHEETS

F.J GANNON STATION UNIT 3 WDF BASELINE TEST 05-21-1998

TIME	CHAN 5 STACK ppmVOC
08:39	1.8
08:40	1.3
08:41	1.1
08:42	0.9
08:43	0.8
08:44	0.7
08:45	0.9
08:46	1.0
08:47	0.9
08:48	0.8
08:49	0.7
08:50	0.6
08:51	0.6
08:52	0.6
08:53	0.5
08:54	0.5
08:55	0.5
08:56	0.5
08:57	0.6
08:58	0.8
08:59	0.8
09:00	0.8
09:01	0.6
09:02	0.8
09:03	0.7
09:04	1.5
09:05	1.5
09:06	1.1
09:07	1.2
09:08	1.2
09:09	1.3
09:10	1.2
09:11	1.2
09:12	1.1
09:13	0.9
09:14	0.9
09:15	0.7
09:16	1.0
09:17	1.1
09:18	1.2
09:19	0.9
09:20	0.8
09:21	1.0
09:22	1.1
09:23	1.2
09:24	1.3
09:25	1.3
09:26	1.4
09:27	1.6
09:28	1.7
09:29	1.7
09:30	1.9
09:31	2.1
09:32	1.5
09:33	1.7

F.J GANNON STATION UNIT 3 WDF BASELINE TEST 05-21-1998

TIME	CHAN 5 STACK ppmVOC
09:34	2.3
09:35	3.3
09:36	2.3
09:37	2.1
09:38	2.4

AVERAGE VALUES FOR THE LAST HOUR: 60 MINUTES OF VALID DATA

09:38	1.2

COMMENTS: END RUN ONE

F.J GANNON STATION UNIT 3 WDF BASELINE TEST 05-21-1998

TIME	CHAN 5 STACK ppmVOC
10:11	1.7
10:12	1.5
10:13	1.6
10:14	1.5
10:15	1.6
10:16	1.7
10:17	1.7
10:18	1.6
10:19	2.0
10:20	2.0
10:21	2.0
10:22	2.0
10:23	2.0
10:24	2.3
10:25	2.8
10:26	2.4
10:27	2.4
10:28	2.3
10:29	2.1
10:30	2.0
10:31	1.9
10:32	1.9
10:33	4.4
10:34	1.1
10:35	2.1
10:36	2.4
10:37	2.3
10:38	2.4
10:39	2.4
10:40	2.2
10:41	2.2
10:42	2.2
10:43	2.2
10:44	2.0
10:45	1.9
10:46	1.7
10:47	1.7
10:48	2.3
10:49	2.4
10:50	1.4
10:51	2.2
10:52	2.0
10:53	2.1
10:54	2.3
10:55	2.3
10:56	2.4
10:57	2.4
10:58	2.4
10:59	2.2
11:00	2.0
11:01	2.0
11:02	2.0
11:03	2.0
11:04	2.1
11:05	2.1

F.J GANNON STATION UNIT 3 WDF BASELINE TEST 05-21-1998

TIME	CHAN 5 STACK ppmVOC
11:06	2.4
11:07	2.3
11:08	2.3
11:09	2.3
11:10	2.3

AVERAGE VALUES FOR THE LAST HOUR: 60 MINUTES OF VALID DATA

11:10	2.1

COMMENTS: END RUN TWO

F.J GANNON STATION UNIT 3 WDF BASELINE TEST 05-21-1998

TIME	CHAN 5 STACK ppmVOC
11:39	2.2
11:40	2.4
11:41	3.2
11:42	2.6
11:43	2.4
11:44	2.2
11:45	2.0
11:46	2.4
11:47	2.3
11:48	1.9
11:49	1.8
11:50	1.6
11:51	1.6
11:52	2.0
11:53	2.0
11:54	1.9
11:55	2.0
11:56	2.3
11:57	2.4
11:58	2.5
11:59	2.6
12:00	2.7
12:01	2.7
12:02	3.2
12:03	2.8
12:04	2.4
12:05	2.5
12:06	2.5
12:07	2.7
12:08	2.8
12:09	2.7
12:10	2.8
12:11	2.9
12:12	3.0
12:13	3.0
12:14	2.8
12:15	2.8
12:16	3.0
12:17	3.3
12:18	2.9
12:19	2.5
12:20	2.7
12:21	2.9
12:22	2.9
12:23	2.9
12:24	3.0
12:25	3.1
12:26	3.1
12:27	3.2
12:28	3.2
12:29	3.2
12:30	3.0
12:31	3.0
12:32	3.2
12:33	3.2

F.J GANNON STATION UNIT 3 WDF BASELINE TEST 05-21-1998

TIME	CHAN 5 STACK ppmVOC
12:34	3.2
12:35	3.2
12:36	2.9
12:37	2.8
12:38	3.3

AVERAGE VALUES FOR THE LAST HOUR: 60 MINUTES OF VALID DATA

12:38	2.7

COMMENTS: END RUN THREE

F-6 BASELINE HYDROGEN CHLORIDE DATA SHEETS

USEPA METHOD 26 HYDROGEN CHLORIDE
FIELD SAMPLING DATA SHEET

Plant Name	F. J. GANNON STATION	Date	5-20-98
Sample Location	BOILER NO. 3 (W/O F BASELINE)	Sample No.	2S
Operator	BRUCE RODRIGUEZ	Probe Length	48"
Barometric Press	29.94 — Ambient Temp 80 °F	Meter Calibration (Y)	1.029
Probe Material	PYREX	Probe Heater Setting	3.5 (235°F)
Control Box No.	8001 — Pyrometer No. 8	Sampling Point	SOUTH PORT
Initial Leak Check	0.000 @ 18" Hg	H_2SO_4 Sample Volume	42 MILS
Final Leak Check	0.000 @ 18" Hg	N_aOH Sample Volume	30 MILS

Sampling Time Minutes	Clock Time 24 Hour	Sample Rate (Rotameter)	Sample Volume (L)	Sample Volume Metered (Vm) Liters	Percent Deviation (a %)	~~Dry Gas~~ PROBE Meter Temp °F	Filter Temp °F	Valve Temp °F
0	0923	3	9979.360	—	—	239	240	240
5	0928	3	9990.740	11.38	—	241	242	242
10	0933	3	0001.180	10.44	-8.26	225	225	225
15	0938	3	0013.660	12.48	19.54	221	225	225
20	0943	3	0025.080	11.42	-8.49	220	221	221
25	0948	3	0036.680	11.60	1.58	220	225	225
30	0953	3	0048.180	11.50	-0.86	222	237	237
35	0958	3	0059.830	11.65	1.30	225	242	242
40	1003	3	0071.350	11.52	-1.12	231	234	234
45	1008	3	0082.980	11.63	0.95	230	237	237
50	1013	3	0094.590	11.61	-0.17	227	238	238
55	1018	3	0106.180	11.59	-0.17	225	240	240
60	1023	3	0117.810	11.63	0.35	225	240	240
Total		3	Total	Vm Average	Avg Dev	Avg Temp	Avg Temp	Avg Temp
	60 mins		138.45	11.54	3.89	227	234	234

a Percent Deviation = $\frac{(Vm - Vm\ Avg)}{Vm\ Avg}$ X 100

h:\shardata\air&wast\testform\method26

USEPA METHOD 26 HYDROGEN CHLORIDE
FIELD SAMPLING DATA SHEET

Plant Name: F. J. GANNON STATION
Date: 5-20-98
Sample Location: BOILER NO. 3 (WDF BASELINE)
Sample No.: 15
Operator: BRUCE RODRIGUEZ
Probe Length: 48"
Barometric Press: 29.94
Ambient Temp: 75°F
Meter Calibration (Y): 1.029
Probe Material: PYREX
Probe Heater Setting: 3.5 (235°F)
Control Box No.: 8001
Pyrometer No.: 8
Sampling Point: SOUTH PORT
Initial Leak Check: 0.00 @ 10" Hg
H_2SO_4 Sample Volume: 39 mls
Final Leak Check: 0.00 @ 10" Hg
N_aOH Sample Volume: 32 mls

Sampling Time Minutes	Clock Time 24 Hour	Sample Rate (Rotameter)	Sample Volume (L)	Sample Volume Metered (Vm) Liters	Percent Deviation (a %)	~~Dry Gas~~ PROBE Meter Temp °F	Filter Temp °F	Valve Temp °F
0	0754	3	9835.410	—	—	244	229	229
5	0759	3	9846.110	10.70	0.00	236	239	239
10	0804	3	9856.810	10.70	0.00	232	240	240
15	0809	3	9867.610	10.80	0.93	228	240	240
20	0814	3	9878.490	10.88	0.74	223	235	235
25	0819	3	9889.360	10.87	-0.09	224	231	231
30	0824	3	9900.300	10.94	0.64	229	239	239
35	0829	3	9911.260	10.96	0.18	230	233	233
40	0834	3	9922.300	11.04	0.73	231	239	239
45	0839	3	9933.330	11.03	-0.09	235	236	236
50	0844	3	9944.360	11.03	0.00	236	239	237
55	0849	3	9955.410	11.05	0.18	230	239	239
60	0854	3	9966.510	11.10	0.45	230	240	240
Total			Total	Vm Average	Avg Dev	Avg Temp	Avg Temp	Avg Temp
	60 mins		131.1	10.92	0.34	231	237	237

a Percent Deviation = $\frac{(Vm - Vm\ Avg)}{Vm\ Avg} \times 100$

USEPA METHOD 26 HYDROGEN CHLORIDE
FIELD SAMPLING DATA SHEET

Plant Name: F. J. GANNON STATION
Date: 5-20-98
Sample Location: BOILER NO. 3 (WOF BASELINE)
Sample No.: 35
Operator: BRUCE RODRIGUEZ
Probe Length: 48"
Barometric Press: 30.12
Ambient Temp: 85°F
Meter Calibration (Y): 1.029
Probe Material: PYREX
Probe Heater Setting: 3.5 (235°F)
Control Box No.: 8007
Pyrometer No.: 8
Sampling Point: SOUTH PORT
Initial Leak Check: 0.000 @ 10" Hg
H_2SO_4 Sample Volume: 42 mls
Final Leak Check: 0.000 @ 10" Hg
NaOH Sample Volume: 32 mls

Sampling Time Minutes	Clock Time 24 Hour	Sample Rate (Rotameter)	Sample Volume (L)	Sample Volume Metered (Vm) Liters	Percent Deviation (a %)	~~Dry Gas~~ Probe Meter Temp °F	Filter Temp °F	Valve Temp °F
0	1043	3	0129.130	—	—	244	240	240
5	1048	3	0140.470	11.34	—	242	240	240
10	1053	3	0151.960	11.49	1.32	239	242	242
15	1058	3	0163.360	11.40	-0.78	237	238	238
20	1103	3	0174.930	11.57	1.49	244	246	246
25	1108	3	0186.300	11.37	-1.73	241	245	245
30	1113	3	0197.810	11.51	1.23	240	241	241
35	1118	3	0209.320	11.51	0.00	247	245	245
40	1123	3	0220.830	11.51	0.00	246	244	244
45	1128	3	0232.410	11.58	0.61	244	241	241
50	1133	3	0243.970	11.56	-0.17	243	247	247
55	1138	3	0255.540	11.57	0.09	241	244	244
60	1143	3	0267.160	11.62	0.43	241	244	244
Total		3	Total	Vm Average	Avg Dev	Avg Temp	Avg Temp	Avg Temp
	60 mins		138.03	11.50	0.71	242	242	242

a Percent Deviation = $\frac{(Vm - Vm\ Avg)}{Vm\ Avg} \times 100$

h:\shardata\air&wast\testform\method26

F-7 BASELINE SULFUR DIOXIDE DATA SHEETS

F.J GANNON STATION UNIT 3 WDF BASELINE TEST 05-20-1998

TIME	CHAN 1 STACK ppmSO2	CHAN 2 STACK %CO2	STACK ℓb SO2 MM-BTU
10:01	721.5	12.49	1.726
10:02	721.2	12.52	1.720
10:03	718.6	12.53	1.714
10:04	717.1	12.54	1.709
10:05	714.8	12.54	1.704
10:06	735.8	12.57	1.750
10:07	775.8	12.59	1.842
10:08	767.0	12.63	1.815
10:09	756.5	12.65	1.787
10:10	749.7	12.57	1.782
10:11	750.4	12.62	1.776
10:12	732.8	12.59	1.739
10:13	716.5	12.57	1.703
10:14	710.6	12.55	1.692
10:15	707.3	12.53	1.686
10:16	706.4	12.53	1.684
10:17	713.3	12.61	1.690
10:18	740.3	12.67	1.745
10:19	796.9	12.68	1.878
10:20	844.4	12.67	1.992
10:21	865.5	12.65	2.044
10:22	832.8	12.68	1.962
10:23	800.6	12.72	1.881
10:24	799.9	12.72	1.878
10:25	810.6	12.71	1.905
10:26	842.5	12.77	1.971
10:27	809.1	12.72	1.900
10:28	760.1	12.68	1.791
10:29	737.0	12.68	1.737
10:30	727.6	12.67	1.716
10:31	722.0	12.64	1.707
10:32	721.5	12.66	1.704
10:33	718.0	12.66	1.694
10:34	717.1	12.66	1.693
10:35	715.3	12.64	1.691
10:36	712.7	12.63	1.686
10:37	723.7	12.63	1.712
10:38	764.0	12.64	1.805
10:39	761.8	12.67	1.797
10:40	740.1	12.67	1.745
10:41	735.8	12.70	1.731
10:42	725.7	12.72	1.704
10:43	712.3	12.70	1.675
10:44	708.9	12.69	1.669
10:45	702.2	12.63	1.661
10:46	696.2	12.58	1.654
10:47	695.8	12.57	1.654
10:48	697.8	12.60	1.655
10:49	704.9	12.66	1.663
10:50	720.5	12.68	1.697
10:51	764.8	12.66	1.805
10:52	805.2	12.68	1.897
10:53	802.4	12.72	1.885
10:54	785.4	12.71	1.847
10:55	798.1	12.72	1.875

F.J GANNON STATION UNIT 3 WDF BASELINE TEST 05-20-1998

TIME	CHAN 1 STACK ppmSO2	CHAN 2 STACK %CO2	STACK ℓb SO2 MM-BTU
10:56	802.9	12.73	1.885
10:57	799.4	12.76	1.873
10:58	791.0	12.83	1.842
10:59	761.1	12.80	1.777
11:00	730.8	12.74	1.714

AVERAGE VALUES FOR THE LAST HOUR: 60 MINUTES OF VALID DATA

11:00	750.3	12.65	1.772

COMMENTS: END RUN TWO

BEST AVAILABLE COPY

F.J GANNON STATION UNIT 3 WDF BASELINE TEST 05-20-1998

TIME	CHAN 1 STACK ppmSO2	CHAN 2 STACK %CO2	STACK ℓb SO2 MM-BTU
11:18	728.8	12.37	1.760
11:19	728.2	12.50	1.741
11:20	727.4	12.55	1.731
11:21	746.4	12.55	1.777
11:22	810.8	12.62	1.919
11:23	867.8	12.65	2.049
11:24	862.1	12.61	2.043
11:25	825.6	12.59	1.959
11:26	805.6	12.58	1.913
11:27	801.4	12.61	1.900
11:28	823.4	12.74	1.931
11:29	831.1	12.82	1.937
11:30	792.4	12.80	1.849
11:31	757.8	12.73	1.778
11:32	741.6	12.72	1.742
11:33	735.7	12.70	1.731
11:34	737.9	12.70	1.736
11:35	737.1	12.69	1.735
11:36	742.6	12.68	1.749
11:37	766.6	12.67	1.808
11:38	761.1	12.66	1.797
11:39	738.0	12.66	1.742
11:40	768.1	12.73	1.803
11:41	792.5	12.77	1.854
11:42	745.4	12.77	1.744
11:43	727.3	12.75	1.704
11:44	746.7	12.76	1.748
11:45	754.2	12.78	1.763
11:46	729.7	12.72	1.714
11:47	719.2	12.69	1.694
11:48	715.9	12.71	1.683
11:49	714.9	12.71	1.681
11:50	715.3	12.74	1.678
11:51	720.8	12.78	1.686
11:52	752.5	12.77	1.761
11:53	789.3	12.75	1.849
11:54	824.3	12.74	1.934
11:55	844.1	12.76	1.977
11:56	831.9	12.78	1.946
11:57	814.3	12.77	1.906
11:58	805.5	12.76	1.886
11:59	808.6	12.78	1.890
12:00	809.2	12.85	1.882
12:01	784.2	12.85	1.824
12:02	761.9	12.76	1.784
12:03	772.5	12.69	1.819
12:04	789.4	12.64	1.867
12:05	814.8	12.63	1.927
12:06	853.6	12.67	2.013
12:07	849.1	12.71	1.997
12:08	802.6	12.67	1.893
12:09	759.3	12.68	1.790
12:10	738.1	12.71	1.735
12:11	756.5	12.73	1.776
12:12	785.0	12.75	1.840

F.J GANNON STATION UNIT 3 WDF BASELINE TEST 05-20-1998

TIME	CHAN 1 STACK ppmSO2	CHAN 2 STACK %CO2	STACK ℓb SO2 MM-BTU
12:13	753.0	12.78	1.760
12:14	734.1	12.79	1.716
12:15	789.5	12.85	1.836
12:16	801.5	12.84	1.865
12:17	758.6	12.76	1.777

AVERAGE VALUES FOR THE LAST HOUR: 60 MINUTES OF VALID DATA

12:17	775.0	12.71	1.822

COMMENTS: END RUN THREE

F.J GANNON STATION UNIT 3 WDF BASELINE TEST 05-20-1998

TIME	CHAN 1 STACK ppmSO2	CHAN 2 STACK %CO2	STACK ℓb SO2 MM-BTU
12:35	753.5	12.47	1.805
12:36	747.6	12.55	1.780
12:37	732.9	12.60	1.738
12:38	726.2	12.62	1.719
12:39	727.3	12.63	1.720
12:40	722.9	12.63	1.710
12:41	718.9	12.65	1.698
12:42	738.6	12.65	1.744
12:43	778.1	12.63	1.841
12:44	750.9	12.63	1.777
12:45	725.0	12.63	1.716
12:46	751.6	12.64	1.777
12:47	787.1	12.73	1.847
12:48	772.8	12.75	1.812
12:49	741.7	12.69	1.747
12:50	724.8	12.64	1.713
12:51	720.0	12.68	1.697
12:52	721.3	12.66	1.702
12:53	726.3	12.69	1.710
12:54	748.0	12.70	1.760
12:55	806.0	12.70	1.897
12:56	860.7	12.69	2.027
12:57	891.1	12.69	2.099
12:58	876.8	12.71	2.062
12:59	819.1	12.69	1.929
13:00	788.8	12.67	1.860
13:01	798.1	12.67	1.882
13:02	861.8	12.71	2.026
13:03	846.3	12.78	1.979
13:04	777.5	12.78	1.818
13:05	739.3	12.71	1.738
13:06	723.4	12.65	1.709
13:07	720.6	12.66	1.701
13:08	726.4	12.67	1.713
13:09	730.5	12.70	1.718
13:10	738.5	12.74	1.732
13:11	734.1	12.73	1.723
13:12	720.9	12.73	1.693
13:13	732.5	12.71	1.722
13:14	782.2	12.72	1.837
13:15	764.4	12.76	1.791
13:16	719.5	12.73	1.689
13:17	725.5	12.74	1.701
13:18	756.6	12.83	1.762
13:19	748.2	12.80	1.747
13:20	729.3	12.72	1.713
13:21	720.2	12.69	1.696
13:22	716.9	12.68	1.689
13:23	719.4	12.71	1.692
13:24	723.9	12.74	1.697
13:25	737.0	12.75	1.727
13:26	776.1	12.76	1.817
13:27	806.7	12.74	1.891
13:28	823.0	12.73	1.932
13:29	813.5	12.76	1.904

F.J GANNON STATION UNIT 3 WDF BASELINE TEST 05-20-1998

TIME	CHAN 1 STACK ppmSO2	CHAN 2 STACK %CO2	STACK ℓb SO2 MM-BTU
13:30	797.7	12.78	1.865
13:31	785.4	12.77	1.837
13:32	779.9	12.77	1.825
13:33	828.2	12.82	1.930
13:34	851.8	12.85	1.981

AVERAGE VALUES FOR THE LAST HOUR: 60 MINUTES OF VALID DATA

13:34	763.6	12.70	1.796

COMMENTS: END RUN FOUR

F-8 FUEL BLEND PARTICULATE DATA SHEETS

BEST AVAILABLE COPY

PARTICULATE SAMPLING FIELD DATA SHEET

SAMPLING LOCATION: Gannon Station No. 3
TEST METHOD: USEPA Method 17
OPERATOR:
CONTROL BOX: Jeff Sellars
SAMPLE PROBE: Steve Kelly
DATE: 5-13-98 **RUN NO.:** 1-S **MIN / PT.:** 3
TIME START: 0700 **END:** 08:04 **TOTAL:** 60 min
STACK DIMENSIONS: 12.4237 FT ID
STACK AREA: 121.225 FT^2 **EFF. AREA:** 121.225 ✓ FT^2

DRY GAS METER VOLUME
FINAL: 870.954 FT^3
INITIAL: 835.598 FT^3
NET: 35.356 ✓ FT^3

MOISTURE DETERMINATION
IMPINGER: ~~68~~ 78 ml
SILICA GEL: 10.9 ml
TOTAL: 88.9 ✓ ml

EQUIPMENT:
CONTROL BOX NO: 6 **PYRO NO.:** 12
NOZZLE NO.: 6 (0.197) **PITOT NO.:** 00122
THIMBLE HOLDER NO. C **PROBE LENGTH:** 6 FT
METER CALIBRATION: (Y) 1.006 (ΔH) 1.718
ASSUMED H_2O: 9.0 % **PITOT C_P:** 0.84
WEATHER: Clear
PRESSURE: P_b(" H_g) 29.78 P_g(" H_2O) 1.3" P_s(" H_g) 29.88 ✓
COMMENTS: Positive Pressure Stack / Sootblowing Run

EQUIPMENT LEAK CKECKS
INITIAL: 0.0 CFM@ 15 ✓" H_g
FINAL: 0.0 CFM@ 10.0 ✓" H_g
PITOT: 0.0 @ 5.0 ✓" H_2O

PROBE ASSEMBLY CHECKS
NOZZLE / PITOT: 1 (≥ 3/4 IN.)
THERMO / PITOT: 2 (≥ 2.0 IN.)
PROBE / PITOT: 3 (≥ 3.0 IN.)
DAMAGE DURING TEST? No

5/26/98

	TRAVERSE POINT NUMBER	CLOCK TIME (24 HR)	METER READING (FT^3)	ΔP (" H_2O)	ΔH (" H_2O)	STACK TEMP. T_s (°F)	METER TEMP. T_m (°F)	LAST IMP. TEMP. (°F)	VACUUM READING (" H_g)
3	1	0700	837.9	1.30	1.20	300	74	58	8.5
	2		839.0	1.30	1.20	302	79	58	6.5
9	3		841.1	1.20	1.10	300	82	60	6.5
12	4		843.4	1.10	1.01	298	82	63	6.0
15	5	0715	844.9	0.82	0.75	286	81	63	5.0
3	1	0716	846.6	1.30	1.20	299	82	62	6.5
6	2		848.5	1.25	1.15	301	82	63	6.5
9	3		850.3	1.30	1.20	299	83	64	6.5
12	4		852.1	1.20	1.10	297	84	65	6.0
15	5	0731	853.6	1.05	0.97	293	83	65	6.0

BEST AVAILABLE COPY

PARTICULATE SAMPLING FIELD DATA SHEET

	TRAVERSE POINT NUMBER	CLOCK TIME (24 HR)	METER READING (FT^3)	ΔP ("H_2O)	ΔH ("H_2O)	STACK TEMP. T_s (°F)	METER TEMP. T_m (°F)	LAST IMP. TEMP. (°F)	VACUUM READING ("H_g)
3	1	0732	855.5	1.25	1.15	295	81	66	6.5
6	2		857.2	1.30	1.20	301	83	67	6.5
9	3		859.1	1.30	1.20	301	84	67	6.5
12	4		860.8	1.10	1.01	299	84	65	6.0
15	5	0747	862.3	0.95 ~~1.05~~ jdt	0.87 ~~0.97~~ jdt	290	84	66	5.5
3	1	0748	863.7	1.35	1.24	302	83	66	6.0
6	2		865.6	1.30	1.20	302	84	65	6.5
9	3		866.9	1.20	1.10	301	85	66	6.5
12	4		869.4	1.10	1.01	299	85	65	6.0
15	5	8:04	870.9	0.86	0.79	295	84	65	5.0

h:\shardata\air&wast\testform\method17 RUN NO. 1-S

PAGE 2 OF 2

BEST AVAILABLE COPY

PARTICULATE SAMPLING FIELD DATA SHEET

SAMPLING LOCATION: Gannon Station No. 3

TEST METHOD: USEPA Method 17

OPERATOR:

CONTROL BOX: Jeff Sellars

SAMPLE PROBE: Steve Kelly

DATE: 5-13-98 RUN NO.: 2-5 MIN / PT.: 3

TIME START: 0845 END: 0948 TOTAL: 60 min

STACK DIMENSIONS: 12.4237 FT ID

STACK AREA: 121.225 FT² EFF. AREA: 121.225 FT²

DRY GAS METER VOLUME

FINAL: 906.462 FT³

INITIAL: 871.340 FT³

NET: 35.122 ✓ FT³

MOISTURE DETERMINATION

IMPINGER: 83 ml

SILICA GEL: 8.3 ml

TOTAL: 91.3 ✓ ml

EQUIPMENT:

CONTROL BOX NO: 6 PYRO NO.: 12

NOZZLE NO.: 6 (0.197) PITOT NO.: 00122

THIMBLE HOLDER NO. B PROBE LENGTH: 6 FT

METER CALIBRATION: (Y) 1.006 (ΔH) 1.718

ASSUMED H_2O: 9.0% % PITOT C_P: 0.84

WEATHER: Clear

PRESSURE: P_b ("H_g) 29.78 P_g ("H_2O) 1.3" P_s ("H_g) 29.88

COMMENTS: Positive stack / sootblowing run

EQUIPMENT LEAK CKECKS

INITIAL: 0.0 CFM@ 15.0 "H_g

FINAL: 0.0 CFM@ 6.0 ✓ "H_g

PITOT: 0.0 @ 5.0 "H_2O

PROBE ASSEMBLY CHECKS

NOZZLE / PITOT: 1 (≥ 3/4 IN.)

THERMO / PITOT: 2 (≥ 2.0 IN.)

PROBE / PITOT: 3 (≥ 3.0 IN.)

DAMAGE DURING TEST? No

5/20/98

	TRAVERSE POINT NUMBER	CLOCK TIME (24 HR)	METER READING (FT^3)	ΔP ("H_2O)	ΔH ("H_2O)	STACK TEMP. T_s (°F)	METER TEMP. T_m (°F)	LAST IMP. TEMP. (°F)	VACUUM READING ("H_g)
	1	0845	873.1	1.30	1.20	295	80	62	6.5
6	2		875.1	1.20	1.10	299	83	60	6.0
9	3		876.9	1.20	1.10	298	84	60	6.0
12	4		878.5	1.15	1.06	297	86	64	6.0
15	5	0900	879.9	0.72	0.66	290	87	64	4.0
3	1	0901	881.3	1.30	1.20	295	86	61	5.5
6	2		882.8	1.20	1.10	302	87	59	6.0
9	3		884.2	1.10	1.01	300	88	62	6.0
12	4		886.9	1.10	1.01	298	88	61	6.0
15	5	0916	888.6	1.05	0.97	299	88	60	6.0

h:\shardata\air&wast\testform\method17

BEST AVAILABLE COPY

PARTICULATE SAMPLING FIELD DATA SHEET

	TRAVERSE POINT NUMBER	CLOCK TIME (24 HR)	METER READING (FT^3)	ΔP ("H_2O)	ΔH ("H_2O)	STACK TEMP. T_s (°F)	METER TEMP. T_m (°F)	LAST IMP. TEMP. (°F)	VACUUM READING ("H_g)
3	1	0917	890.4	1.30	1.20	290	88	59	6.5
6	2		892.2	1.25	1.20	300	89	59	6.5
9	3		893.6	1.30	1.25	299	89	58	6.5
12	4		895.5	1.20	1.15	297	89	61	6.0
15	5	0932	897.4	1.10	1.05	291	90	62	6.0
3	1	0933	899.4	1.35	1.29	298	89	62	6.0
6	2		900.8	1.30	1.25	303	90	58	6.0
9	3		~~902.1~~ 902.1	1.20	1.15	300	90	57	6.5
12	4		904.8	1.20	1.15	299	90	58	6.5
15	5	0948	906.462	0.87	0.83	288	90	58	5.0

h:\shardata\air&wast\testform\method17 RUN NO. 2-S

BEST AVAILABLE COPY

PARTICULATE SAMPLING FIELD DATA SHEET

SAMPLING LOCATION: GANNON STATION No. 3
TEST METHOD: USEPA METHOD 17
OPERATOR:
CONTROL BOX: Jeff Sellars
SAMPLE PROBE: STEVE Kelly
DATE: 5-13-98 RUN NO.: 3-S MIN / PT.: 3
TIME START: 10:24 END: 11:28 TOTAL: 60 min
STACK DIMENSIONS: 12.4237 FT ID
STACK AREA: 121.225 FT² EFF. AREA: 121.225 FT²

EQUIPMENT:
CONTROL BOX NO: 6 PYRO NO.: 12
NOZZLE NO.: 6 (0.197) PITOT NO.: 00122
THIMBLE HOLDER NO. A PROBE LENGTH: 6 FT
METER CALIBRATION: (Y) 1.006 (ΔH)
ASSUMED H_2O: 9.0% % PITOT C_P: 0.84
WEATHER: CLEAR
PRESSURE: P_b(" H_g) 29.90 P_g(" H_2O) 1.3 P_s(" H_g) 30.00 ✓
COMMENTS: SOOTBLOWING RUN

DRY GAS METER VOLUME
FINAL: 941.593 FT³
INITIAL: 906.432 FT³
NET: 35.161 ✓ FT³

MOISTURE DETERMINATION
IMPINGER: 86 ml
SILICA GEL: 7.5 ml
TOTAL: 93.5 ✓ ml

EQUIPMENT LEAK CKECKS
INITIAL: 0.0 CFM@ 15.0 " H_g
FINAL: 0.0 CFM@ 8.0 ✓" H_g
PITOT: 0.0 @ 5.0 " H_2O

PROBE ASSEMBLY CHECKS
NOZZLE / PITOT: 1 (≥ 3/4 IN.)
THERMO / PITOT: 2 (≥ 2.0 IN.)
PROBE / PITOT: 3 (≥ 3.0 IN.)
DAMAGE DURING TEST? NO

✓ BAM 5/24/98

	TRAVERSE POINT NUMBER	CLOCK TIME (24 HR)	METER READING (FT^3)	ΔP (" H_2O)	ΔH (" H_2O)	STACK TEMP. T_s (°F)	METER TEMP. T_m (°F)	LAST IMP. TEMP. (°F)	VACUUM READING (" H_g)
	1	10:24	908.6	1.20	1.15	289	85	65	6.0
6	2		910.4	1.20	1.15	290	87	63	6.5
9	3		912.1	1.30	1.24	304	89	62	6.0
12	4		914.4	1.20	1.15	299	90	64	6.0
15	5	10:39	915.2	0.82	0.78	281	91	56	5.0
3	1	10:40	916.9	1.20	1.15	296	91	59	6.0
6	2		918.7	1.30	1.24	301	91	58	6.0
SP → 9	3		920.4	1.30	1.25	302	96	62	6.5
12	4		922.1	1.30	1.25	299	96	61	6.5
15	5	10:55	924.3	0.96	0.93	293	92	62	5.5

BEST AVAILABLE COPY

PARTICULATE SAMPLING FIELD DATA SHEET

	TRAVERSE POINT NUMBER	CLOCK TIME (24 HR)	METER READING (FT^3)	ΔP ($" H_2O$)	ΔH ($" H_2O$)	STACK TEMP. T_s (°F)	METER TEMP. T_m (°F)	LAST IMP. TEMP. (°F)	VACUUM READING ($" H_g$)
3	1	10:57	926.1	1.20	1.16	296	91	62	6.0
6	2		927.8	1.20	1.16	308	91	60	6.0
9	3		929.4	1.20	1.16	301	93	61	6.0
12	4		931.2	1.10	1.06	299	92	63	6.0
15	5	11:12	933.0	0.95	0.92	294	92	62	5.5
3	1	11:13	934.8	1.20	1.16	299	91	62	6.0
6	2		936.5	1.20	1.16	303	92	61	6.0
9	3		938.3	1.20	1.16	303	93	60	6.0
12	4		940.1	1.10	1.06	301	94	64	6.0
15	5	11:28	941.593	0.84	0.81	295	94	64	5.0

F-9 FUEL BLEND SULFURIC ACID MIST DATA SHEETS

Sulfuric Acid Mist Field Data Form

Plant	GANNON STATION
Location	BOILER NO. 3
Date	5-13-98
Method No.	8
Run No.	S-5
Box Operator	Jeff Sellars
Probe Operator	STEVE Kelly
Time - Start	14:47 End: 15:53
Sampling Time	60 min.
Min.\ Pt.	3
Meter Box No.	6
Stack Area Ft²	121.225
Meter Cal. (ΔH)	1.718
Meter Cal. (ΔY)	1.006

Nozzle I.D. No.	6 (0.197)
Nozzle Diameter	(0.197)
Pitot Tube No.	00122
Pitot Tube (C_p)	0.84
Probe Length	8.0'
Probe Liner Material	GLASS
Probe Heater Setting	250°F
Pressure	Pb ("Hg): 29.90 Pg ("H20): 1.3 Ps ("Hg): 30.00
Ambient Temperature	95°F
Assumed Moisture (%)	9.0%
Filter Holder No.	~~002~~ 9.8
Comments	CLEAR SOOTBLOWING RUN

Dry Gas Meter Volume

Final	021.808	Ft³
Initial	986.029	Ft³
Net	35.779	Ft³

Equipment Leak Checks

Initial	0.0 CFM @ 15.0 "Hg
Final	0.0 CFM @ 8.0 "H20
Pitot Tube	0.0 @ 5.0" "H20

Moisture Determination

Impinger	68	ml
Silica Gel	16.5	gm
Total	84.5	

✓ RAM 5/20/98

Traverse Point No.	Clock Time	Gas Sample Volume (Ft³)	ΔP (In. H_2O)	ΔH (In. H_2O)	Probe Temp. (°F)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Umbilical Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
3 1	14:47	989.1	1.20	1.16	264	301	88	258	67	5.5
6 2		990.8	1.10	1.06	265	303	90	259	62	6.5
9 3		992.7	1.00	0.96	263	304	92	258	64	5.5
12 4		994.3	~~1.00~~ 1.00	~~0.85~~ 0.96	264	303	91	256	65	5.0
15 5	15:02	995.9	0.88	0.85	262	303	92	257	64	5.0
3 1	15:03	997.6	1.20	1.16	257	302	90	255	65	8.0
6 2		999.4	1.10	1.06	260	302	91	257	64	5.5
9 3		001.2	1.20	1.16	260	303	91	258	63	5.5
12 4		002.9	1.10	1.06	259	302	92	260	65	5.5
15 5	15:18	004.3	0.86	0.83	258	299	92	259	66	5.0

Sulfuric Acid Mist Field Data Form (Continued)

	Traverse Point No.	Clock Time	Gas Sample Volume (Ft^3)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Umbilical Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
3	1	15:21	006.2	1.30	1.25	263	302	92	259	65	6.0
6	2		007.9	1.20	1.16	263	302	92	260	65	6.0
9	3		009.7	1.20	1.16	263	302	93	256	65	6.0
12	4		011.4	1.10	1.06	265	302	93	260	64	6.0
15	5	15:36	013.1	1.10	1.06	265	299	94	261	65	5.5
3	1	15:38	014.9	1.30	1.25	262	308	92	259	66	5.5
6	2		016.6	1.20	1.16	260	303	93	260	65	6.0
9	3		018.4	1.20	1.16	261	302	94	258	67	6.0
12	4		020.6	1.30	1.25	256	302	94	259	67	6.0
15	5	15:53	021.8	0.86	0.83	257	300	94	258	66	5.0

Sulfuric Acid Mist Field Data Form

Plant	GANNON STATION	Nozzle I.D. No.	6	Dry Gas Meter Volume	
Location	BOILER NO. 3	Nozzle Diameter	(0.197)	Final	064.592 Ft³
Date	5-13-98	Pitot Tube No.	00122	Initial	030.565 Ft³
Method No.	8	Pitot Tube (C_p)	0.84	Net	34.027 ✓ Ft³
Run No.	6-S	Probe Length	8'		
Box Operator	Jeff Sellars	Probe Liner Material	GLASS	Equipment Leak Checks	
Probe Operator	STEVE Kelly	Probe Heater Setting	250	Initial	0.0 CFM @ 15.0 "Hg
Time - Start	16:43 End: 17:49	Pressure	✓ Pb ("Hg): 29.90 Pg ("H2O): 1.3 Ps ("Hg): 30.00	Final	0.0 CFM @ 8.0 ✓ "H2O
Sampling Time	60 MIN	Ambient Temperature	87	Pitot Tube	0.0 @ 5.0" "H2O
Min.\ Pt.	3	Assumed Moisture (%)	9.0%		
Meter Box No.	6	Filter Holder No.	N/A	Moisture Determination	
Stack Area Ft²	121.225	Comments	Clear	Impinger	78 ml
Meter Cal. (ΔH)	1.718		SOOTBLOWING RUN	Silica Gel	18.6 gm
Meter Cal. (ΔY)	1.006			Total	96.6 ✓

✓ [illegible] 5/26/98

	Traverse Point No.	Clock Time	Gas Sample Volume (Ft³)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Umbilical Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
3	1	16:43	032.4	1.20	1.16	260	304	87	260	63	6.0
6	2		034.2	1.20	1.16	258	305	88	259	64	6.0
9	3		036.0	1.30	1.25	259	304	92	257	64	6.0
12	4		038.1	1.20	1.16	256	303	90	258	63	6.0
15	5	16:58	039.3	0.86	0.83	256	301	93	260	63	5.0
										[illegible]	
3	1	17:00	041.1	1.30	1.25	254	303	92	254	64	5.5
6	2		042.8	1.20	1.16	257	304	90	259	61	5.5
9	3		044.0	1.30	1.25	256	304	89	254	62	6.0
12	4		046.4	1.20	1.16	258	305	89	255	62	6.0
15	5	17:15	048.0	1.00	0.96	256	301	89	256	63	5.0

Sulfuric Acid Mist Field Data Form (Continued)

Traverse Point No.	Clock Time	Gas Sample Volume (Ft^3)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Umbilical Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	17:16	049.7	1.20	1.16	254	300	88	258	62	5.5
2		051.5	1.20	1.16	260	305	88	253	62	5.5
3		053.2	1.10	1.06	258	304	88	257	61	5.5
4		055.0	1.10	1.06	259	304	88	254	60	5.5
5	17:31	056.5	0.87	0.84	262	302	88	253	60	5.0
1	17:34	058.3	1.40	1.35	264	306	88	255	65	6.5
2		060.3	1.40	1.35	266	306	89	258	65	6.5
3		062.4	0.75	0.72	264	306	88	257	64	4.0
4		063.1	0.75	0.72	266	306	88	257	62	4.5
5	17:49	064.5	0.70	0.68	261	302	89	259	65	4.5

Sulfuric Acid Mist Field Data Form

Plant	GANNON STATION	Nozzle I.D. No.	6 (0.197)	Dry Gas Meter Volume	
Location	BOILER No. 3	Nozzle Diameter	(0.197)	Final	109.288 Ft³
Date	5-13-98	Pitot Tube No.	00122	Initial	074.513 Ft³
Method No.	8	Pitot Tube (C_p)	0.84	Net	34.775 ✓ Ft³
Run No.	7-S	Probe Length	8.0'		
Box Operator	Jeff Sellars	Probe Liner Material	Glass	Equipment Leak Checks	
Probe Operator	STEVE Kelly	Probe Heater Setting	✓ 250°F	Initial	0.0 CFM @ 15.0 "Hg
Time - Start	19:45 End: 20:51	Pressure	✓ Pb ("Hg): 29.90 Pg ("H2O): 1.3 Ps ("Hg): 30.00	Final	0.0 CFM @ 12.0 "H2O
Sampling Time	60 min.	Ambient Temperature	85	Pitot Tube	0.0 @ 5.0" "H2O
Min.\Pt.	3	Assumed Moisture (%)	9.0%		
Meter Box No.	6	Filter Holder No.	N/A	Moisture Determination	
Stack Area Ft²	121.225	Comments	clear	Impinger	79 ml
Meter Cal. (ΔH)	1.718		sootblowing run	Silica Gel	16.6 gm
Meter Cal. (ΔY)	1.006			Total	95.6 ✓

✓ BAM 5/26/98

	Traverse Point No.	Clock Time	Gas Sample Volume (Ft³)	ΔP (In. H_2O)	ΔH (In. H_2O)	Probe Temp. (°F)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Umbilical Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
3	1	19:45	076.4	1.20	1.16	259 ~~25~~	307 ~~298~~	85	253	61	8.0
6	2		78.4	1.40	1.35	258	307	86	255	60	10.0
9	3		80.1	1.20	1.16	256	308	87	255	61	8.0
12	4		81.9	1.20	1.16	254	308	88	255	62	8.0
15	5	20:00	83.4	.88	~~.84~~ .85	254	306	90	257	64	7.5
3	1	20:02	84.2	1.30	1.25	258	306	90	255	66	8.0
6	2		86.9	1.20	1.16	262	306	89	258	65	8.0
9	3		88.7	1.10	1.06	262	307	89	256	67	8.0
12	4		90.4	1.10	1.06	260	306	89	258	67	7.5
15	5	20:17	92.0	.95	.92	261	304	89	258	65	7.0

Sulfuric Acid Mist Field Data Form (Continued)

Traverse Point No.	Clock Time	Gas Sample Volume (Ft^3)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Umbilical Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	20:19	093.8	1.30	1.25	255	306	87	255	62	7.5
2		95.5	1.30	1.25	254	307	87	255	63	7.5
3		97.3	1.35	1.30	256	307	87	257	65	8.0
4		99.0	1.20	1.16	254	307	87	254	66	8.0
5	20:34	100.6	.97	.94	255	305	87	255	66	7.0
1	20:36	102.4	1.30	1.25	255	307	86	259	66	8.0
2		104.2	1.30	1.25	254	307	85	253	63	8.5
3		106.0	1.20	1.16	257	308	86	255	65	8.0
4		107.8	1.30	1.25	260	307	89	258	66	8.0
5	20:51	109.2	.88	.85	259	304	86	259	66	6.5

F-10 FUEL BLEND ORSAT DATA SHEETS

ORSAT DATA AND CALCULATION SHEET

Source GANNON STATION Location BOILER NO. 3

Run No.	Date	Gas	Orsat Analysis, Dry Basis (% Volume)				Remarks
			1	2	3	Avg.	
1-S	5-13-98	CO2	13.2	13.2	13.2	13.2	Samples from method 17 TESTING
		O2	5.0	5.0	5.0	5.0	
		CO	0	0	0	0	
		N2	81.8	81.8	81.8	81.8	
							F_o = 1.2 1.205
2-S	5-13-98	CO2	13.2	13.2	13.2	13.2	METHOD 17
		O2	5.6	5.6	5.6	5.6	
		CO	0	0	0	0	
		N2	81.2	81.2	81.2	81.2	
							F_o = 1.2 1.159
3-S	5-13-98	CO2	14.0	14.0	14.0	14.0	METHOD 17
		O2	5.2	5.2	5.2	5.2	
		CO	0	0	0	0	
		N2	80.8	80.8	80.8	80.8	
							F_o = 1.1 1.121

✓ [initials] 5/26/98

ORSAT DATA AND CALCULATION SHEET

Source GANNON STATION Location BOILER No. 3

Run No.	Date	Gas	Orsat Analysis, Dry Basis (% Volume) 1	2	3	Avg.	Remarks
4-S	5-13-98	CO2	13.4	13.4	13.4	13.4	samples from method 8 testing Fo 1.2 1.157
		O2	5.4	5.4	5.4	5.4	
		CO	0	0	0	0	
		N2	81.2	81.2	81.2	81.2	
5-S	5-13-98	CO2	13.4	13.4	13.4	13.4	method 8 Fo 1.2 1.157
		O2	5.4	5.4	5.4	5.4	
		CO	0	0	0	0	
		N2	81.2	81.2	81.2	81.2	
6-S	5-13-98	CO2	13.2	13.2	13.2	13.2	method 8 F 1.2 1.159
		O2	5.6	5.6	5.6	5.6	
		CO	0	0	0	0	
		N2	81.2	81.2	81.2	81.2	

√ RAM 5/26/98

ORSAT DATA AND CALCULATION SHEET

Source GANNON STATION Location BOILER No. 3

Run No.	Date	Gas	Orsat Analysis, Dry Basis (% Volume) 1	2	3	Avg.	Remarks
7-S	5-13-98	CO_2	13.4	13.4	13.4	13.4	METHOD 8
		O_2	5.0	5.0	5.0	5.0	
		CO	0	0	0	0	
		N_2	81.6	81.6	81.6	81.6	Fo = 1.2 1.187
		CO_2					
		O_2					
		CO					
		N_2					
		CO_2					
		O_2					
		CO					
		N_2					

√ [illegible] 5/20/98

F-11 FUEL BLEND VISIBLE EMISSIONS DATA SHEETS

TAMPA ELECTRIC
A TECO ENERGY COMPANY

VISIBLE EMISSION OBSERVATION

E-496 R 10/85

SOURCE NAME: Boiler #3

SOURCE LOCATION: Gannon Station

OBSERVATION DATE: 05-13-98

START TIME: 0845

STOP TIME: 0945

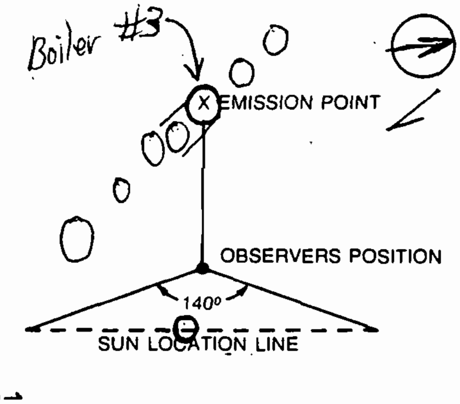
TYPE OF FACILITY: Coal fired Boiler

DISTANCE FROM OBSERVER: 925'

SKY CONDITIONS/PLUME BACKGROUND: Clear to Hazy / Blue

SOURCE LAYOUT SKETCH

DRAW NORTH ARROW



SUN-O- WIND→

AVERAGE OPACITY: 0.0%

WIND SPEED (EST.): 0-3mph; Calm

WIND DIRECTION (EST.): N. West

OBSERVER'S NAME (PRINT): Glenn Naslund

OBSERVER'S SIGNATURE: Glenn Naslund

DATE: 05-13-98

COMMENTS:
WDF Blend Test
Soot-Blowing — max observed Ø%
Slant Angle < 18° — min observed Ø%
max 6 minute average = Ø.0%

COPY OF VISIBLE EMISSIONS CERTIFICATION CARD

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

THIS IS TO CERTIFY THAT

GLENN NASLUND, has completed the STATE OF FLORIDA visible emissions evaluation training and is a qualified observer of visible emissions as specified by EPA reference method 9.

THIS CERTIFICATE EXPIRES Aug 27, 1998

CERTIFICATE OFFICER — BEARER'S SIGNATURE: Glenn Naslund

MIN \ SEC	0	15	30	45	MIN \ SEC	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

F-12 FUEL BLEND VOLATILE ORGANICS DATA SHEETS

F. J. GANNON STATION UNIT 3 WDF BLEND TEST 05-13-1998

TIME	CHAN 5 STACK ppmVOC
13:46	0.9
13:47	0.3
13:48	0.1
13:49	0.1
13:50	0.0
13:51	0.0
13:52	0.0
13:53	0.0
13:54	0.0
13:55	0.0
13:56	0.0
13:57	0.0
13:58	0.0
13:59	0.0
14:00	0.1
14:01	0.2
14:02	0.1
14:03	0.0
14:04	0.1
14:05	0.2
14:06	0.3
14:07	0.4
14:08	0.4
14:09	0.4
14:10	0.4
14:11	0.4
14:12	0.3
14:13	0.3
14:14	0.2
14:15	0.3
14:16	0.3
14:17	0.4
14:18	0.5
14:19	4.0
14:20	5.2
14:21	6.2
14:22	6.7
14:23	7.0
14:24	7.4
14:25	7.7
14:26	8.3
14:27	9.0
14:28	8.8
14:29	8.5
14:30	8.8
14:31	8.6
14:32	7.9
14:33	8.9
14:34	9.9
14:35	7.2
14:36	6.0
14:37	5.7
14:38	5.3
14:39	4.8
14:40	4.7

F. J. GANNON STATION UNIT 3 WDF BLEND TEST 05-13-1998

TIME	CHAN 5 STACK ppmVOC
14:41	4.5
14:42	4.5
14:43	4.5
14:44	4.2
14:45	4.7

AVERAGE VALUES FOR THE LAST HOUR: 60 MINUTES OF VALID DATA

14:45	3.1

COMMENTS: END RUN TWO

F. J. GANNON STATION UNIT 3 WDF BLEND TEST 05-13-1998

TIME	CHAN 5 STACK ppmVOC
15:06	1.3
15:07	1.4
15:08	1.4
15:09	1.9
15:10	3.4
15:11	3.7
15:12	3.5
15:13	3.8
15:14	3.9
15:15	4.0
15:16	4.4
15:17	4.7
15:18	5.6
15:19	7.2
15:20	9.3
15:21	7.3
15:22	2.7
15:23	1.8
15:24	1.7
15:25	1.6
15:26	1.7
15:27	1.4
15:28	1.1
15:29	1.2
15:30	1.0
15:31	0.8
15:32	0.7
15:33	0.7
15:34	0.7
15:35	0.8
15:36	0.7
15:37	0.6
15:38	0.7
15:39	0.9
15:40	0.8
15:41	0.6
15:42	0.6
15:43	0.4
15:44	0.4
15:45	0.4
15:46	0.4
15:47	0.2
15:48	0.1
15:49	0.1
15:50	0.1
15:51	0.0
15:52	0.0
15:53	0.0
15:54	0.0
15:55	0.0
15:56	0.0
15:57	0.0
15:58	0.0
15:59	0.0
16:00	0.0

F. J. GANNON STATION UNIT 3 WDF BLEND TEST 05-13-1998

TIME	CHAN 5 STACK ppmVOC
16:01	0.0
16:02	0.0
16:03	0.0
16:04	0.0
16:05	0.0

AVERAGE VALUES FOR THE LAST HOUR: 60 MINUTES OF VALID DATA

16:05	1.5

COMMENTS: END RUN THREE

F. J. GANNON STATION UNIT 3 WDF BLEND TEST 05-13-1998

TIME	CHAN 5 STACK ppmVOC
18:46	4.9
18:47	5.4
18:48	5.2
18:49	5.1
18:50	5.0
18:51	5.6
18:52	6.2
18:53	6.7
18:54	6.7
18:55	6.9
18:56	7.5
18:57	7.4
18:58	7.1
18:59	7.1
19:00	7.1
19:01	7.0
19:02	7.0
19:03	7.0
19:04	6.9
19:05	6.9
19:06	7.0
19:07	6.9
19:08	6.7
19:09	6.8
19:10	6.7
19:11	6.8
19:12	6.8
19:13	7.0
19:14	7.7
19:15	8.2
19:16	8.0
19:17	7.7
19:18	7.5
19:19	7.7
19:20	7.9
19:21	7.9
19:22	7.9
19:23	8.1
19:24	8.1
19:25	7.5
19:26	7.2
19:27	7.2
19:28	7.1
19:29	7.0
19:30	7.2
19:31	7.5
19:32	7.1
19:33	6.6
19:34	6.5
19:35	6.5
19:36	6.6
19:37	6.3
19:38	6.1
19:39	6.1
19:40	6.0

F. J. GANNON STATION UNIT 3 WDF BLEND TEST 05-13-1998

TIME	CHAN 5 STACK ppmVOC
19:41	6.2
19:42	6.2
19:43	6.0
19:44	6.0
19:45	5.7

AVERAGE VALUES FOR THE LAST HOUR: 60 MINUTES OF VALID DATA

19:45	6.8

COMMENTS: END RUN FIVE

F-13 FUEL BLEND HYDROGEN CHLORIDE DATA SHEETS

USEPA METHOD 26 HYDROGEN CHLORIDE
FIELD SAMPLING DATA SHEET

Plant Name	F.J. GANNON STATION WDF BLEND	Date	5-13-98
Sample Location	BOILER NO 3 STACK	Sample No.	1-S
Operator	BOB BARTHELETTE / BRUCE RODRIGUEZ	Probe Length	48"
Barometric Press	29.78 Ambient Temp 75°F	Meter Calibration (Y)	1.029
Probe Material	PYREX	Probe Heater Setting	3.5 (235°F)
Control Box No.	8001 Pyrometer No. 8	Sampling Point	SOUTH PORT
Initial Leak Check	0.000 @ 10" Hg	H_2SO_4 Sample Volume	42.5
Final Leak Check	0.000 @ 10" Hg	N_aOH Sample Volume	30.0

Sampling Time Minutes	Clock Time 24 Hour	Sample Rate (Rotameter)	Sample Volume (L)	Sample Volume Metered (Vm) Liters	Percent Deviation (a %)	~~Dry Gas~~ PROBE OUT Meter Temp °F	Filter Temp °F	Valve Temp °F
0	0711	3	9361.605	11.595	0.124	245	230	230
5	0716	3	9373.200	11.230	0.120	240	232	232
10	0721	3	9384.430	11.220	0.120	239	232	232
15	0726	3	9395.650	11.440	0.122	237	231	231
20	0731	3	9407.090 (3d)	11.400	0.121	239	227	227
25	0736	3	9418.490	11.160	0.118	238	228	228
30	0741	3	9429.650	11.370	0.121	236	230	230
35	0746	3	9441.020	11.380	0.121	238	228	228
40	0751	3	9452.400	11.400	0.121	238	229	229
45	0756	3	9463.800	11.345	0.120	237	228	228
50	0801	3	9475.145	11.360	0.120	238	229	229
55	0806	3	9486.505	11.465	0.121	239	227	227
60	0811	3	9497.970			238	227	227
Total			Total	Vm Average	Avg Dev	Avg Temp	Avg Temp	Avg Temp
	60 mins		136.365	11.364	0.121	238	229	229

a Percent Deviation = $\frac{(Vm - Vm\ Avg)}{Vm\ Avg}$ X 100

h:\shardata\air&wast\testform\method26

USEPA METHOD 26 HYDROGEN CHLORIDE
FIELD SAMPLING DATA SHEET

Plant Name: F. T. GANNON STATION WDF BLEND
Date: 5-13-98
Sample Location: BOILER NO 3 STACK
Sample No.: 25
Operator: BRUCE RODRIGUEZ/BOB BARTHELESTE
Probe Length: 48"
Barometric Press: 29.78 Ambient Temp: 85°F
Meter Calibration (Y): 1.029
Probe Material: PYREX
Probe Heater Setting: 3.5 (235°F)
Control Box No.: 8001 Pyrometer No.: 8
Sampling Point: SOUTH PORT
Initial Leak Check: 0.000 @ 10" Hg
H_2SO_4 Sample Volume: 44.0
Final Leak Check: 0.000 @ 10" Hg
N_aOH Sample Volume: 31.0

Sampling Time Minutes	Clock Time 24 Hour	Sample Rate (Rotameter)	Sample Volume (L)	Sample Volume Metered (Vm) Liters	Percent Deviation (a %)	~~Dry Gas~~ PROBE DES Meter Temp °F	Filter Temp °F	Valve Temp °F
0	0848	3	9508.730	~~11.260~~ BR	~~0.118~~	227	242	242
5	0853	3	9519.990	~~11.440~~ 11.260	0.118	224	236	236
10	0858	3	9531.430	11.440	0.120	232	234	234
15	0903	3	9542.790	11.360	0.119	236	230	230
20	0908	3	9554.200	11.410	0.120	236	226	226
25	0913	3	9565.650	11.450	~~BR~~ 0.120	237	228	228
30	0918	3	9577.000	11.350	0.119	237	224	224
35	0923	3	9588.550	11.550	0.121	239	226	226
40	0928	3	9599.950	11.400	0.119	238	224	224
45	0933	3	9611.420	11.470	0.119	238	222	222
50	0938	3	9622.830	11.410	0.119	236	221	221
55	0943	3	9634.340	11.510	0.120	238	228	228
60	0948	3	9645.805	11.465	0.119	236	229	229
Total			Total	Vm Average	Avg Dev	Avg Temp	Avg Temp	Avg Temp
	60 mins		137.075					

a Percent Deviation = $\frac{(Vm - Vm\ Avg)}{Vm\ Avg} \times 100$

h:\shardata\air&wast\testform\method26

USEPA METHOD 26 HYDROGEN CHLORIDE
FIELD SAMPLING DATA SHEET

Plant Name	F.J. GANNON STATION WDF BLEND	Date	5-13-98
Sample Location	BOILER No 3 STACK	Sample No.	35
Operator	BRUCE RODRIGUEZ	Probe Length	48"
Barometric Press	29.9 Ambient Temp 85°F	Meter Calibration (Y)	1.029
Probe Material	PYREX	Probe Heater Setting	3.5 (235°F)
Control Box No.	8001 Pyrometer No. 8	Sampling Point	SOUTH PORT
Initial Leak Check	0.000 @ 10" Hg	H_2SO_4 Sample Volume	44
Final Leak Check	0.000 @ 10" Hg	$NaOH$ Sample Volume	~~30.05~~ 30.5 (32)

Sampling Time Minutes	Clock Time 24 Hour	Sample Rate (Rotameter)	Sample Volume (L)	Sample Volume Metered (Vm) Liters	Percent Deviation (a %)	~~Dry Gas~~ PROBE Meter Temp °F	Filter Temp °F	Valve Temp °F
0	1016	3	9659.695	—	—	235	239	239
5	1021	3	9671.540	11.845	0.123	246	232	232
10	1026	3	9683.410	11.870	0.123	235	220	220
15	1031	3	9695.280	11.870	0.123	229	228	228
20	1036	3	9707.170	11.890	0.123	233	240	240
25	1041	3	9718.980	11.810	0.122	237	240	240
30	1046	3	9730.950	11.970	0.123	240	246	246
35	1051	3	9742.800	11.850	0.122	240	238	238
40	1056	3	9754.680	11.880	0.122	240	242	242
45	~~1061~~ 1101 BR	3	9766.640	11.960	0.123	240	239	239
50	1106	3	9778.570	11.930	0.122	236	239	239
55	1111	3	9790.410	11.840	0.121	237	235	235
60	1116	3	9802.340	11.930	0.122	236	233	233
Total			Total	Vm Average	Avg Dev	Avg Temp	Avg Temp	Avg Temp
	60 min		142.645					

a Percent Deviation = $\frac{(Vm - Vm\ Avg)}{Vm\ Avg} \times 100$

h:\shardata\air&wast\testform\method26

F-14 FUEL BLEND SULFUR DIOXIDE DATA SHEETS

F. J. GANNON STATION UNIT 3 WDF BLEND TEST 05-13-1998

TIME	CHAN 1 STACK ppmSO2	CHAN 2 STACK %CO2	STACK ℓb SO2 MM-BTU
06:37	883.1	12.60	2.094
06:38	882.8	12.68	2.081
06:39	859.5	12.75	2.014
06:40	842.8	12.62	1.995
06:41	858.4	12.56	2.042
06:42	885.2	12.57	2.104
06:43	885.5	12.47	2.121
06:44	869.5	12.56	2.069
06:45	868.0	12.74	2.037
06:46	854.5	12.76	2.001
06:47	864.4	12.63	2.046
06:48	892.7	12.66	2.106
06:49	830.9	12.62	1.967
06:50	792.9	12.60	1.881
06:51	792.7	12.66	1.872
06:52	826.2	12.74	1.937
06:53	855.3	12.81	1.995
06:54	836.3	12.76	1.959
06:55	798.5	12.69	1.880
06:56	777.6	12.70	1.829
06:57	786.7	12.70	1.851
06:58	772.1	12.67	1.821
06:59	775.8	12.61	1.838
07:00	795.4	12.59	1.888
07:01	835.9	12.62	1.979
07:02	884.9	12.70	2.081
07:03	923.1	12.79	2.157
07:04	869.4	12.71	2.044
07:05	817.5	12.66	1.930
07:06	816.7	12.59	1.938
07:07	910.0	12.42	2.189
07:08	968.8	12.55	2.306
07:09	961.1	12.64	2.272
07:10	908.5	12.59	2.156
07:11	833.5	12.57	1.982
07:12	772.3	12.53	1.841
07:13	759.2	12.57	1.805
07:14	752.6	12.67	1.775
07:15	747.7	12.61	1.772
07:16	743.4	12.66	1.754
07:17	737.2	12.67	1.738
07:18	766.5	12.66	1.809
07:19	784.1	12.64	1.854
07:20	758.5	12.62	1.795
07:21	744.2	12.59	1.767
07:22	755.2	12.59	1.792
07:23	766.2	12.70	1.802
07:24	762.1	12.75	1.786
07:25	744.2	12.68	1.754
07:26	726.9	12.64	1.718
07:27	732.5	12.69	1.725
07:28	761.3	12.80	1.776
07:29	775.2	12.84	1.805
07:30	794.5	12.85	1.847
07:31	831.7	12.84	1.936

F. J. GANNON STATION UNIT 3 WDF BLEND TEST 05-13-1998

TIME	CHAN 1 STACK ppmSO2	CHAN 2 STACK %CO2	STACK ℓb SO2 MM-BTU
07:32	855.1	12.70	2.011
07:33	871.3	12.60	2.066
07:34	914.5	12.75	2.144
07:35	859.2	12.75	2.013
07:36	788.2	12.71	1.854

AVERAGE VALUES FOR THE LAST HOUR: 60 MINUTES OF VALID DATA

07:36	822.0	12.66	1.940

COMMENTS: END RUN ONE

F. J. GANNON STATION UNIT 3 WDF BLEND TEST 05-13-1998

TIME	CHAN 1 STACK ppmSO2	CHAN 2 STACK %CO2	STACK ℓb SO2 MM-BTU
08:14	737.6	12.53	1.759
08:15	738.0	12.56	1.756
08:16	731.4	12.53	1.744
08:17	741.4	12.56	1.764
08:18	739.5	12.64	1.748
08:19	728.8	12.65	1.721
08:20	730.0	12.65	1.724
08:21	749.3	12.65	1.770
08:22	737.5	12.59	1.751
08:23	715.9	12.50	1.711
08:24	708.2	12.46	1.698
08:25	711.6	12.46	1.707
08:26	716.1	12.55	1.706
08:27	710.2	12.53	1.694
08:28	720.0	12.63	1.703
08:29	721.6	12.70	1.698
08:30	721.0	12.65	1.704
08:31	721.1	12.62	1.708
08:32	728.1	12.63	1.722
08:33	760.7	12.63	1.800
08:34	803.1	12.61	1.902
08:35	821.6	12.58	1.951
08:36	828.3	12.59	1.966
08:37	795.6	12.61	1.884
08:38	748.5	12.64	1.770
08:39	724.4	12.55	1.725
08:40	755.1	12.54	1.799
08:41	761.0	12.62	1.801
08:42	746.4	12.67	1.760
08:43	733.5	12.66	1.732
08:44	734.2	12.67	1.732
08:45	733.5	12.66	1.731
08:46	726.2	12.66	1.714
08:47	717.6	12.61	1.701
08:48	715.4	12.55	1.703
08:49	717.1	12.55	1.707
08:50	718.4	12.61	1.702
08:51	719.4	12.63	1.702
08:52	717.8	12.62	1.699
08:53	715.3	12.60	1.696
08:54	710.9	12.57	1.690
08:55	710.8	12.54	1.693
08:56	717.1	12.61	1.700
08:57	713.6	12.57	1.696
08:58	706.8	12.53	1.686
08:59	699.8	12.49	1.674
09:00	694.0	12.43	1.669
09:01	700.0	12.37	1.691
09:02	703.1	12.43	1.690
09:03	711.3	12.47	1.705
09:04	770.7	12.55	1.834
09:05	811.7	12.58	1.928
09:06	816.9	12.60	1.937
09:07	801.4	12.57	1.905
09:08	748.0	12.52	1.785

F. J. GANNON STATION UNIT 3 WDF BLEND TEST 05-13-1998

TIME	CHAN 1 STACK ppmSO2	CHAN 2 STACK %CO2	STACK ℓb SO2 MM-BTU
09:09	710.6	12.49	1.701
09:10	696.0	12.49	1.665
09:11	715.8	12.51	1.710
09:12	751.0	12.59	1.783
09:13	807.8	12.64	1.909

AVERAGE VALUES FOR THE LAST HOUR: 60 MINUTES OF VALID DATA

09:13	736.6	12.57	1.750

COMMENTS: END RUN TWO

F. J. GANNON STATION UNIT 3 WDF BLEND TEST 05-13-1998

TIME	CHAN 1 STACK ppmSO2	CHAN 2 STACK %CO2	STACK ℓb SO2 MM-BTU
09:48	742.7	12.59	1.763
09:49	744.9	12.62	1.764
09:50	741.1	12.61	1.756
09:51	735.4	12.56	1.749
09:52	726.9	12.55	1.731
09:53	726.8	12.61	1.722
09:54	733.9	12.70	1.727
09:55	740.7	12.77	1.734
09:56	745.1	12.82	1.737
09:57	743.8	12.81	1.735
09:58	750.5	12.80	1.752
09:59	757.2	12.84	1.762
10:00	757.7	12.88	1.758
10:01	743.9	12.79	1.737
10:02	753.7	12.84	1.755
10:03	753.2	12.84	1.753
10:04	737.6	12.73	1.732
10:05	741.9	12.67	1.750
10:06	776.0	12.65	1.834
10:07	802.4	12.62	1.899
10:08	828.4	12.67	1.953
10:09	843.8	12.73	1.981
10:10	818.6	12.67	1.931
10:11	766.4	12.66	1.809
10:12	740.1	12.63	1.752
10:13	751.2	12.63	1.777
10:14	807.9	12.75	1.893
10:15	785.6	12.76	1.840
10:16	758.6	12.71	1.784
10:17	794.4	12.70	1.869
10:18	863.1	12.71	2.029
10:19	856.1	12.60	2.031
10:20	859.4	12.60	2.038
10:21	822.5	12.59	1.952
10:22	773.7	12.54	1.843
10:23	748.7	12.58	1.778
10:24	737.5	12.58	1.752
10:25	761.1	12.62	1.802
10:26	834.6	12.69	1.965
10:27	887.0	12.72	2.083
10:28	873.0	12.71	2.053
10:29	882.7	12.74	2.071
10:30	836.4	12.82	1.949
10:31	802.8	12.85	1.866
10:32	791.6	12.76	1.854
10:33	761.4	12.68	1.795
10:34	734.0	12.65	1.733
10:35	742.3	12.59	1.761
10:36	759.7	12.60	1.801
10:37	757.7	12.59	1.798
10:38	789.8	12.62	1.870
10:39	826.8	12.66	1.951
10:40	846.2	12.73	1.986
10:41	886.3	12.79	2.070
10:42	881.9	12.84	2.053

F. J. GANNON STATION UNIT 3 WDF BLEND TEST 05-13-1998

TIME	CHAN 1 STACK ppmSO2	CHAN 2 STACK %CO2	STACK ℓb SO2 MM-BTU
10:43	878.3	12.78	2.053
10:44	902.9	12.73	2.120
10:45	980.8	12.80	2.290
10:46	948.8	12.84	2.208
10:47	871.2	12.78	2.037

AVERAGE VALUES FOR THE LAST HOUR: 60 MINUTES OF VALID DATA

10:47	795.8	12.70	1.872

COMMENTS: END RUN THREE

APPENDIX G

SAMPLE EQUIPMENT CALIBRATIONS

G-1 BASELINE EQUIPMENT CALIBRATIONS

G-2 FUEL BLEND EQUIPMENT CALIBRATIONS

G-1 BASELINE EQUIPMENT CALIBRATIONS

SUMMARY OF EQUIPMENT CALIBRATIONS

EQUIPMENT	CALIBRATION DATE	LOCATION	METHOD	RESULTS
Method 17 Console 5 Initial Test Post Test	04-06-98 05-22-98	CES CES	Wet Test Meter Wet Test Meter	Y = 1.006 Y = 1.006
Nozzle #6 Initial Measurement Post Test Measurement	04-01-98 05-22-98	CES CES	3 Measurements w/calipers	DN= 0.197 DN= 0.197
Method 26 Console 8001 Initial Test Post Test	04-13-98 05-22-98	CES CES	West Test Meter Wet Test Meter	Y= 1.029 Y= 1.037
Pyrometer No. 12	04-07-98	CES	Comparison to ASTM Thermometer	Correct to ± 2°F
Pitot Tube 00122	04-16-98	CES	EPA Method	CP = 0.84
Wet Test Meter Serial No. 12-AH-4	12-19-97	CES	Liquid Displacement	CF= 0.997
Barometer SN 00224	04-06-98	CES	Comparison to National Weather Services	Correct to ± 0.03" Hg

INITIAL DRY GAS METER AND ORIFICE CALIBRATION

CONTROL BOX NO. 6 BAROMETRIC PRESS. 29.95 IN. HG.

DATE 4-6-98 PERFORMED BY SMK

	RUN 1	RUN 2	RUN 3	RUN 4
VACUUM ("Hg)	2.4	2.5	2.5	3.1
dHw ("H2O)	0.63	1.10	1.60	2.10
dHd ("H2O)	0.50	1.00	1.50	2.00
INITIAL WTM	0.0000	0.0000	0.0000	0.0000
FINAL WTM	6.1100	8.4772	6.7259	7.9169
INITIAL DGM	520.270	526.832	535.875	543.278
FINAL DGM	526.331	535.438	542.816	551.584
TEMP. WTM (F)	70.0	70.0	68.0	68.0
TEMP. DGM (F)	78.0	82.0	89.0	92.0
TEST TIME (MIN.)	15.0	15.0	10.0	10.0

NET VOLUME WTM	6.1100	8.4772	6.7259	7.9169
NET VOLUME DGM	6.061	8.606	6.941	8.306
Y	1.022	1.005	1.004	0.992
dH@	1.665	1.717	1.782	1.706

AVERAGE Y = 1.006

ACCEPTABLE Y RANGE = 0.986 TO 1.026

AVERAGE dH@ = 1.718

ACCEPTABLE dH@ RANGE = 1.568 TO 1.868

Y = (Vw (Pb) x (Td + 460)) / (Vd (Pb + (dHd / 13.6)) x (Tw + 460)

dH@ = 0.0317 x dHd / (Pb (Td + 460)) x ((Tw + 460) x time) / Vw)^2

h:\shardata\source\cals\part\initial\box6\ metcal-i.

RAM 4/30/98

RECHECK OF ORIFICE AND DGM CALIBRATION

CONTROL BOX NO. 6 BAROMETRIC PRESS. 30.01

DATE 5-22-98 PERFORMED BY Sink

LEAK CHECK OF METER SYSTEM ok @ 12.0" PRIOR Y = 1.006

	RUN 1	RUN 2	RUN 3
VACUUM ("Hg)	10.0	10.0	10.0
dHw ("H2O)	1.10	1.10	1.10
dHd ("H2O)	1.00	1.00	1.00
INITIAL WTM	0.0000	8.4285	16.8073
FINAL WTM	8.4285	16.8073	25.1579
INITIAL DGM	401.209	409.786	418.339
FINAL DGM	409.786	418.339	426.888
TEMP. WTM (F)	71.5	71.5	71.5
TEMP. DGM (F)	80.0	82.0	84.0
TEST TIME (MIN.)	15.0	15.0	15.0
NET VOLUME WTM	8.4285	8.3788	8.3506
NET VOLUME DGM	8.577	8.553	8.549
Y	0.996	0.997	0.997
dH@	1.750	1.764	1.770

PRIOR Y = 1.006
RECHECK Y = 0.997
% DIFFERENCE = -0.895

AVERAGE dH@ = 1.762

Y = (Vw (Pb) x (Td + 460)) / (Vd (Pb + (dHd / 13.6)) x(Tw + 460)

dH@ = 0.0317 x dHd / (Pb (Td + 460)) x ((Tw + 460) x time) / Vw)^2

PAM
5/28/98

INITIAL DRY GAS METER CALIBRATION

LOW FLOW SAMPLER

CONTROL BOX NO. 8001 BAROMETRIC PRESS. 30.20 IN. HG.

DATE 4-13-98 PERFORMED BY SmK

RUN NO.	1	2	3
FLOW METER (SS FLOAT)	1.4	1.4	1.4
FINAL READING (DGM)	9300.681	9306.241	9311.799
INITIAL READING (DGM)	9295.065	9300.681	9306.241
TEMPERATURE (DGM) F	87	85	85
FINAL READING (WTM)	0.1969	0.3941	0.5922
INITIAL READING (WTM)	0.0000	0.1969	0.3941
TEMPERATURE (WTM)	71.5	71.5	71.5
dHW (H2O)	0.11	0.12	0.11
NET VOLUME (DGM)	5.616	5.560	5.558
NEY VOLUME (WTM)	0.1969	0.1972	0.1981
METER Y	1.022	1.030	1.035

AVERAGE Y = 1.029

REVIEWED BY: [signature]

DATE: 4/30/98

h:\shardata\source\cals\so2\initial\8001\i-low

FINAL DRY GAS METER CALIBRATION

LOW FLOW SAMPLER

CONTROL BOX NO. 8001 BAROMETRIC PRESS. 30.01 IN. HG.

INITIAL Y 1.029

DATE 5-22-98 PERFORMED BY Sink

RUN NO.	1	2	3
FLOW METER (SS FLOAT)	1.4	1.4	1.4
FINAL READING (DGM)	282.150	287.898	293.695
INITIAL READING (DGM)	276.372	282.150	287.898
TEMPERATURE (DGM) F	77	81	83
FINAL READING (WTM)	0.2081	0.4163	0.6242
INITIAL READING (WTM)	0.0000	0.2081	0.4163
TEMPERATURE (WTM)	71.7	71.7	72.0
dHW (H2O)	0.15	0.14	0.15
NET VOLUME (DGM)	5.778	5.748	5.797
NET VOLUME (WTM)	0.2081	0.2082	0.2079
METER Y	1.031	1.044	1.037

AVERAGE Y = 1.037

INITIAL Y	1.029
FINAL Y	1.037
% DIFF	0.777

GAM 5/28/98

NOZZLE CALIBRATION DATA FORM

NOZZLE SET NO. 1

DATE: 4-1-98 CALIBRATOR: Steven M. Kelly

NOZZLE I. D.	NOZZLE DIAMETER (IN.) D1	D2	D3	D diff.	D avg
#1	0.116	0.112	0.114	0.004	0.114
#4	0.126	0.126	0.126	0.000	0.126
#5	0.15	0.15	0.15	0.000	0.15
#6	0.197	0.197	0.197	0.000	0.197
#9	0.279	0.278	0.278	0.001	0.278
#10	0.295	0.295	0.291	0.004	0.294
#12	0.389	0.391	0.391	0.002	0.390
#15	0.165	0.165	0.165	0.000	0.165
#16	0.199	0.199	0.199	0.000	0.199
#19	0.279	0.278	0.279	0.001	0.279
#22	0.366	0.370	0.366	0.004	0.367
#30	0.314	0.314	0.314	0.000	0.314
#36	0.189	0.189	0.189	0.000	0.189
#37	0.213	0.213	0.213	0.000	0.213
#38	0.252	0.252	0.252	0.000	0.252
#46	0.193	0.193	0.193	0.000	0.193
#47	0.205	0.205	0.205	0.000	0.205
#48	0.253	0.253	0.251	0.002	0.252
#50	0.314	0.314	0.314	0.000	0.314
#58	0.244	0.244	0.244	0.000	0.244
#68	0.244	0.244	0.240	0.004	0.243

where:

D 1,2,3 = three different nozzle diameters,(in); each diameter must be measured to the nearest 0.001 in.

D diff. = maximum difference between any two diameters, (in.) must be .004 in. or less.

D avg. = average of D1, D2, and D3.

REVIEWED BY: BAM
DATE: 5/4/98

PAGE 1 OF 1

h:\shardata\air&wast\cals\nozzles\initial\nozcali.wk4

FINAL NOZZLE CALIBRATION DATA FORM

NOZZLE NO. *6*

DATE: *5-22-98* ***CALIBRATED BY:*** [illegible signature]

NOZZLE IDENTIFICATION	*NOZZLE DIAMETER*			*¼D (IN.)*	*D AVG*
	D1 (IN.)	*D2* (IN.)	*D3* (IN.)		
6	0.197	0.197	0.197	0	0.197

where:

D1,2,3= three different nozzle diameters,(in); each diameter must be measured to the nearest 0.001 in.

¼D= maximum difference between any two diameters,(in.).
¼D¥ 0.004 in.

D AVG= average of D1,D2 and D3.

h:\shardata\air&wast\cals\nozzles\posttest\nozcalf.

Reviewed By: [illegible initials]
Date: 5/28/98

BAROMETER CALIBRATION DATA FORM

DATE: 4-6-98 CALIBRATOR: [signature]

INST. NO: 224

COMMENTS: Readings Compared to The National Weather Service, Ruskin FL.

TIME OF READING	BAROMETER READING (HG")	REFERENCE STANDARD READING (HG")	DIFFERENCE (HG")
13:58	29.92	29.95	-0.03
10:49	30.00	30.00	0.00
			0.00
			0.00
			0.00
			0.00

*NOTE: BAROMETRIC READINGS MUST AGREE WITHIN 0.1 INCHES HG OF READINGS OBTAINED FROM THE REFERENCE STANDARD, THE NATIONAL WEATHER SERVICE, RUSKIN FL. TO BE DEEMED ACCEPTABLE.

REVIEWED BY: [signature]
DATE: 4/30/98

h:\shardata\source\cals\baromete\00224

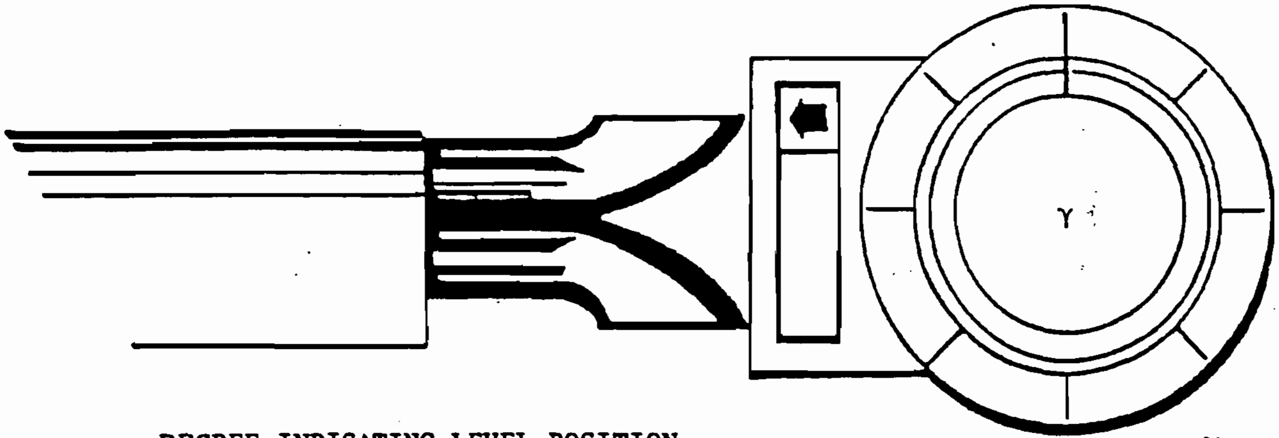
REVISED 5-9-96

BEST AVAILABLE COPY

SERIAL NO. 00[illegible]2

CALIBRATED BY SMK

DATE 4-16-98



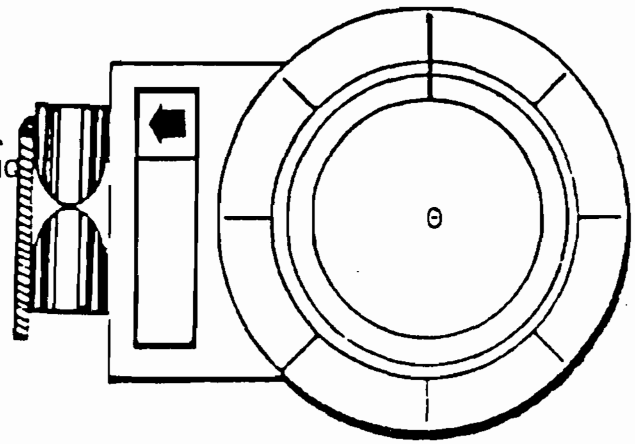
DEGREE INDICATING LEVEL POSITION
FOR DETERMINING γ, THEN CALCULATING Z.

γ = ~~.950~~ 1.5° SMK

A = DISTANCE BETWEEN TIPS, $(P_a + P_b)$, cm. = 2.345.

Z = A sin γ = 0.06 cm; (<0.32 cm).

DEGREE INDICATING LEVEL
POSITION FOR DETERMINING
Θ, THEN CALCULATING W.



Θ = 1.0 °

W = A sin Θ = 0.04 cm; (<0.08 cm).

PITOT TUBE CALIBRATION: A, W, γ, Θ and Z DETERMINATION

Reviewed By: [signature]
Date: 4/30/98

SERIAL NO. DO1

CALIBRATED BY SmK

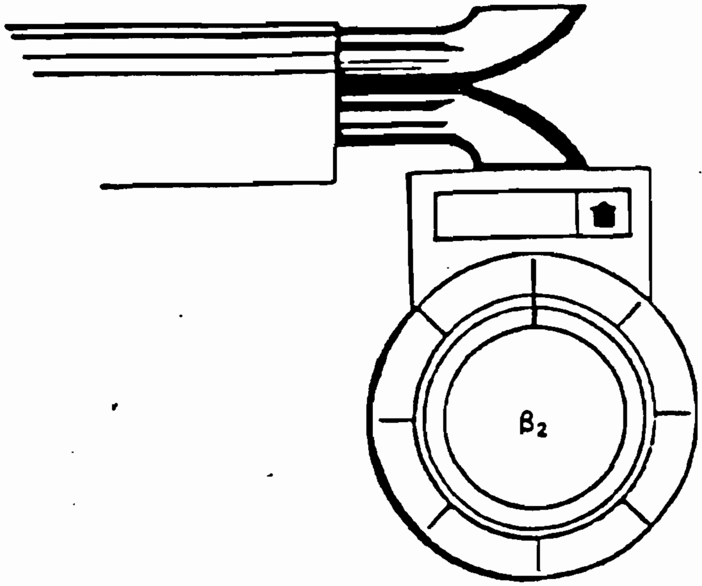
DATE 4-16-98

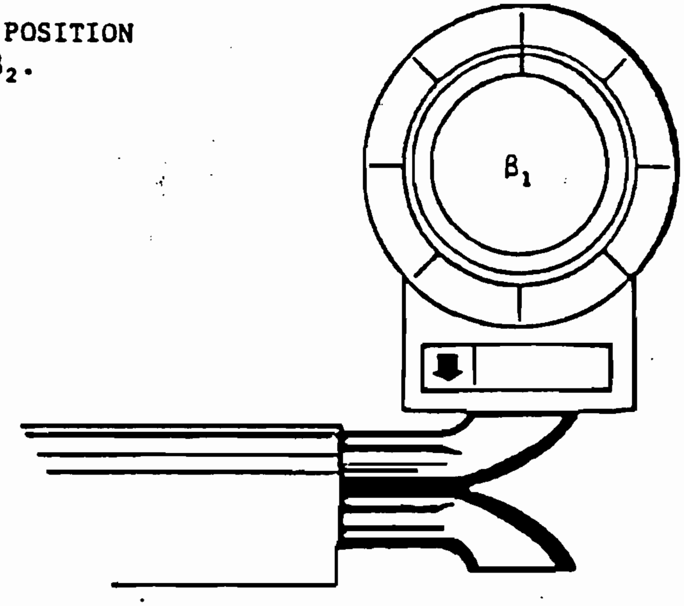
BEST AVAILABLE COPY

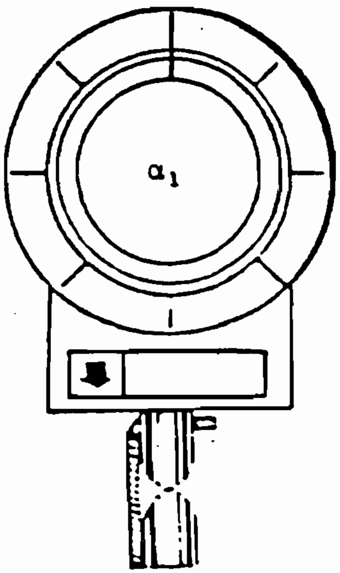
DEGREE INDICATING LEVEL POSITION FOR DETERMINING β_1 and β_2.

β_1 = 0.5 °(<5°)

β_2 = 1.5 °(<5°)



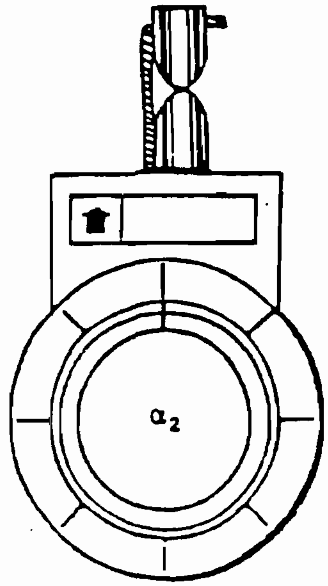




DEGREE INDICATING LEVEL POSITION FOR DETERMINING α_1 and α_2.

α_1 = 0.5 °(<10°)

α_2 = 0.5 °(<10°)



PITOT TUBE CALIBRATION; α and β DETERMINATION

Reviewed By: RHM

Date: 4/30/98

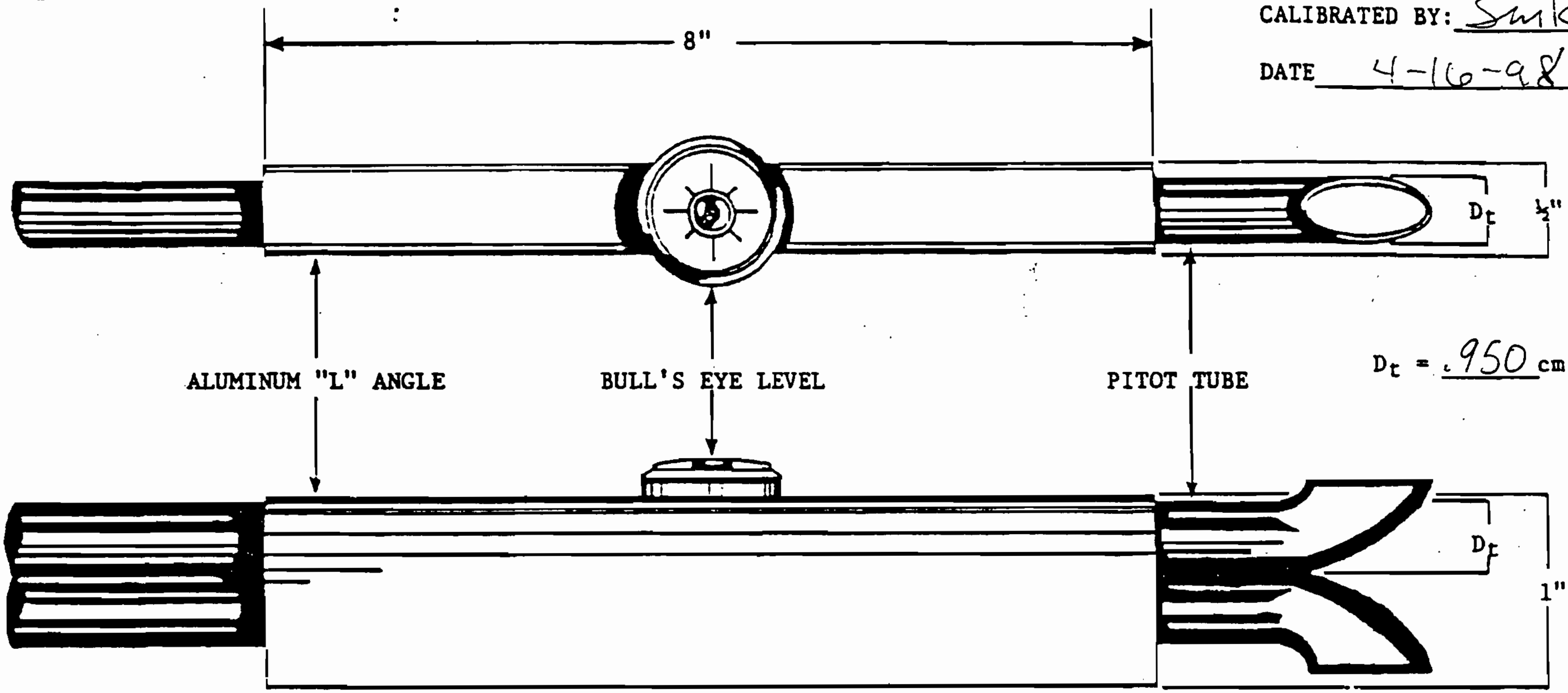
SERIAL NO. [illegible]122

CALIBRATED BY: Smk

DATE 4-16-98

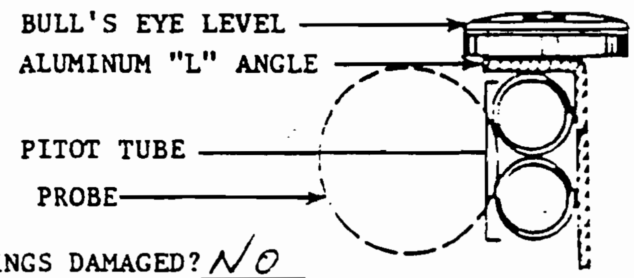
TOP VIEW

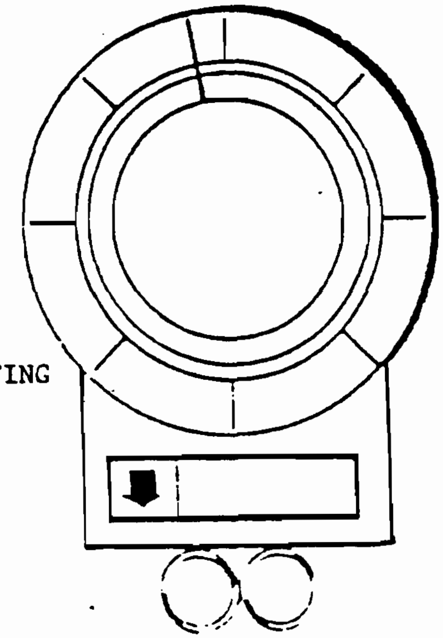
SIDE VIEW



D_t = .950 cm.

END VIEW





DEGREE INDICATING LEVEL

PITOT TUBE OPENINGS DAMAGED? NO

COMMENTS: Removable Pitots

Reviewed By:
Date: 4/30/98

PITOT TUBE CALIBRATION SET-UP POSITION

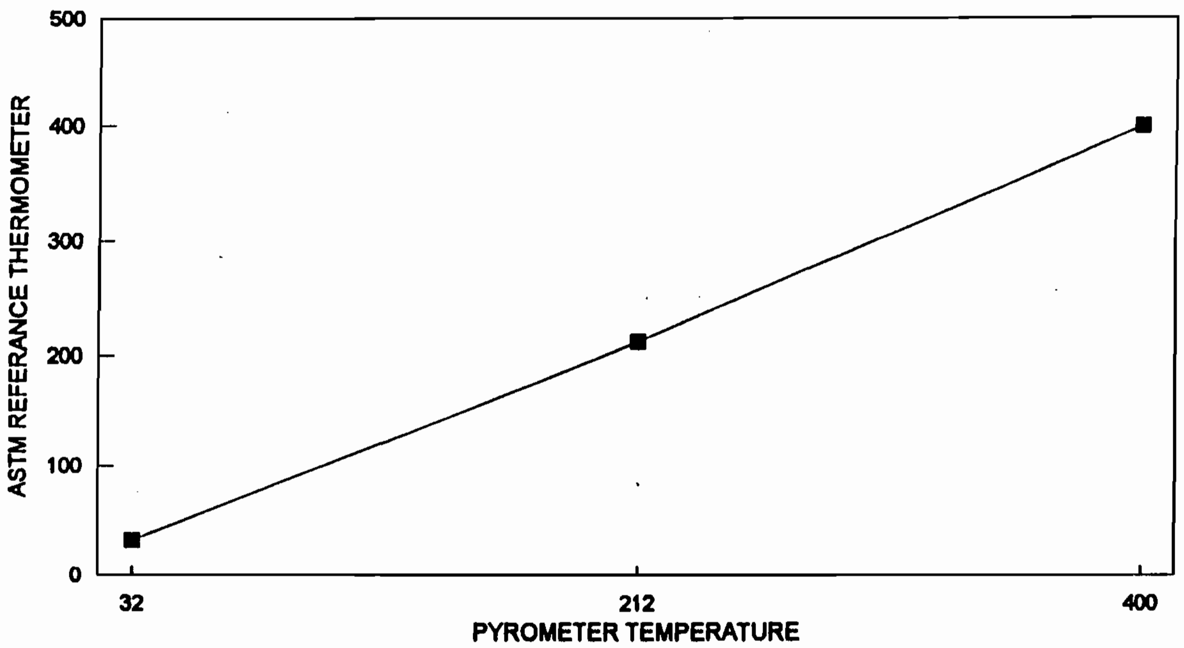
BEST AVAILABLE COPY

PYROMETER CALIBRATION

PYROMETER NO.	*12*	*REFERENCE THERMOMETER*	
CTL SERIAL NO.	*12*	*SERIAL NO.*	*1E2735*
DATE	*4-7-98*	*CALIBRATOR*	

[redacted]

PYROMETER TEMPERATURE CALIBRATION



REVIEWED BY: ____________ DATE: 4/30/98

h:\shardata\air&wast\cals\pyros

WET TEST METER CALIBRATION DATA FORM

DATE: 12-19-97

BAROMETRIC PRESS: 30.30

WET TEST METER SERIAL NUMBER: 12-AH-4

NAME: [signature]

AMBIENT TEMP: 68

RUN NUMBER	VOLUME OF WATER DISPLACED (LITERS) Va	INITIAL METER READING (FT3)	FINAL METER READING (FT3)	NET METER VOLUME (FT3)	NET METER VOLUME (LITERS) Vw	ERROR
1	3.3600	0.0000	0.1188	0.1188	3.3644	0.001309524
2	3.3600	0.1188	0.2374	0.1186	3.3588	-0.000357143
3	3.3600	0.2374	0.3566	0.1192	3.3757	0.004672619
4	3.3600	0.3566	0.4759	0.1193	3.3786	0.005535714
					AVG. ERROR =	0.002790179

CALCULATIONS:

ERROR = (Vw - Va) / Va

CORRECTION FACTOR (C.F.) = 1 / (1 + AVERAGE ERROR)

* CONVERSION FACTOR , FT3 TO LITERS = FT3 x 28.32

CORRECTION FACTOR 0.997217585

(1.000 + / - 0.010)

WHEN USING THE WET TEST METER, THE ACTUAL VOLUME OF AIR CAN BE DETERMINED BY THE EQUATION:

Va = Vw x C.F.

WHERE:

Va = ACTUAL VOLUME OF AIR PASSED THROUGH THE WET TEST METER.

Vw = MEASURED VOLUME OF AIR PASSED THROUGH THE WET TEST METER.

C.F. = CORRECTION FACTOR FOR THE WET TEST METER.

REVIEWED BY: [signature]

DATE: 1/24/98

REVISED 5-9-96

G-2 FUEL BLEND EQUIPMENT CALIBRATIONS

SUMMARY OF EQUIPMENT CALIBRATIONS

EQUIPMENT	CALIBRATION DATE	LOCATION	METHOD	RESULTS
Method 17 Console 5 Initial Test Post Test	 04-06-98 05-14-98	 CES CES	 Wet Test Meter Wet Test Meter	 Y = 1.006 Y = 1.006
Nozzle #6 Initial Measurement Post Test Measurement	 04-01-98 05-14-98	 CES CES	 3 Measurements w/calipers	 DN= 0.197 DN= 0.197
Method 26 Console 8001 Initial Test Post Test	 04-13-98 05-14-98	 CES CES	 West Test Meter Wet Test Meter	 Y= 1.029 Y= 1.034
Pyrometer No. 12	04-07-98	CES	Comparison to ASTM Thermometer	Correct to ± 2°F
Pitot Tube 00122	04-16-98	CES	EPA Method	CP = 0.84
Wet Test Meter Serial No. 12-AH-4	12-19-97	CES	Liquid Displacement	CF= 0.997
Barometer SN 00224	04-06-98	CES	Comparison to National Weather Services	Correct to ± 0.03" Hg

INITIAL DRY GAS METER AND ORIFICE CALIBRATION

CONTROL BOX NO. 6 BAROMETRIC PRESS. 29.95 IN. HG.

DATE 4-6-98 PERFORMED BY Sm K

	RUN 1	RUN 2	RUN 3	RUN 4
VACUUM ("Hg)	2.4	2.5	2.5	3.1
dHw ("H2O)	0.63	1.10	1.60	2.10
dHd ("H2O)	0.50	1.00	1.50	2.00
INITIAL WTM	0.0000	0.0000	0.0000	0.0000
FINAL WTM	6.1100	8.4772	6.7259	7.9169
INITIAL DGM	520.270	526.832	535.875	543.278
FINAL DGM	526.331	535.438	542.816	551.584
TEMP. WTM (F)	70.0	70.0	68.0	68.0
TEMP. DGM (F)	78.0	82.0	89.0	92.0
TEST TIME (MIN.)	15.0	15.0	10.0	10.0
NET VOLUME WTM	6.1100	8.4772	6.7259	7.9169
NET VOLUME DGM	6.061	8.606	6.941	8.306
Y	1.022	1.005	1.004	0.992
dH@	1.665	1.717	1.782	1.706

AVERAGE Y = 1.006

ACCEPTABLE Y RANGE = 0.986 TO 1.026

AVERAGE dH@ = 1.718

ACCEPTABLE dH@ RANGE = 1.568 TO 1.868

Y = (Vw (Pb) x (Td + 460)) / (Vd (Pb + (dHd / 13.6)) x (Tw + 460)

dH@ = 0.0317 x dHd / (Pb (Td + 460)) x ((Tw + 460) x time) / Vw)^2

h:\shardata\source\cals\part\initial\box6\ metcal-i.

BAM
4/30/98

RECHECK OF ORIFICE AND DGM CALIBRATION

CONTROL BOX NO. 6 BAROMETRIC PRESS. 30.07 IN. HG.

DATE ^5-14-98 PERFORMED BY Smk

PRIOR Y = 1.006

SYSTEM LEAK CK. OK @ 15.50" ORIFICE LEAK CK. OK @ 5.0"

	RUN 1	RUN 2	RUN 3
VACUUM ("Hg)	12.0	12.0	12.0
dHw ("H2O)	1.10	1.10	1.10
dHd ("H2O)	1.00	1.00	1.00
INITIAL WTM	0.0000	8.3981	16.7389
FINAL WTM	8.3981	16.7389	25.0547
INITIAL DGM	124.848	133.342	141.819
FINAL DGM	133.342	141.819	150.307
TEMP. WTM (F)	71.0	71.0	71.0
TEMP. DGM (F)	75.0	79.0	81.0
TEST TIME (MIN.)	15.0	15.0	15.0
NET VOLUME WTM	8.3981	8.3408	8.3158
NET VOLUME DGM	8.494	8.477	8.488
Y	0.994	0.996	0.996
dH@	1.772	1.784	1.788

PRIOR Y = 1.006
RECHECK Y = 0.995
% DIFFERENCE = -1.093

AVERAGE dH@ = 1.781

Y = (Vw (Pb) x (Td + 460)) / (Vd (Pb + (dHd / 13.6)) x(Tw + 460)
dH@ = 0.0317 x dHd / (Pb (Td + 460)) x ((Tw + 460) x time / Vw)^2

Reviewed By: [signature]

h:\shardata\air&wast\cals\part\posttest\box6\metcal-f

Date: 5/26/98

BEST AVAILABLE COPY

INITIAL DRY GAS METER CALIBRATION

LOW FLOW SAMPLER

CONTROL BOX NO. *8001* *BAROMETRIC PRESS.* *30.20 IN. HG.*

DATE *4-13-98* *PERFORMED BY* Smk

RUN NO.	*1*	*2*	*3*
FLOW METER (SS FLOAT)	1.4	1.4	1.4
FINAL READING (DGM)	9300.681	9306.241	9311.799
INITIAL READING (DGM)	9295.065	9300.681	9306.241
TEMPERATURE (DGM) F	87	85	85
FINAL READING (WTM)	0.1969	0.3941	0.5922
INITIAL READING (WTM)	0.0000	0.1969	0.3941
TEMPERATURE (WTM)	71.5	71.5	71.5
dHW (H2O)	0.11	0.12	0.11
NET VOLUME (DGM)	5.616	5.560	5.558
NEY VOLUME (WTM)	0.1969	0.1972	0.1981
METER Y	1.022	1.030	1.035

AVERAGE Y = *1.029*

REVIEWED BY: [signature]

DATE: 4/30/98

h:\shardata\source\cals\so2\initial\8001\i-low

FINAL DRY GAS METER CALIBRATION

LOW FLOW SAMPLER

CONTROL BOX NO. 8001 BAROMETRIC PRESS. 30.07 IN. HG.

INITIAL Y 1.029

DATE 5-14-98 PERFORMED BY Sunk

RUN NO.	1	2	3
FLOW METER (SS FLOAT)	1.4	1.4	1.4
FINAL READING (DGM)	9719.629	9725.385	9731.158
INITIAL READING (DGM)	9713.849	9719.629	9725.385
TEMPERATURE (DGM) F	84	86	89
FINAL READING (WTM)	0.2049	0.4092	0.6138
INITIAL READING (WTM)	0.0000	0.2049	0.4092
TEMPERATURE (WTM)	71.0	71.0	71.0
dHW (H2O)	0.14	0.15	0.16
NET VOLUME (DGM)	5.780	5.756	5.773
NET VOLUME (WTM)	0.2049	0.2043	0.2046
METER Y	1.029	1.034	1.038

AVERAGE Y = 1.034

INITIAL Y	1.029
FINAL Y	1.034
% DIFF	0.486

RHM 5/26/98

NOZZLE CALIBRATION DATA FORM

NOZZLE SET NO. 1

DATE: 4-1-98 CALIBRATOR: Steven M. Kelly

NOZZLE I. D.	NOZZLE DIAMETER (IN.) D1	D2	D3	D diff.	D avg
#1	0.116	0.112	0.114	0.004	0.114
#4	0.126	0.126	0.126	0.000	0.126
#5	0.15	0.15	0.15	0.000	0.15
#6	0.197	0.197	0.197	0.000	0.197
#9	0.279	0.278	0.278	0.001	0.278
#10	0.295	0.295	0.291	0.004	0.294
#12	0.389	0.391	0.391	0.002	0.390
#15	0.165	0.165	0.165	0.000	0.165
#16	0.199	0.199	0.199	0.000	0.199
#19	0.279	0.278	0.279	0.001	0.279
#22	0.366	0.370	0.366	0.004	0.367
#30	0.314	0.314	0.314	0.000	0.314
#36	0.189	0.189	0.189	0.000	0.189
#37	0.213	0.213	0.213	0.000	0.213
#38	0.252	0.252	0.252	0.000	0.252
#46	0.193	0.193	0.193	0.000	0.193
#47	0.205	0.205	0.205	0.000	0.205
#48	0.253	0.253	0.251	0.002	0.252
#50	0.314	0.314	0.314	0.000	0.314
#58	0.244	0.244	0.244	0.000	0.244
#68	0.244	0.244	0.240	0.004	0.243

where:

D 1,2,3 = three different nozzle diameters,(in); each diameter must be measured to the nearest 0.001 in.

D diff. = maximum difference between any two diameters, (in.) must be .004 in. or less.

D avg. = average of D1, D2, and D3.

REVIEWED BY: BAM
DATE: 5/4/98

PAGE 1
OF 1

h:\shardata\air&wast\cals\nozzles\initial\nozcali.wk4

FINAL NOZZLE CALIBRATION DATA FORM

NOZZLE NO. ***6***

DATE: ***5-14-98*** ***CALIBRATED BY:*** Smk

NOZZLE IDENTIFICATION	NOZZLE DIAMETER			¼D (IN.)	D AVG
	D1 (IN.)	D2 (IN.)	D3 (IN.)		
6	0.197	0.197	0.197	0	0.197

where:

D1,2,3= three different nozzle diameters,(in); each diameter must be measured to the nearest 0.001 in.

¼D= maximum difference between any two diameters,(in.). ¼D¥ 0.004 in.

D AVG= average of D1,D2 and D3.

Reviewed By: RAM
Date: 5/26/98

h:\shardata\air&wast\cals\nozzles\posttest\nozcalf.

BAROMETER CALIBRATION DATA FORM

DATE: 4-6-98 CALIBRATOR: [signature]

INST. NO: 224

COMMENTS: Readings compared to the National Weather Service, Ruskin FL.

TIME OF READING	BAROMETER READING (HG")	REFERENCE STANDARD READING (HG")	DIFFERENCE (HG")
13:58	29.92	29.95	-0.03
10:49	30.00	30.00	0.00
			0.00
			0.00
			0.00
			0.00

*NOTE: BAROMETRIC READINGS MUST AGREE WITHIN 0.1 INCHES HG OF READINGS OBTAINED FROM THE REFERENCE STANDARD, THE NATIONAL WEATHER SERVICE, RUSKIN FL. TO BE DEEMED ACCEPTABLE.

REVIEWED BY: [signature]
DATE: 4/30/98

h:\shardata\source\cals\baromete\00224

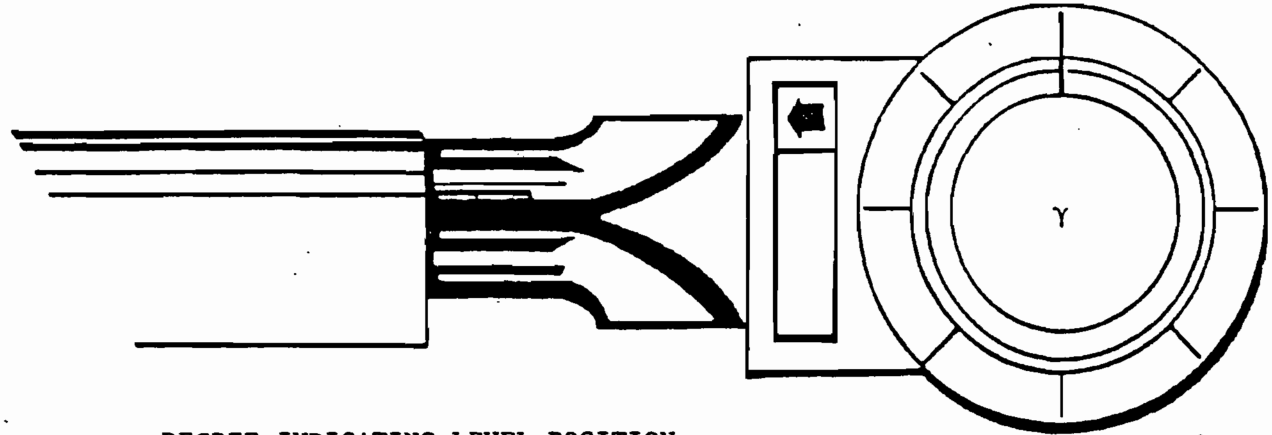
REVISED 5-9-96

BEST AVAILABLE COPY

SERIAL NO. 00[illegible]2

CALIBRATED BY SMK

DATE 4-16-98



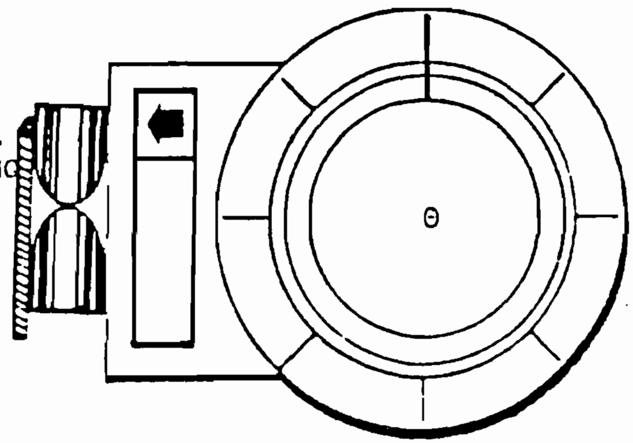
DEGREE INDICATING LEVEL POSITION
FOR DETERMINING γ, THEN CALCULATING Z.

γ = ~~.950~~ 1.5° SMK

A = DISTANCE BETWEEN TIPS, $(P_a + P_b)$, cm. = 2.345.

$Z = A \sin \gamma$ = 0.06 cm; (<0.32 cm).

DEGREE INDICATING LEVEL
POSITION FOR DETERMINING
Θ, THEN CALCULATING W.



Θ = 1.0 °

$W = A \sin \Theta$ = 0.04 cm; (<0.08 cm).

PITOT TUBE CALIBRATION: A, W, γ, Θ and Z DETERMINATION

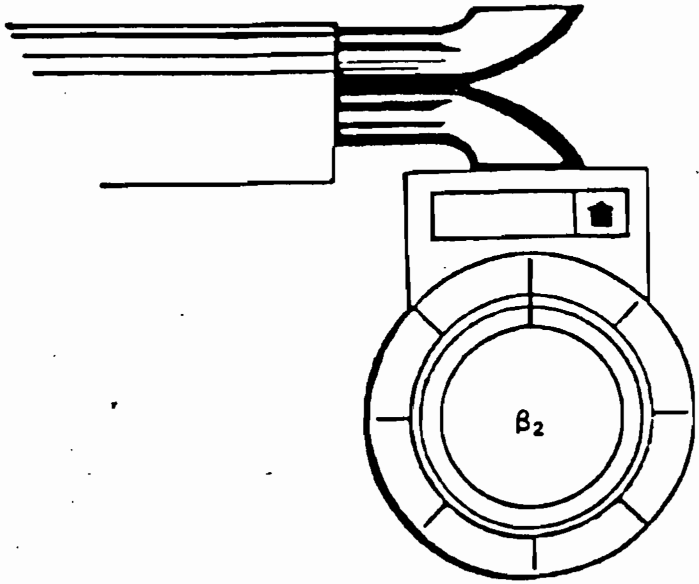
Reviewed By: [signature]
Date: 4/30/98

SERIAL NO. D012

CALIBRATED BY SmK

DATE 4-16-98

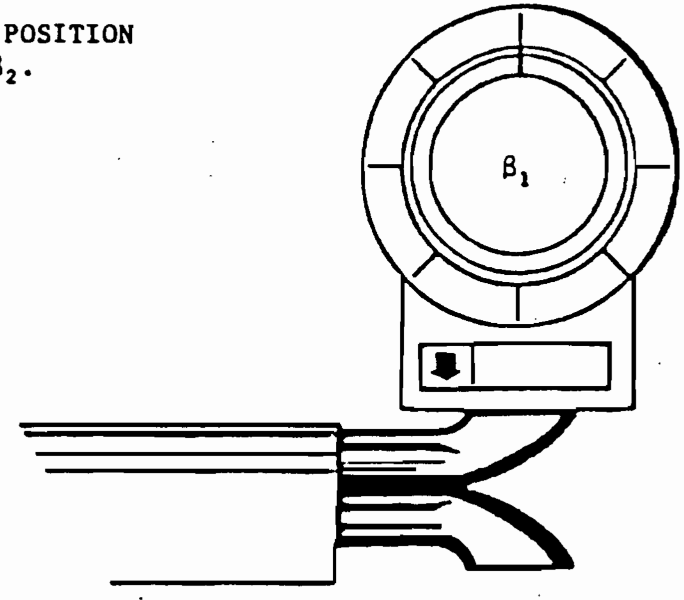
BEST AVAILABLE COPY

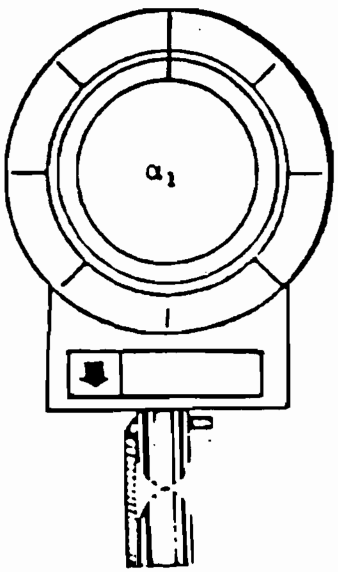


DEGREE INDICATING LEVEL POSITION FOR DETERMINING β_1 and β_2.

β_1 = 0.5 °(<5°)

β_2 = 1.5 °(<5°)

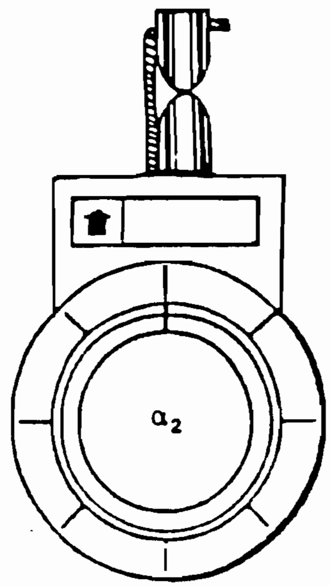




DEGREE INDICATING LEVEL POSITION FOR DETERMINING α_1 and α_2.

α_1 = 0.5 °(<10°)

α_2 = 0.5 °(<10°)



PITOT TUBE CALIBRATION; α and β DETERMINATION

Reviewed By: RHM

Date: 4/30/98

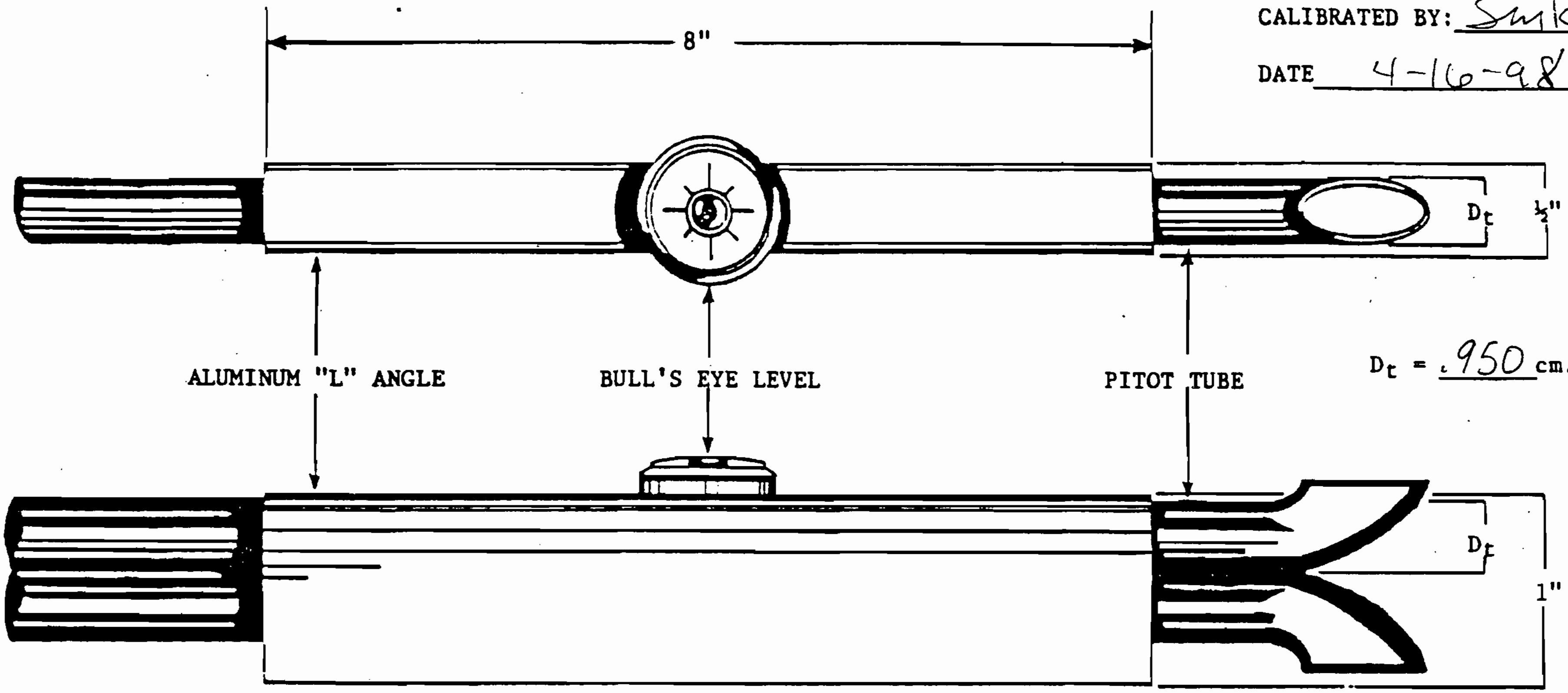
SERIAL NO. 0[illegible]122

CALIBRATED BY: SMK

DATE 4-16-98

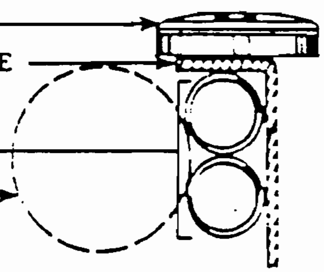
TOP VIEW

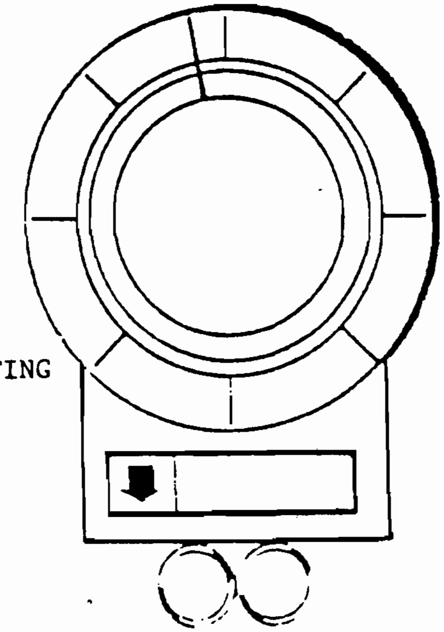
SIDE VIEW



D_t = .950 cm.

END VIEW





DEGREE INDICATING LEVEL

PITOT TUBE OPENINGS DAMAGED? NO

COMMENTS: Removable Pitots

Reviewed By:
Date: 4/30/98

PITOT TUBE CALIBRATION SET-UP POSITION

BEST AVAILABLE COPY

PYROMETER CALIBRATION

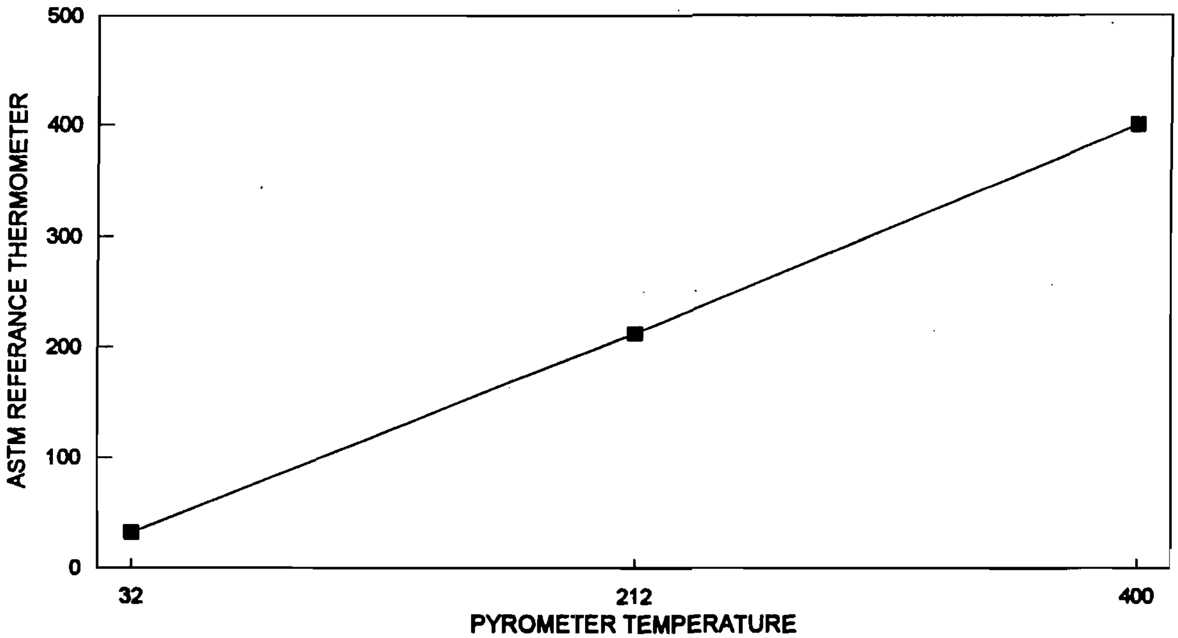
PYROMETER NO. 12 *REFERENCE THERMOMETER*

CTL SERIAL NO. 12 *SERIAL NO.* 1E2735

DATE 4-7-98 *CALIBRATOR* ________

REFERENCE TEMP. (F)	*PYROMETER INDICATION*
32	32
212	212
400	400

PYROMETER TEMPERATURE CALIBRATION



REVIEWED BY: ________ DATE: 4/30/98

h:\shardata\air&wast\cals\pyros

WET TEST METER CALIBRATION DATA FORM

DATE: 12-19-97

NAME: [signature]

BAROMETRIC PRESS: 30.30

AMBIENT TEMP: 68

WET TEST METER SERIAL NUMBER: 12-AH-4

RUN NUMBER	VOLUME OF WATER DISPLACED (LITERS) Va	INITIAL METER READING (FT3)	FINAL METER READING (FT3)	NET METER VOLUME (FT3)	NET METER VOLUME (LITERS) Vw	ERROR
1	3.3600	0.0000	0.1188	0.1188	3.3644	0.001309524
2	3.3600	0.1188	0.2374	0.1186	3.3588	-0.000357143
3	3.3600	0.2374	0.3566	0.1192	3.3757	0.004672619
4	3.3600	0.3566	0.4759	0.1193	3.3786	0.005535714
					AVG. ERROR =	0.002790179

CALUCLATIONS:

ERROR = (Vw - Va) / Va

CORRECTION FACTOR (C.F.) = 1 / (1 + AVERAGE ERROR)

* CONVERSION FACTOR , FT3 TO LITERS = FT3 x 28.32

CORRECTION FACTOR 0.997217585

(1.000 + / - 0.010)

WHEN USING THE WET TEST METER, THE ACTUAL VOLUME OF AIR CAN BE DETERMINED BY THE EQUATION:

Va = Vw x C.F.

WHERE:

Va = ACTUAL VOLUME OF AIR PASSED THROUGH THE WET TEST METER.

Vw = MEASURED VOLUME OF AIR PASSED THROUGH THE WET TEST METER.

C.F. = CORRECTION FACTOR FOR THE WET TEST METER.

REVIEWED BY: [signature]

DATE: 1/24/98

REVISED 5-9-96

G-3 CYLINDER GAS CERTIFICATIONS

CCS NTNT:/

Scott Specialty Gases

1750 EAST CLUB BLVD,DURHAM,NC 27704 Phone: 919-220-0803 Fax: 919-220-0808

CERTIFICATE OF ANALYSIS:Interference-Free™ Multi-Component EPA Protocol Gas

Customer
TAMPA ELECTRIC CO
RAY MCDARBY
5010 CAUSEWAY BLVD

TAMPA,FL 33619

Assay Laboratory

SCOTT SPECIALTY GASES
1750 EAST CLUB BLVD
DURHAM,NC 27704

Project No.: 12-20640-001
P.O. No.: N31293

ANALYTICAL INFORMATION

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

Cylinder Number: ALM049837 **Certification Date:** 1/06/97 **Exp. Date:** 1/06/99
Cylinder Pressure*:** 1860 PSIG

COMPONENT	CERTIFIED CONCENTRATION		ANALYTICAL ACCURACY**
CARBON DIOXIDE	17.94	%	+/- 1% NIST Traceable
NITRIC OXIDE	1,411	PPM	+/- 1% NIST Traceable
SULFUR DIOXIDE *	1,272	PPM	+/- 1% NIST Traceable
OXIDES OF NITROGEN	1,411	PPM	Reference Value
NITROGEN - OXYGEN FREE		BALANCE	

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is inclusive of usual known error sources which at least include precision of the measurement processes. Product certified as +/- 1% analytical accuracy is directly traceable to NIST standards.

* This Protocol has been certified using corrected NIST SO2 standard values, per EPA guidance dated 7/24/96 and will not correlate with uncorrected Protocols.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM18000	4/12/97	ALM047771	17.95 %	CO2/N2
NTRM2631	6/14/98	ALM058634	2817. PPM	NO/N2
NTRM R1696	3/22/97	ALM041982	3210. PPM	SO2/N2

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	LAST DATE CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9400252	12/18/96	Scott Enhanced FTIR
FTIR System/8220/AAB9400252	12/18/96	Scott Enhanced FTIR
FTIR System/8220/AAB9400252	12/18/96	Scott Enhanced FTIR

ANALYZER READINGS

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

First Triad Analysis / **Second Triad Analysis** / **Calibration Curve**

CARBON DIOXIDE

First Triad Analysis — Date: 12/30/96 Response Unit: %
Z1=3.0384 R1=17.949 T1=17.937
R2=17.946 Z2=0.0040 T2=17.947
Z3=0.0069 T3=17.950 R3=17.955
Avg. Concentration: 17.94 %

Calibration Curve — Concentration=A+Bx+Cx2+Dx3+Ex4
r=0.999990
Constants: A= 0.000000
B=1.000000 C=0.000000
D=0.000000 E=0.000000

NITRIC OXIDE

First Triad Analysis — Date: 12/30/96 Response Unit: PPM
Z1=2.4081 R1=2815.7 T1=1408.4
R2=2810.3 Z2=0.0936 T2=1407.8
Z3=0.2319 T3=1408.7 R3=2824.9
Avg. Concentration: 1408. PPM

Second Triad Analysis — Date: 01/06/97 Response Unit: PPM
Z1=0.7710 R1=2817.8 T1=1412.8
R2=2814.3 Z2=0.7092 T2=1415.0
Z3=0.8498 T3=1416.6 R3=2818.9
Avg. Concentration: 1415. PPM

Calibration Curve — Concentration=A+Bx+Cx2+Dx3+Ex4
r=0.999990
Constants: A= 0.000000
B=1.000000 C=0.000000
D=0.000000 E=0.000000

SULFUR DIOXIDE *

First Triad Analysis — Date: 12/30/96 Response Unit: PPM
Z1=-205.4 R1=3209.4 T1=1273.6
R2=3209.7 Z2=1.1620 T2=1274.1
Z3=-0.585 T3=1273.9 R3=3210.9
Avg. Concentration: 1274. PPM

Second Triad Analysis — Date: 01/06/97 Response Unit: PPM
Z1=-0.566 R1=3208.8 T1=1270.6
R2=3208.3 Z2=1.7101 T2=1270.4
Z3=1.3849 T3=1271.6 R3=3212.9
Avg. Concentration: 1271. PPM

Calibration Curve — Concentration=A+Bx+Cx2+Dx3+Ex4
r=0.999990
Constants: A= 0.000000
B=1.000000 C=0.000000
D=0.000000 E=0.000000

Special Notes:

ANALYST: B. Becton
B. Becton

Scott Specialty Gases

1750 EAST CLUB BLVD,DURHAM,NC 27704 Phone: 919-220-0803 Fax: 919-220-0808

CERTIFICATE OF ANALYSIS: Interference-Free™ Multi-Component EPA Protocol Gas

Customer
TAMPA ELECTRIC CO
RAY MCDARBY
5010 CAUSEWAY BLVD

TAMPA,FL 33619

Assay Laboratory
SCOTT SPECIALTY GASES
1750 EAST CLUB BLVD
DURHAM,NC 27704

Project No.: 12-23391-001
P.O. No.: N31293

ANALYTICAL INFORMATION

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

Cylinder Number: ALM031757 **Certification Date:** 6/16/97 **Exp. Date:** 6/16/1999
Cylinder Pressure*:** 1854 PSIG

COMPONENT	CERTIFIED CONCENTRATION		ANALYTICAL ACCURACY**
CARBON DIOXIDE	10.01	%	+/- 1% NIST Traceable
NITRIC OXIDE	746.3	PPM	+/- 1% NIST Traceable
SULFUR DIOXIDE *	700.9	PPM	+/- 1% NIST Traceable
OXIDES OF NITROGEN	746.3	PPM	Reference Value
NITROGEN - OXYGEN FREE		BALANCE	

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is inclusive of usual known error sources which at least include precision of the measurement processes.
Product certified as +/- 1% analytical accuracy is directly traceable to NIST standards.
* This Protocol has been certified using corrected NIST SO2 standard values, per EPA guidance dated 7/24/96 and will not correlate with uncorrected Protocols.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM18000	4/12/01	ALM047737	17.95 %	CO2/N2
NTRM1687	6/24/98	ALM058037	1002. PPM	NO/N2
NTRM1662	4/05/01	ALM043918	972.0 PPM	SO2/N2

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	LAST DATE CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9400252	06/08/97	Scott Enhanced FTIR
FTIR System/8220/AAB9400252	06/08/97	Scott Enhanced FTIR
FTIR System/8220/AAB9400252	06/08/97	Scott Enhanced FTIR

ANALYZER READINGS

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

First Triad Analysis	Second Triad Analysis	Calibration Curve
CARBON DIOXIDE		
Date: 06/09/97 Response Unit: %		Concentration=A+Bx+Cx2+Dx3+Ex4
Z1=0.0118 R1=17.940 T1=10.013		r=0.999990
R2=17.958 Z2=0.0057 T2=10.013		Constants: A= 0.000000
Z3=0.0121 T3=10.015 R3=17.952		B=1.000000 C=0.000000
Avg. Concentration: 10.01 %		D=0.000000 E=0.000000
NITRIC OXIDE		
Date: 06/09/97 Response Unit: PPM	Date: 06/16/97 Response Unit: PPM	Concentration=A+Bx+Cx2+Dx3+Ex4
Z1=0.0846 R1=1002.6 T1=746.05	Z1=0.1319 R1=1002.4 T1=747.50	r=0.999990
R2=1002.8 Z2=0.3743 T2=744.03	R2=1001.1 Z2=0.2477 T2=747.05	Constants: A= 0.000000
Z3=0.7725 T3=745.79 R3=1000.6	Z3=0.2337 T3=747.58 R3=1002.4	B=1.000000 C=0.000000
Avg. Concentration: 745.3 PPM	Avg. Concentration: 747.4 PPM	D=0.000000 E=0.000000
SULFUR DIOXIDE *		
Date: 06/09/97 Response Unit: PPM	Date: 06/16/97 Response Unit: PPM	Concentration=A+Bx+Cx2+Dx3+Ex4
Z1=-0.156 R1=972.60 T1=701.31	Z1=-0.580 R1=972.25 T1=701.04	r=0.999990
R2=971.76 Z2=0.5674 T2=700.63	R2=971.84 Z2=1.1597 T2=700.46	Constants: A= 0.000000
Z3=0.2656 T3=701.02 R3=971.64	Z3=2.0330 T3=700.93 R3=971.91	B=1.000000 C=0.000000
Avg. Concentration: 701.0 PPM	Avg. Concentration: 700.8 PPM	D=0.000000 E=0.000000

Special Notes:

ANALYST: B.M. Becton
B.M. Becton

Scott Specialty Gases

6141 EASTON ROAD,PLUMSTEADVILLE,PA 18949-0310 Phone: 215-766-8861 Fax: 215-766-2070

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

Customer
TAMPA ELECTRIC CO
BRUCE RODRIGUEZ
5010 CAUSEWAY BLVD

TAMPA,FL 33619

Assay Laboratory

SCOTT SPECIALTY GASES
6141 EASTON ROAD
PLUMSTEADVILLE,PA 18949-0310

Project No.: 01-92065-003
P.O. No.: BRUCE RODRIGUEZ

ANALYTICAL INFORMATION

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

Cylinder Number: AAL8489 Certification Date: 7/29/97 Exp. Date: 7/29/2000
Cylinder Pressure***: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY**
PROPANE	2.875 PPM	+/- 1% NIST TRACEABLE
AIR	BALANCE	

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is inclusive of usual known error sources which at least include precision of the measurement processes.
Product certified as +/- 1% analytical accuracy is directly traceable to NIST standards.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM1666	9/21/97	ALM017357	9.620 PPM	PROPANE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	LAST DATE CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN/3300/7945	07/29/97	GC/FID

ANALYZER READINGS

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

First Triad Analysis | **Second Triad Analysis** | **Calibration Curve**

PROPANE

First Triad Analysis:

Date: 07/29/97	Response Unit: AREA	
Z1=0.0000	R1=184408	T1=55144.
R2=184367	Z2=0.0000	T2=55077.
Z3=0.0000	T3=55052.	R3=184327
Avg. Concentration:	2.875	PPM

Calibration Curve:

Concentration=A+Bx+Cx2+Dx3+Ex4	
r=0.99999	1666
Constants:	A=-1.3122E-02
B=5.1875E-05	C=2.6033E-12
D=0.0000E+00	E=0.0000E+00

Special Notes:

ANALYST: B. LEWIS, JR.

Scott Specialty Gases

6141 EASTON ROAD,PLUMSTEADVILLE,PA 18949-0310 Phone: 215-766-8861 Fax: 215-766-2070

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

Customer
TAMPA ELECTRIC CO
BRUCE RODRIGUEZ
5010 CAUSEWAY BLVD
TAMPA,FL 33619

Assay Laboratory
SCOTT SPECIALTY GASES
6141 EASTON ROAD
PLUMSTEADVILLE,PA 18949-0310

Project No.: 01-92065-004
P.O. No.: BRUCE RODRIGUEZ

ANALYTICAL INFORMATION

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

Cylinder Number: AAL8806 **Certification Date:** 7/29/97 **Exp. Date:** 7/29/2000
Cylinder Pressure*:** 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION		ANALYTICAL ACCURACY**
PROPANE	5.051	PPM	+/- 1% NIST TRACEABLE
AIR		BALANCE	

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is inclusive of usual known error sources which at least include precision of the measurement processes.
Product certified as +/- 1% analytical accuracy is directly traceable to NIST standards.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM1666	9/21/97	ALM017357	9.620 PPM	PROPANE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	LAST DATE CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN/3300/7945	07/29/97	GC/FID

ANALYZER READINGS

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

First Triad Analysis **Second Triad Analysis** **Calibration Curve**

PROPANE

Date: 07/29/97	Response Unit: AREA	
Z1=0.0000	R1=184408	T1=96651.
R2=184367	Z2=0.0000	T2=96808.
Z3=0.0000	T3=96760.	R3=184327
Avg. Concentration:	5.051	PPM

Concentration=A+Bx+Cx2+Dx3+Ex4	
r=0.99999	1666
Constants:	A=-1.3122E-02
B=5.1675E-05	C=2.8033E-12
D=0.0000E+00	E=0.0000E+00

Special Notes:

ANALYST: B. LEWIS, JR.

Scott Specialty Gases

1750 EAST CLUB BOULEVARD, DURHAM, NC 27704 (919) 220-0803 FAX: (919) 220-0808

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

Customer
Tampa Electric Company
Attn: Nate Alcoz
5010 Causeway Blvd.
Tampa, FL 33619

Assay Laboratory
Scott Specialty Gases, Inc.
1750 East Club Boulevard
Durham, NC 27704

Purchase Order N31293
Scott Project # 12-16450

ANALYTICAL INFORMATION

Certified to exceed the minimum specifications of EPA Protocol Procedure #G1, issued September, 1993.

Cylinder Number	AAL-1682	**Certification Date**	03-29-96	**Expiration Date**	03-29-99
Cylinder Pressure	2000 PSIG	**Previous Certification**	None		

ANALYZED CYLINDER

Components	Certified Concentration	Analytical Uncertainty*
Propane	**8.60 PPM**	**+/- 1% NIST Directly Traceable**
Air		**Balance**

Do not use when cylinder pressure is less than 150 PSIG.
*Analytical uncertainty is inclusive of usual known error sources which at least includes reference standard error & precision of the measurement processes.

REFERENCE STANDARD

Type	Expiration Date	Cylinder Number	Concentration
NTRM # 1666	09-97	AAL-8237	9.62 PPM C3H8 Balance in Air

INSTRUMENTATION

Instrument/Model/Serial #	Last Date Calibrated	Analytical Principle
Varian/3400/0160	03-05-96	Gas Chromatography

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

Components	First Triad Analysis	Second Triad Analysis	Calibration Curve
Propane	Date: 03-29-96 Response Units: Area STD=53866 SPL=48251 SPL=48222 STD=53888 STD=53864 SPL=48060	Date: Response Units: STD= SPL= SPL= STD= STD= SPL=	Date: 03-05-96
	Date: Response Units: STD= SPL= SPL= STD= STD= SPL=	Date: Response Units: STD= SPL= SPL= STD= STD= SPL=	Date:
	Date: Response Units: STD= SPL= SPL= STD= STD= SPL=	Date: Response Units: STD= SPL= SPL= STD= STD= SPL=	

S. Vaughan
Analyst S. Vaughan

Scott Specialty Gases, Inc.

Shipped From: 6141 EASTON ROAD PO BOX 310
PLUMSTEADVILLE PA 18949-0310
Phone: 215-766-8861 Fax: 215-766-2070

C E R T I F I C A T E   O F   A N A L Y S I S

TAMPA ELECTRIC CO
MARTIN DUFF
GENERAL ACCTG DEPT
PO BOX 3285
TAMPA FL 33601

PROJECT #: 01-59201-004
PO#: EN97931
ITEM #: 01025811 4AL
DATE: 8/01/94

CYLINDER #: ALM017061

COMPONENT	ANALYSIS
HYDROGEN	40%
HELIUM	60%

CERTIFIED

H2 (40%) & HE (60%) FID

QC BATCH : 304454

ANALYST: Scott Wagner
SCOTT A WAGNER

Scott Specialty Gases

Shipped From: 6141 EASTON ROAD, PLUMSTEADVILLE PA 18949-0310, Phone: 215-766-8861

PO BOX 310, Fax: 215-766-2070

CERTIFICATE OF ANALYSIS

TAMPA ELECTRIC CO
RAY MCDARBY
5010 CAUSEWAY BLVD

TAMPA FL 33619

PROJECT #: 01-92988-002
PO#: E-N31293
ITEM #: 0101818 AL
DATE: 8/18/97

CYLINDER #: AAL19371
FILL PRESSURE: 2000 PSIG

PURE MATERIAL: NITROGEN

CAS# 7727-37-9

GRADE: V O C FREE

PURITY: 99.999%

IMPURITY	MAXIMUM CONCENTRATIONS
THC	0.05 PPM
CO	0.10 PPM
CO_2	0.3 PPM
H_2O	2 PPM
O_2	2 PPM

QC BATCH : S91368

ANALYST: Terrance P. Boswell
TERRANCE P. BOSWELL

OE5 ... 1

Scott Specialty Gases

1750 EAST CLUB BLVD,DURHAM,NC 27704 Phone: 919-220-0803 Fax: 919-220-0808

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

Customer
TAMPA ELECTRIC CO
RAY MCDARBY
5010 CAUSEWAY BLVD

TAMPA,FL 33619

Assay Laboratory

SCOTT SPECIALTY GASES
1750 EAST CLUB BLVD
DURHAM,NC 27704

Project No.: 12-20640-002
P.O. No.: N31293

ANALYTICAL INFORMATION

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

Cylinder Number: 1L3604 **Certification Date:** 1/03/97 **Exp. Date:** 1/03/00
Cylinder Pressure*:** 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY**
OXYGEN	12.01 %	+/- 1% NIST TRACEABLE
NITROGEN	BALANCE	

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is inclusive of usual known error sources which at least include precision of the measurement processes.
* Product certified as +/- 1% analytical accuracy is directly traceable to NIST standards.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2658A	11/27/98	ALM031884	9.680 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	LAST DATE CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN GC/3400/16804	12/10/96	GC / TCD

ANALYZER READINGS

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

First Triad Analysis — *Second Triad Analysis* — *Calibration Curve*

OXYGEN

First Triad Analysis

Date: 01/03/97 Response Unit: AREA

Z1=0.0000	R1=244345	T1=303009
R2=244878	Z2=0.0000	T2=303665
Z3=0.0000	T3=303798	R3=244889

Avg. Concentration: 12.01 %

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4
r=0.999990
Constants: A=0.00
B=1.00 C=0.00
D=0.00 E=0.00

Special Notes:

ANALYST: B. Becton
B. BECTON

G-4 BASELINE BIAS AND DRIFT CALCULATIONS

CALIBRATION SUMMARY

SOURCE: F.J GANNON STATION UNIT 3 WDF BASELINE TEST

REASON: INITIAL DIRECT CALIBRATION

DATE : 05-21-1998 TIME: 07:10 - 07:19

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
5	STACK	ppmVOC	0.0	0.0
5	STACK	ppmVOC	2.9	3.0
5	STACK	ppmVOC	5.1	5.2
5	STACK	ppmVOC	8.6	8.6

CALIBRATION SUMMARY

SOURCE: F.J GANNON STATION UNIT 3 WDF BASELINE TEST

REASON: INITIAL SYSTEM CALIBRATION

DATE : 05-21-1998 TIME: 07:24 - 08:32

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
5	STACK	ppmVOC	0.0	0.1
5	STACK	ppmVOC	2.9	3.0
5	STACK	ppmVOC	5.1	5.1
5	STACK	ppmVOC	8.6	8.6

CALIBRATION SUMMARY

SOURCE: F.J GANNON STATION UNIT 3 WDF BASELINE TEST

REASON: RUN ONE BIAS CAL

DATE : 05-21-1998 TIME: 09:38 - 10:05

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
5	STACK	ppmVOC	0.0	0.1
5	STACK	ppmVOC	2.9	3.0

SYSTEM CALIBRATION BIAS AND DRIFT CALCULATIONS

TEST METHOD 25A CORRECTION

F.J. GANNON STATION BOILER 3 WDF BASELINE

TEST DATE: 05/21/98

RUN NO. 1

SPAN VALUE: 10 ppm PROPANE

	INITIAL VALUES			FINAL VALUES		
	ANALYZER CAL. RESPONSE	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	DRIFT (% OF SPAN)
VOC ZERO GA	0.10	0.10	0.00	0.10	0.00	0.00
VOC UP-SCAL	3.00	3.00	0.00	3.00	0.00	0.00

$$\text{SYSTEM CAL. BIAS} = \frac{\text{SYSTEM CAL. RESPONSE - ANALYZER CAL. RESPONSE}}{\text{SPAN}} \times 100$$

$$\text{DRIFT} = \frac{\text{FINAL SYSTEM CAL. RESPONSE - INITIAL CAL. RESPONSE}}{\text{SPAN}} \times 100$$

CALIBRATION SUMMARY

SOURCE: F.J GANNON STATION UNIT 3 WDF BASELINE TEST

REASON: RUN TWO BIAS CAL

DATE : 05-21-1998 TIME: 11:10 - 11:33

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
5	STACK	ppmVOC	0.0	0.0
5	STACK	ppmVOC	2.9	3.0

SYSTEM CALIBRATION BIAS AND DRIFT CALCULATIONS

TEST METHOD 25A CORRECTION

F.J. GANNON STATION BOILER 3 WDF BASELINE

TEST DATE: 05/21/98

RUN NO. 2

SPAN VALUE: 10 ppm PROPANE

	INITIAL VALUES			FINAL VALUES		
	ANALYZER CAL. RESPONSE	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	DRIFT (% OF SPAN)
VOC ZERO GA	0.10	0.10	0.00	0.00	-1.00	-1.00
VOC UP-SCAL	3.00	3.00	0.00	3.00	0.00	0.00

$$\text{SYSTEM CAL. BIAS} = \frac{\text{SYSTEM CAL. RESPONSE - ANALYZER CAL. RESPONSE}}{\text{SPAN}} \times 100$$

$$\text{DRIFT} = \frac{\text{FINAL SYSTEM CAL. RESPONSE - INITIAL CAL. RESPONSE}}{\text{SPAN}} \times 100$$

CALIBRATION SUMMARY

SOURCE: F.J GANNON STATION UNIT 3 WDF BASELINE TEST

REASON: RUN THREE BIAS CAL

DATE : 05-21-1998 TIME: 12:38 - 13:02

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
5	STACK	ppmVOC	0.0	0.[illegible]
5	STACK	ppmVOC	2.9	2.9

SYSTEM CALIBRATION BIAS AND DRIFT CALCULATIONS

TEST METHOD 25A CORRECTION

F.J. GANNON STATION BOILER 3 WDF BASELINE

TEST DATE: 05/21/98

RUN NO. 3

SPAN VALUE: 10 ppm PROPANE

		——INITIAL VALUES——		——FINAL VALUES——	
	ANALYZER CAL. RESPONSE	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)
VOC ZERO GA	0.10	0.00	-1.00	0.10	0.00
VOC UP-SCAL	3.00	3.00	0.00	2.90	-1.00

$$\text{SYSTEM CAL. BIAS} = \frac{\text{SYSTEM CAL. RESPONSE - ANALYZER CAL. RESPONSE}}{\text{SPAN}} \times 100$$

$$\text{DRIFT} = \frac{\text{FINAL SYSTEM CAL. RESPONSE - INITIAL CAL. RESPONSE}}{\text{SPAN}} \times 100$$

CONTINUOUS EMISSIONS MONITORING SET-UP

SOURCE: F.J GANNON STATION UNIT 3 WDF BASELINE TEST

DATE: 05-19-1998 TIME: 13:16

A/D CHAN	DESCRIP	UNITS	SPAN	INPUT VOLTAGE	ZERO OFFSET
1	STACK	ppmSO_2	1350	10.00 V	0%
2	STACK	%CO_2	20	5.00 V	20%

AVERAGING PERIODS: ONE HOUR,

EMISSION RATE 1: lb SO_2/MMBTU STACK

$$E = (\text{ppm } SO_2)\,(1800)\,(0.1660E-06)\,(100/\%CO_2)$$

ppm SO_2 from A/D Channel 1
%CO_2 from A/D Channel 2

CALIBRATION SUMMARY

SOURCE: F.J GANNON STATION UNIT 3 WDF BASELINE TEST

REASON: INITIAL CALIBRATION

DATE : 05-20-1998 TIME: 09:23 - 09:54

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	ppmSO2	0.0	3.2
1	STACK	ppmSO2	746.3	737.8
1	STACK	ppmSO2	1272.0	1273.4
2	STACK	%CO2	0.00	0.26
2	STACK	%CO2	10.01	10.08
2	STACK	%CO2	17.94	17.99

CALIBRATION SUMMARY

SOURCE: F.J GANNON STATION UNIT 3 WDF BASELINE TEST

REASON: RUN TWO DRIFT CAL

DATE : 05-20-1998 TIME: 11:00 - 11:12

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	ppmSO2	0.0	3.6
1	STACK	ppmSO2	746.3	739.5
2	STACK	%CO2	0.00	0.18
2	STACK	%CO2	10.01	10.12

SYSTEM CALIBRATION BIAS AND DRIFT CALCULATIONS

SOURCE: F.J. GANNON STATION NO.3 WDF BASELINE TEST

TEST DATE: 05/20/98

RUN NUMBER: 2

SPAN VALUES: 1350 ppm SO2
20 % CO2

	——INITIAL VALUES——			——FINAL VALUES——		
	ANALYZER CAL. RESPONSE	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	DRIFT (% OF SPAN)
SO2 ZERO GA	3.2	3.2	0.00	3.6	0.03	0.03
SO2 UP-SCAL	737.8	737.8	0.00	739.5	0.13	0.13
CO2 ZERO GA	0.26	0.26	0.00	0.18	-0.40	-0.40
CO2 UP-SCAL	10.08	10.08	0.00	10.12	0.20	0.20

$$\text{SYSTEM CAL. BIAS} = \frac{\text{SYSTEM CAL. RESPONSE - ANALYZER CAL. RESPONSE}}{\text{SPAN}} \times 100$$

$$\text{DRIFT} = \frac{\text{FINAL SYSTEM CAL. RESPONSE - INITIAL CAL. RESPONSE}}{\text{SPAN}} \times 100$$

CALIBRATION SUMMARY

SOURCE: F.J GANNON STATION UNIT 3 WDF BASELINE TEST

REASON: RUN THREE DRIFT CAL

DATE : 05-20-1998 TIME: 12:17 - 12:31

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	ppmSO2	0.0	3.5
1	STACK	ppmSO2	746.3	735.2
2	STACK	%CO2	0.00	0.12
2	STACK	%CO2	10.01	10.12

SYSTEM CALIBRATION BIAS AND DRIFT CALCULATIONS

SOURCE: F.J. GANNON STATION NO.3 WDF BASELINE TEST

TEST DATE: 05/20/98

RUN NUMBER: 3

SPAN VALUES: 1350 ppm SO2
20 % CO2

	INITIAL VALUES			FINAL VALUES		
	ANALYZER CAL. RESPONSE	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	DRIFT (% OF SPAN)
SO2 ZERO GA	3.2	3.6	0.03	3.5	0.02	-0.01
SO2 UP-SCAL	737.8	739.5	0.13	735.2	-0.19	-0.32
CO2 ZERO GA	0.26	0.18	-0.40	0.12	-0.70	-0.30
CO2 UP-SCAL	10.08	10.12	0.20	10.12	0.20	0.00

$$\text{SYSTEM CAL. BIAS} = \frac{\text{SYSTEM CAL. RESPONSE} - \text{ANALYZER CAL. RESPONSE}}{\text{SPAN}} \times 100$$

$$\text{DRIFT} = \frac{\text{FINAL SYSTEM CAL. RESPONSE} - \text{INITIAL CAL. RESPONSE}}{\text{SPAN}} \times 100$$

CALIBRATION SUMMARY

SOURCE: F.J GANNON STATION UNIT 3 WDF BASELINE TEST

REASON: RUN FOUR DRIFT CAL

DATE : 05-20-1998 TIME: 13:35 - 13:56

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	ppmSO2	0.0	2.1
1	STACK	ppmSO2	746.3	735.1
2	STACK	%CO2	0.00	0.11
2	STACK	%CO2	10.01	10.12

SYSTEM CALIBRATION BIAS AND DRIFT CALCULATIONS

SOURCE: F.J. GANNON STATION 3 WDF BASELINE TEST

TEST DATE: 05/20/98

RUN NUMBER: 4

SPAN VALUES: 1350 ppm SO2
20 % CO2

	INITIAL VALUES			FINAL VALUES		
	ANALYZER CAL. RESPONSE	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	DRIFT (% OF SPAN)
SO2 ZERO GA	3.2	3.5	0.02	2.1	-0.08	-0.10
SO2 UP-SCAL	737.8	735.2	-0.19	735.1	-0.20	-0.01
CO2 ZERO GA	0.26	0.12	-0.70	0.11	-0.75	-0.05
CO2 UP-SCAL	10.08	10.12	0.20	10.12	0.20	0.00

$$\text{SYSTEM CAL. BIAS} = \frac{\text{SYSTEM CAL. RESPONSE - ANALYZER CAL. RESPONSE}}{\text{SPAN}} \times 100$$

$$\text{DRIFT} = \frac{\text{FINAL SYSTEM CAL. RESPONSE - INITIAL CAL. RESPONSE}}{\text{SPAN}} \times 100$$

G-5 FUEL BLEND BIAS AND DRIFT CALCULATIONS

CONTINUOUS EMISSIONS MONITORING SET-UP

SOURCE: F. J. GANNON STATION UNIT 3 WDF BLEND TEST

DATE: 05-13-1998 TIME: 11:13

A/D CHAN	DESCRIP	UNITS	SPAN	INPUT VOLTAGE	ZERO OFFSET
5	STACK	ppmVOC	10	10.00 V	0%

AVERAGING PERIODS: ONE HOUR,
NO EMISSION RATE CALCULATIONS

CALIBRATION SUMMARY

SOURCE: F. J. GANNON STATION UNIT 3 WDF BLEND TEST

REASON: DIRECT CALIBRATION

DATE : 05-13-1998 TIME: 11:22 - 11:32

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
5	STACK	ppmVOC	0.0	0.0
5	STACK	ppmVOC	2.9	3.0
5	STACK	ppmVOC	5.1	5.2
5	STACK	ppmVOC	8.6	8.6

CALIBRATION SUMMARY

SOURCE: F. J. GANNON STATION UNIT 3 WDF BLEND TEST

REASON: INITIAL SYSTEM CALIBRATION

DATE : 05-13-1998 TIME: 11:32 - 12:10

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
5	STACK	ppmVOC	0.0	0.0
5	STACK	ppmVOC	2.9	2.9
5	STACK	ppmVOC	5.1	5.2
5	STACK	ppmVOC	8.6	8.6

CALIBRATION SUMMARY

SOURCE: F. J. GANNON STATION UNIT 3 WDF BLEND TEST

REASON: RUN ONE DRIFT CALIBRATION

DATE : 05-13-1998 TIME: 13:19 - 13:38

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
5	STACK	ppmVOC	0.0	0.0
5	STACK	ppmVOC	5.1	4.9

CALIBRATION SUMMARY

SOURCE: F. J. GANNON STATION UNIT 3 WDF BLEND TEST

REASON: RUN TWO DRIFT CAL

DATE : 05-13-1998 TIME: 14:45 - 14:53

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
5	STACK	ppmVOC	0.0	0.4
5	STACK	ppmVOC	5.1	5.2

SYSTEM CALIBRATION BIAS AND DRIFT CALCULATIONS

TEST METHOD 25A CORRECTION

F. J. GANNON STATION BOILER 3 WDF BLEND

TEST DATE: 5/13/98

RUN NO. 2

SPAN VALUE: 10 ppm PROPANE

	—INITIAL VALUES—			—FINAL VALUES—		
	ANALYZER CAL. RESPONSE	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	DRIFT (% OF SPAN)
VOC ZERO GA	0.00	0.00	0.00	0.40	4.00	4.00
VOC UP-SCAL	5.20	5.20	0.00	5.20	0.00	0.00

$$\text{SYSTEM CAL. BIAS} = \frac{\text{SYSTEM CAL. RESPONSE - ANALYZER CAL. RESPONSE}}{\text{SPAN}} \text{ X 100}$$

CALIBRATION SUMMARY

SOURCE: F. J. GANNON STATION UNIT 3 WDF BLEND TEST

REASON: RUN THREE DRIFT CAL

DATE : 05-13-1998 TIME: 16:05 - 16:11

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
5	STACK	ppmVOC	0.0	0.1
5	STACK	ppmVOC	5.1	4.9

SYSTEM CALIBRATION BIAS AND DRIFT CALCULATIONS

TEST METHOD 25A CORRECTION

F. J. GANNON STATION BOILER 3 WDF BLEND

TEST DATE: 5/13/98.

RUN NO. 3

SPAN VALUE: 10 ppm PROPANE

	----INITIAL VALUES----			----FINAL VALUES----		
	ANALYZER CAL. RESPONSE	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	DRIFT (% OF SPAN)
VOC ZERO GA	0.00	0.40	4.00	0.10	1.00	-3.00
VOC UP-SCAL	5.20	5.20	0.00	4.90	-3.00	-3.00

$$\text{SYSTEM CAL. BIAS} = \frac{\text{SYSTEM CAL. RESPONSE - ANALYZER CAL. RESPONSE}}{\text{SPAN}} \times 100$$

CALIBRATION SUMMARY

SOURCE: F. J. GANNON STATION UNIT 3 WDF BLEND TEST

REASON: RUN FOUR DRIFT

DATE : 05-13-1998 TIME: 18:32 - 18:39

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
5	STACK	ppmVOC	0.0	0.1
5	STACK	ppmVOC	5.1	5.3

CALIBRATION SUMMARY

SOURCE: F. J. GANNON STATION UNIT 3 WDF BLEND TEST

REASON: RUN FIVE DRIFT CAL

DATE : 05-13-1998 TIME: 19:46 - 19:55

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
5	STACK	ppmVOC	0.0	0.1
5	STACK	ppmVOC	5.1	5.0

SYSTEM CALIBRATION BIAS AND DRIFT CALCULATIONS

TEST METHOD 25A CORRECTION

F. J. GANNON STATION BOILER 3 WDF BLEND

TEST DATE: 5/13/98

RUN NO. 5

SPAN VALUE: 10 ppm PROPANE

	INITIAL VALUES			FINAL VALUES		
	ANALYZER CAL. RESPONSE	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	DRIFT (% OF SPAN)
VOC ZERO GA	0.00	0.10	1.00	0.10	1.00	0.00
VOC UP-SCAL	5.20	5.30	1.00	5.00	-2.00	-3.00

$$\text{SYSTEM CAL. BIAS} = \frac{\text{SYSTEM CAL. RESPONSE - ANALYZER CAL. RESPONSE}}{\text{SPAN}} \times 100$$

BEST AVAILABLE COPY

CONTINUOUS EMISSIONS MONITORING SET-UP

SOURCE: F. J. GANNON STATION UNIT 3 WDF BLEND TEST

DATE: 05-12-1998 TIME: 12:13

A/D CHAN	DESCRIP	UNITS	SPAN	INPUT VOLTAGE	ZERO OFFSET
1	STACK	ppmSO2	1350	10.00 V	0%
2	STACK	%O2	20	5.00 V	20%

AVERAGING PERIODS: ONE HOUR,

EMISSION RATE 1: lb SO2/MMBTU STACK

E = (ppm SO2) (1800) (0.1660E-06) (100/%CO2)

ppm SO2 from A/D Channel 1
%CO2 from A/D Channel 2

CALIBRATION SUMMARY

SOURCE: F. J. GANNON STATION UNIT 3 WDF BLEND TEST

REASON: INITIAL DAILY CAL

DATE : 05-13-1998 TIME: 04:54 - 06:02

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	ppmSO2	0.0	0.7
1	STACK	ppmSO2	746.3	713.8
1	STACK	ppmSO2	1272.0	1286.3
2	STACK	%CO2	0.00	0.05
2	STACK	%CO2	10.01	10.48
2	STACK	%CO2	17.94	18.04

CALIBRATION SUMMARY

SOURCE: F. J. GANNON STATION UNIT 3 WDF BLEND TEST

REASON: RUN ONE DRIFT

DATE : 05-13-1998 TIME: 07:37 - 08:04

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	ppmSO2	0.0	4.9
1	STACK	ppmSO2	746.3	712.1
2	STACK	%CO2	0.00	0.12
2	STACK	%CO2	10.01	10.25

SYSTEM CALIBRATION BIAS AND DRIFT CALCULATIONS

SOURCE: F. J. GANNON STATION BOILER 3 WDF

TEST DATE: 5/13/98

RUN NUMBER: 1

SPAN VALUES 1350 ppm SO_2
20 % CO_2

	------INITIAL VALUES------			------FINAL VALUES------		
	ANALYZER CAL RESPONSE	SYSTEM CAL RESPONSE	SYSTEM CAL BIAS (% OF SPAN)	SYSTEM CAL RESPONSE	SYSTEM CAL BIAS (% OF SPAN)	DRIFT (% OF SPAN)
SO2 ZERO GA	0.7	0.7	0.00	4.9	0.31	0.31
SO2 UP-SCAL	713.8	713.8	0.00	712.1	-0.13	-0.13
CO2 ZERO GA	0.05	0.05	0.00	0.12	0.35	0.35
CO2 UP-SCAL	10.48	10.48	0.00	10.25	-1.15	-1.15

$$\text{SYSTEM CAL. BIAS} = \frac{\text{SYSTEM CAL. RESPONSE - ANALYZER CAL. RESPONSE}}{\text{SPAN}} \times 100$$

$$\text{DRIFT} = \frac{\text{FINAL SYSTEM CAL. RESPONSE - INITIAL CAL. RESPONSE}}{\text{SPAN}} \times 100$$

CALIBRATION SUMMARY

SOURCE: F. J. GANNON STATION UNIT 3 WDF BLEND TEST

REASON: RUN TWO DRIFT

DATE : 05-13-1998 TIME: 09:13 - 09:38

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	ppmSO2	0.0	6.4
1	STACK	ppmSO2	746.3	721.4
2	STACK	%CO2	0.00	0.13
2	STACK	%CO2	10.01	10.26

SYSTEM CALIBRATION BIAS AND DRIFT CALCULATIONS

SOURCE: F. J. GANNON STATION BOILER 3 WDF

TEST DATE: 5/13/98

RUN NUMBER 2

SPAN VALUES 1350 ppm SO2
20 % CO2

	INITIAL VALUES			FINAL VALUES		
	ANALYZER CAL. RESPONSE	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	DRIFT (% OF SPAN)
SO2 ZERO GA	0.7	4.9	0.31	6.4	0.42	0.11
SO2 UP-SCAL	713.8	712.1	-0.13	721.4	0.56	0.69
CO2 ZERO GA	0.05	0.12	0.35	0.13	0.40	0.05
CO2 UP-SCAL	10.48	10.25	-1.15	10.26	-1.10	0.05

$$\text{SYSTEM CAL. BIAS} = \frac{\text{SYSTEM CAL. RESPONSE - ANALYZER CAL. RESPONSE}}{\text{SPAN}} \times 100$$

$$\text{DRIFT} = \frac{\text{FINAL SYSTEM CAL. RESPONSE - INITIAL CAL. RESPONSE}}{\text{SPAN}} \times 100$$

CALIBRATION SUMMARY

SOURCE: F. J. GANNON STATION UNIT 3 WDF BLEND TEST

REASON: RUN THREE DRIFT

DATE : 05-13-1998 TIME: 10:48 - 11:10

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	ppmSO2	0.0	6.4
1	STACK	ppmSO2	746.3	721.5
2	STACK	%CO2	0.00	0.15
2	STACK	%CO2	10.01	10.27

SYSTEM CALIBRATION BIAS AND DRIFT CALCULATIONS

SOURCE: F. J. GANNON STATION BOILER 3 WDF

TEST DATE: 5/13/98

RUN NUMBER 3

SPAN VALUES 1350 ppm SO_2
20 % CO_2

	INITIAL VALUES			FINAL VALUES		
	ANALYZER CAL. RESPONSE	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	DRIFT (% OF SPAN)
SO2 ZERO GA	0.7	6.4	0.42	6.4	0.42	0.00
SO2 UP-SCAL	713.8	721.4	0.56	721.5	0.57	0.01
CO2 ZERO GA	0.05	0.13	0.40	0.15	0.50	0.10
CO2 UP-SCAL	10.48	10.26	-1.10	10.27	-1.05	0.05

$$\text{SYSTEM CAL. BIAS} = \frac{\text{SYSTEM CAL. RESPONSE - ANALYZER CAL. RESPONSE}}{\text{SPAN}} \times 100$$

$$\text{DRIFT} = \frac{\text{FINAL SYSTEM CAL. RESPONSE - INITIAL CAL. RESPONSE}}{\text{SPAN}} \times 100$$

APPENDIX H

CHAIN OF CUSTODY

H-1 BASELINE CHAIN OF CUSTODY

H-2 FUEL BLEND CHAIN OF CUSTODY

H-1 BASELINE CHAIN OF CUSTODY

TAMPA ELECTRIC
A TECO ENERGY COMPANY

BEST AVAILABLE COPY

CORPORATE ENVIRONMENTAL SERVICES
ANALYSIS REQUEST & CHAIN OF CUSTODY

5012 CAUSEWAY BLVD.
TAMPA, FLORIDA 33619
PHONE: 813/228-4111

- [ ] AIR LAB
- [x] FUEL LAB
- [ ] WATER LAB

CLIENT NAME: Cindy Barringer

TELEPHONE: 35-397

SAMPLER(S) NAME(S): C.W. Peterson

PAGE 1 OF 1

- [ ] STANDARD TAT
- [ ] RUSH TAT

SAMPLING DATE	SAMPLING TIME	SAMPLING IDENTIFICATION	MATRIX TYPE	COAL SAMPLE			60 Mesh Residual Moisture ASTM D 3173	Total Moisture ASTM D 3302	Percent Sulfur ASTM D 4239	BTU ASTM 240	COMMENTS
5/20/98	0100	#3 unit Stack test S-6165 / "Baseline"		1							AA 42966

NUMBER OF CONTAINERS SUBMITTED

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
David Bright	5/20/98	12:20	Glenn Brune	5/20/98	1220
Glenn Brune	5/20/98	1550	Tom Toombs	5/20/98	1550

PURPOSELY LEFT BLANK

123r5w\work\water\f-fld-01.wk4

TAMPA ELECTRIC
A TECO ENERGY COMPANY

BEST AVAILABLE COPY

CORPORATE ENVIRONMENTAL SERVICES
ANALYSIS REQUEST & CHAIN OF CUSTODY

5012 CAUSEWAY BLVD.
TAMPA, FLORIDA 33619
PHONE: 813/228-4111

- [ ] AIR LAB
- [x] FUEL LAB
- [ ] WATER LAB

CLIENT NAME: Cindy Barringer
TELEPHONE: 35-397

SAMPLER(S) NAME(S): Don H. Bught

PAGE 1 OF 1

- [ ] STANDARD TAT
- [ ] RUSH TAT

MATRIX TYPE: COAL SAMPLE

REQUIRED ANALYSES: 60 Mesh Residual Moisture ASTM D 3173; Total Moisture ASTM D 3302; Percent Sulfur ASTM D 4239; BTU ASTM 240

SAMPLING DATE	SAMPLING TIME	SAMPLING IDENTIFICATION		COAL SAMPLE			60 Mesh Residual Moisture ASTM D 3173	Total Moisture ASTM D 3302	Percent Sulfur ASTM D 4239	BTU ASTM 240	COMMENTS
5/21/98	0800 1000 1200	#3 unit stack test S-6166		X							AA 43010

NUMBER OF CONTAINERS SUBMITTED

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
Don H. Bught	5/22/98	1303	Glenn Bruce	5/22/98	1303
Glenn Bruce	~~5/5/98~~ 5/22/98	1320	Michael A. Sh[illegible]	5/22/98	13:21

PURPOSELY LEFT BLANK

123r5w\work\water\f-fld-01.wk4

TAMPA ELECTRIC COMPANY
SAMPLE CHAIN OF CUSTODY

GENERATING STATION F. J. GANNON STATION

SOURCE IDENTIFICATION BOILER NO. 3 (WOF BASELINE)

DATE OF TEST 5-20-98

POLLUTANT SAMPLED PARTICULATE - SOOT BLOWING

SAMPLE RECOVERY

LOCATION CORPORATE ENVIRONMENTAL SERVICES

DATE / TIME 5-22-98 1115 TO

SIGNATURE [signature]

TITLE TECHNICIAN

SAMPLE ANALYSIS

LOCATION **CORPORATE ENVIRONMENTAL SERVICES**

DATES 5-27-98 0705 TO 5-27-98 1345

SIGNATURE [signature]

TITLE TECHNICIAN

CONTAINER CODE	SAMPLE IDENTIFICATION	ANALYTICAL METHOD
THIMBLE NO	19x90 MICRO FIBER FILTER	US EPA METHOD 17
001336	RUN 1S	
001339	RUN 2S	
001340	RUN 3S	
001330	BLANK	
BEAKER NO	ACETONE WASH SAMPLES	
AIR	RUN 1S	
AIR	RUN 2S	
AIR	RUN 3S	
AIR	BLANK	

RAM 5/28/98

SAMPLE RECOVERY AND INTEGRITY DATA

Plant F J GANNON STATION Sample location BOILER NO. 3

Field Data Checks

Sample recovery personnel BRUCE RODRIGUEZ

Person with direct responsibility for recovered samples

Sample Number	Sample Identification Number	Date and Time of Recovery	Liquid Level Marked	Stored in refrigerated Container
1	RUN 1S HCL, H_2SO_4	5-20-98 0905	✓	✓
2	RUN 2S HCL, H_2SO_4	5-20-98 1030	✓	✓
3	RUN 3S HCL H_2SO_4	5-20-98 1150	✓	✓
4	RUN 1S HCL NaOH	5-20-98 0909	✓	✓
5	RUN 2S HCL, NaOH	5-20-98 1032	✓	✓
6	RUN 3S HCL, NaOH	5-20-98 1152	✓	✓
Blank	HCL, H_2SO HCL, NaOH	5-20-98 1132 5-20-98 1120	✓	✓

Remarks

Signature of field sample trustee Bruce Rodriguez

Laboratory Data Checks

Lab person with direct responsibility for recovered samples Bret Nicholas

Date recovered samples received 5/20/98

Analyst Bret Nicholas

Sample Number	AA43009 ~~Sample~~ Identification Number	Date and Time of Recovery	Liquid Level Marked	Stored in refrigerated Container
1	Run 1S H_2SO_4	6/2/98 0800	✓	✓
2	Run 2S H_2SO_4	6/2/98 0800	✓	✓
3	Run 3S H_2SO_4	6/2/98 0800	✓	✓
4	Run 1S NaOH	6/2/98 0800	✓	✓
5	Run 2S NaOH	6/2/98 0800	✓	✓
6	Run 3S NaOH	6/2/98 0800	✓	✓
Blank	H_2SO_4 NaOH	6/2/98 0800 6/2/98 0800	✓ ✓	✓ ✓

Remarks

Signature of lab sample trustee Rick Christenbury 5/20/98 @ 14:40

SAMPLE RECOVERY AND INTEGRITY DATA

Plant F. J. GANNON STATION Sample location BOILER NO 3

Field Data Checks

Sample recovery personnel BRUCE RODRIGUEZ

Person with direct responsibility for recovered samples

Sample Number	Sample Identification Number	Date and Time of Recovery	Liquid Level Marked	Stored in refrigerated Container
1	RUN 4S, ISOPROPANOL	5-21-98 0925	✓	✓
2	RUN 5S, ISOPROPANOL	5-21-98 1112	✓	✓
3	RUN 6S, ISOPROPANOL	5-21-98 1301	✓	✓
4	RUN 4S, H_2O_2	5-21-98 0932	✓	✓
5	RUN 5S, H_2O_2	5-21-98 1118	✓	✓
6	RUN 6S, H_2O_2	5-21-98 1302	✓	✓
Blanks	ISOPROPANOL H_2O_2	5-21-98 1125 5-21-98 1130	✓	✓

Remarks

Signature of field sample trustee Bruce Rodriguez

Laboratory Data Checks

Lab person with direct responsibility for recovered samples Bret Nicholas

Date recovered samples received 5/21/98

Analyst Bret Nicholas

AA43009

Sample Number	Sample Identification Number	Date and Time of Recovery	Liquid Level Marked	Stored in refrigerated Container
1	Run 4s, Isopropanol	6/4/98 1035	✓	✓
2	Run 5s, Isopropanol	6/4/98 1035	✓	✓
3	Run 6S, Isopropanol	6/4/98 1035	✓	✓
4	Run 4s, H_2O_2	6/4/98 1035	✓	✓
5	Run 5s, H_2O_2	6/4/98 1035	✓	✓
6	Run 6s, H_2O_2	6/4/98 1035	✓	✓
Blank	ISOPROPANOL H_2O_2	6/4/98 1035 6/4/98 1035	✓ ✓	✓ ✓

Remarks

Signature of lab sample trustee Rick Christenberry 5/22/98 @ 08:20

INSTRUCTIONS FOR USE OF ENVIRONMENTAL PROTECTION AGENCY STATIONARY SOURCE COMPLIANCE HCl SAMPLES

Sample background:

The HCl air sampling procedure specifies sample collection for sixty minutes at a flow rate of 2L/min. The impinger solution is then quantitatively transferred to a 100 mL volumetric flask and diluted to the mark with deionized water.

Sample preparation: (for IC analysis)

HCl audit solutions have been prepared to simulate these diluted impinger samples. However, the audit solutions may require further dilution to bring them within the calibration range of the instrument being used for the analysis. This step is left to the judgement of the analyst.

Note: To minimize interference, use eluent instead of distilled H_2O.

Calculations:

Report concentration results of sample, **as received**, in **mg/L** of Cl. ((S-B) of Eq. 26-2 of Method 26)

Results:

Audit results and compliance test results are to be transmitted by phone and/or by writing to the agency requiring the test.

REPORT RESULTS TO:

~~Louis Nichols~~

~~FL DER~~

~~(904) 488-6140~~

STERLIN WOODARD OR
COMPLIANCE REPRESENTATIVE
HCEPC
(813) 272-5530

[signature]

H-2 FUEL BLEND CHAIN OF CUSTODY

TAMPA ELECTRIC COMPANY
SAMPLE CHAIN OF CUSTODY

GENERATING STATION F. J. GANNON STATION

SOURCE IDENTIFICATION BOILER NO. 3

DATE OF TEST 5-13-98

POLLUTANT SAMPLED PARTICULATE - SOOTBLOWING (W/PF BLEND)

SAMPLE RECOVERY

LOCATION CORPORATE ENVIRONMENTAL SERVICES

DATE / TIME 5-14-98 @ 1300

SIGNATURE [signature]

TITLE TECHNICIAN

SAMPLE ANALYSIS

LOCATION **CORPORATE ENVIRONMENTAL SERVICES**

DATES 5-15-98 @ 0745 TO 5-19-98

SIGNATURE [signature] [signature]

TITLE TECHNICIAN

CONTAINER CODE	SAMPLE IDENTIFICATION	ANALYTICAL METHOD
THIMBLE NO.	19x19mm GLASS MICRO FIBER FILTER	USEPA
001329	BLANK	METHOD
001332	RUN 1-S	17
001333	RUN 2-S	
001337	RUN 3-S	
BEAKER NO.	ACETONE WASH SAMPLES	
AIR 34	BLANK	
AIR 52	RUN 1-S	
AIR 53	RUN 2-S	
AIR 54	RUN 3-S	

[initials] 5/26/98

SAMPLE RECOVERY AND INTEGRITY DATA

Plant FT GANNON Sample location BOILER NO 3

Field Data Checks

Sample recovery personnel BRUCE RODRIGUEZ

Person with direct responsibility for recovered samples

Sample Number	Sample Identification Number	Date and Time of Recovery	Liquid Level Marked	Stored in refrigerated Container
1	1S HCL, H_2SO_4	0822 5-13-98	✓	✓
2	1S HCL, NaOH	0824 5-13-98	✓	✓
3	2S HCL, H_2SO_4	5-13-98	✓	✓
4	2S HCL, NaOH	5-13-98	✓	✓
5	3S HCL, H_2SO_4	5-13-98	✓	✓
6	3S HCL, NaOH	5-13-98	✓	✓
Blank	HCL, H_2SO_4	1135 5-13-98	✓	✓

Remarks

Signature of field sample trustee Bruce Rodriguez

Laboratory Data Checks

Lab person with direct responsibility for recovered samples Bret Nicholas

Date recovered samples received 5/13/98

Analyst Bret Nicholas

AA 42997

Sample Number	Sample Identification Number	Date and Time of Recovery	Liquid Level Marked	Stored in refrigerated Container
1	1S H_2SO_4	6/2/98 0800	✓	✓
2	1S NaOH	6/2/98 0800	✓	✓
3	2S H_2SO_4	6/2/98 0800	✓	✓
4	2S NaOH	6/2/98 0800	✓	✓
5	3S H_2SO_4	6/2/98 0800	✓	✓
6	3S NaOH	6/2/98 0800	✓	✓
Blank	H_2SO_4	6/2/98 0800	✓	✓

Remarks

Signature of lab sample trustee Bret A. Nicholas 5/14/98 @ 1039

SAMPLE RECOVERY AND INTEGRITY DATA

Plant F. J. GANNON Sample location BOILER NO 3

Field Data Checks

Sample recovery personnel BRUCE RODRIGUEZ

Person with direct responsibility for recovered samples ____________

Sample Number	Sample Identification Number	Date and Time of Recovery	Liquid Level Marked	Stored in refrigerated Container
1	4S ISOPROPANOL	1420 5-13-98	✓	✓
2	4S H_2O_2	1422 5-13-98	✓	✓
3	5S ISOPROPANOL	1615 5-13-98	✓	✓
4	5S H_2O_2	1622 5-13-98	✓	✓
5	6S ISOPROPANOL	1812 5-13-98	✓	✓
6	6S H_2O_2	1816 5-13-98	✓	✓
Blank	H_2O_2	1705 5-13-98	✓	✓

Remarks ____________

Signature of field sample trustee Bruce Rodriguez

Laboratory Data Checks

Lab person with direct responsibility for recovered samples Bret Nicholas

Date recovered samples received 5/13/98

Analyst Bret Nicholas

AA42997

Sample Number	Sample Identification Number	Date and Time of Recovery	Liquid Level Marked	Stored in refrigerated Container
1	4S Isopropanol	6/4/98 1035	✓	✓
2	4S H_2O_2	6/4/98 1035	✓	✓
3	5S Isopropanol	6/4/98 1035	✓	✓
4	5S H_2O_2	6/4/98 1035	✓	✓
5	6S Isopropanol	6/4/98 1035	✓	✓
6	6S H_2O_2	6/4/98 1035	✓	✓
Blank	H_2O_2	6/4/98 1035	✓	✓

Remarks ____________

Signature of lab sample trustee Bret A. Nicholas 5/14/98 @ 1039

SAMPLE RECOVERY AND INTEGRITY DATA

Plant F.J. GANNON Sample location BOILER 03

Field Data Checks

Sample recovery personnel BRUCE RODRIGUEZ

Person with direct responsibility for recovered samples

Sample Number	Sample Identification Number	Date and Time of Recovery	Liquid Level Marked	Stored in refrigerated Container
1	7S ISOPROPANOL	2113 ~~2013~~ 5-13-98	✓	✓
2	7S H_2O_2	2118 5-13-98	✓	✓
BLANK ~~3~~	HCL, NaOH	1130 5-13-98	✓	✓
4				
5				
6				
Blank	ISOPROPANOL	1707 5-13-98	✓	✓

Remarks

Signature of field sample trustee Bruce Rodriguez

Laboratory Data Checks

Lab person with direct responsibility for recovered samples Bret Nicholas

Date recovered samples received 5/13/98

Analyst Bret Nicholas

AA42997

Sample Number	Sample Identification Number	Date and Time of Recovery	Liquid Level Marked	Stored in refrigerated Container
1	7S ISOPROPANOL	6/4/98 1035	✓	✓
2	7S H_2O_2	6/4/98 1035	✓	✓
~~3~~ Blank	NaOH	6/2/98 0800	✓	✓
BCN 6/4/98 ~~4 Blank~~				
5				
6				
Blank	ISOPROPANO	6/4/98 1035	✓	✓

Remarks

Signature of lab sample trustee Bret A. Nicholas 5/14/98 @ 1039

INSTRUCTIONS FOR USE OF ENVIRONMENTAL PROTECTION AGENCY STATIONARY SOURCE COMPLIANCE HCl SAMPLES

Sample background:

The HCl air sampling procedure specifies sample collection for sixty minutes at a flow rate of 2L/min. The impinger solution is then quantitatively transferred to a 100 mL volumetric flask and diluted to the mark with deionized water.

Sample preparation: (for IC analysis)

HCl audit solutions have been prepared to simulate these diluted impinger samples. However, the audit solutions may require further dilution to bring them within the calibration range of the instrument being used for the analysis. This step is left to the judgement of the analyst.

Note: To minimize interference, use eluent instead of distilled H_2O.

Calculations:

Report concentration results of sample, **as received**, in **mg/L** of Cl. ((S-B) of Eq. 26-2 of Method 26)

Results:

Audit results and compliance test results are to be transmitted by phone and/or by writing to the agency requiring the test.

REPORT RESULTS TO:

~~Louis Nichols~~

~~FL DER~~

~~(904) 488-6140~~

STERLING WOODARD OR
COMPLIANCE REP.
(813) 272-5530

APPENDIX I

PROJECT PARTICIPANTS

PROJECT PARTICIPANTS

Corporate Environmental Services

David Smith	Sr. Environmental Technician- Test Team Supervisor
Robert Barthelette	Technician
Robert Dorey	Senior Chemist- Lab Services Supervisor
Steve Kelly	Associate Technician
Raymond McDarby	Sr. Environmental Technician- Quality Assurance Specialist
Jim Nail	Senior Engineer- Air Programs Supervisor
Glenn Naslund	Environmental Technician
Lynn Robinson	Administrator
Bruce Rodriguez	Technician
Jeffrey Sellars	Associate Technician

Environmental Planning

Theresa Watley	Consulting Engineer

F. J. Gannon Station

Cindy Barrringer	Environmental Coordinator
Sam DeCubellis	Station Engineer

ATTACHMENT E

SUPPLEMENTAL INFORMATION

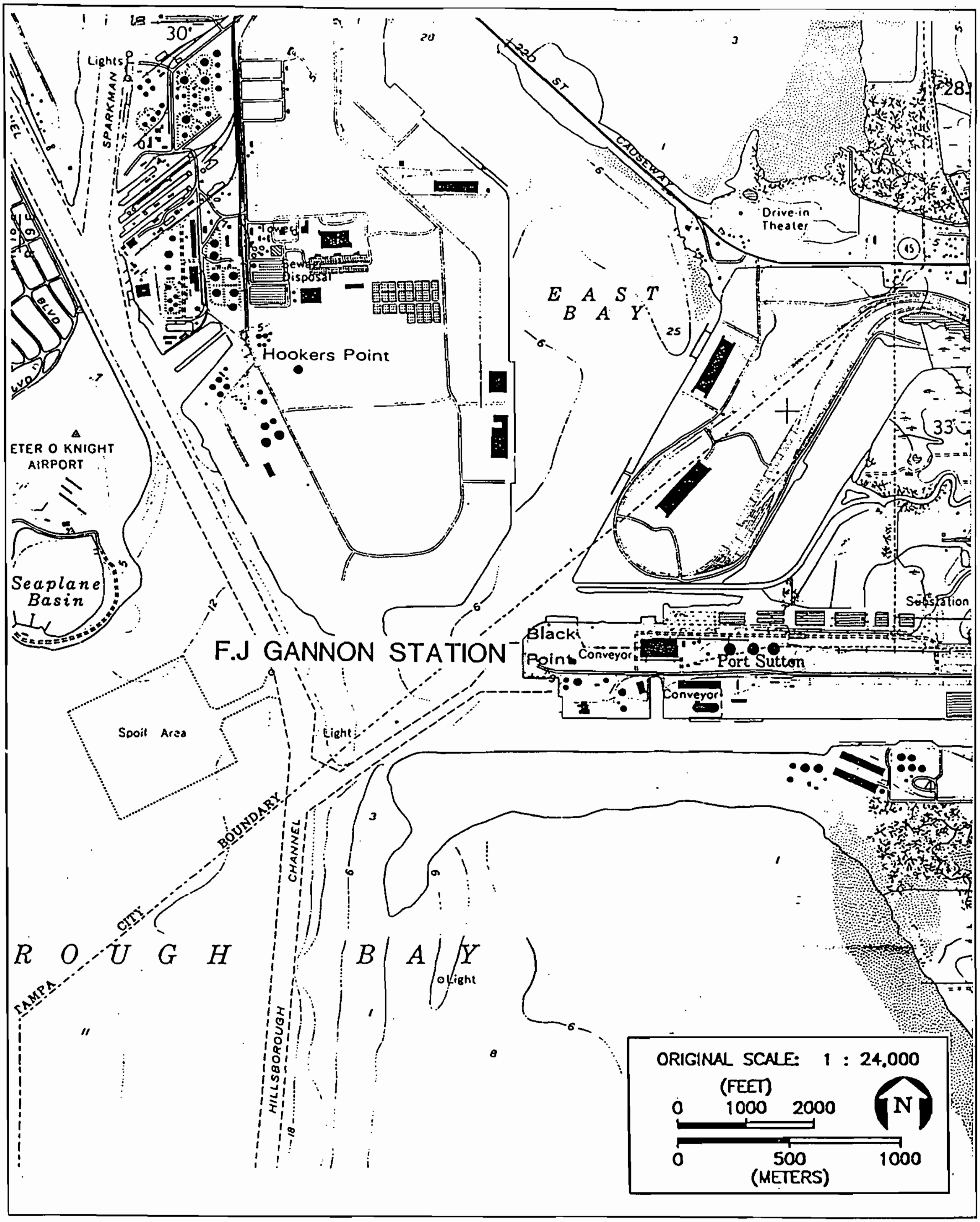


FIGURE II.E.1.1.

F.J. GANNON STATION AREA MAP

Source: USGS Quad, Tampa, FL 1981.

TECO
TAMPA ELECTRIC

C:\ACAD\98573\COMBUST

07/30/99 14:46:06

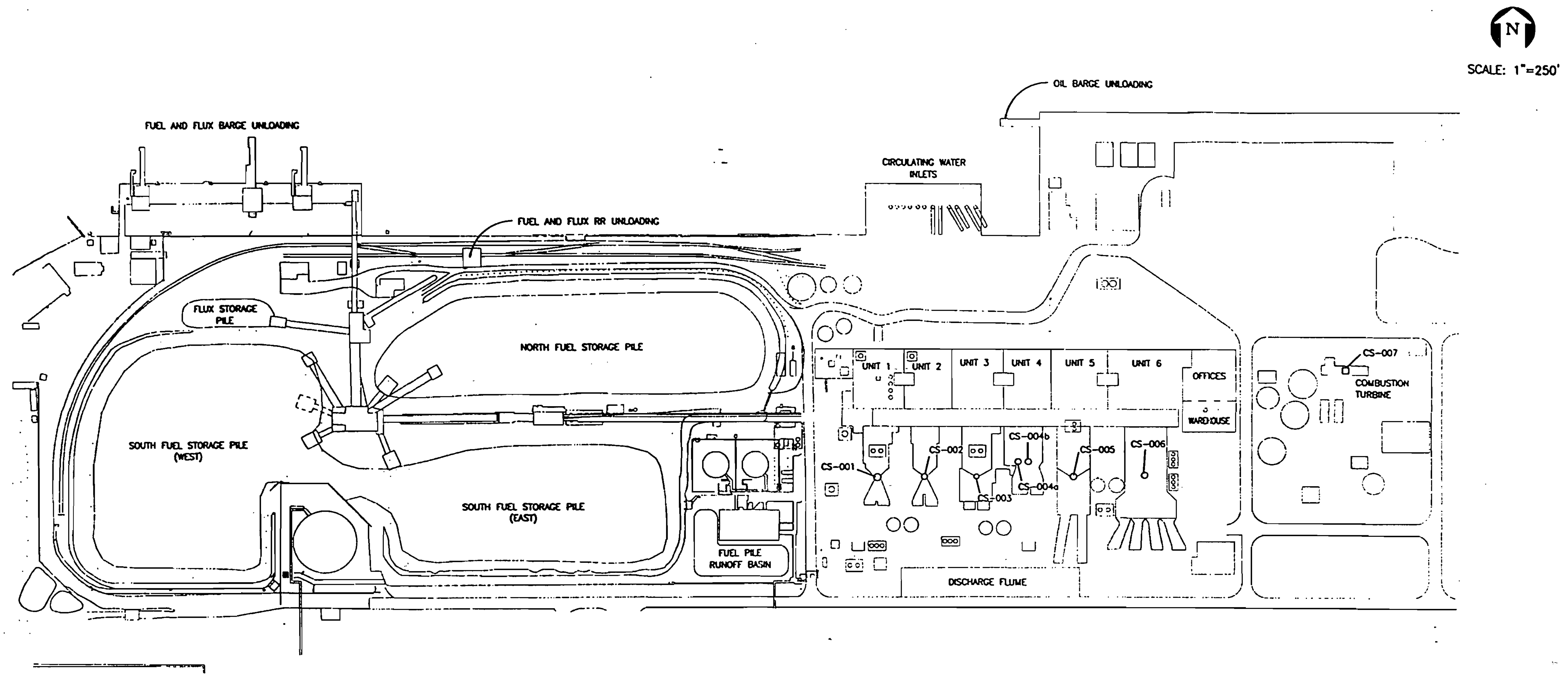


FIGURE II.E.2.1.

F.J. GANNON STATION

COMBUSTION EMISSION SOURCES

Source: TEC, 1996; ECT, 1996.

TECO
TAMPA ELECTRIC

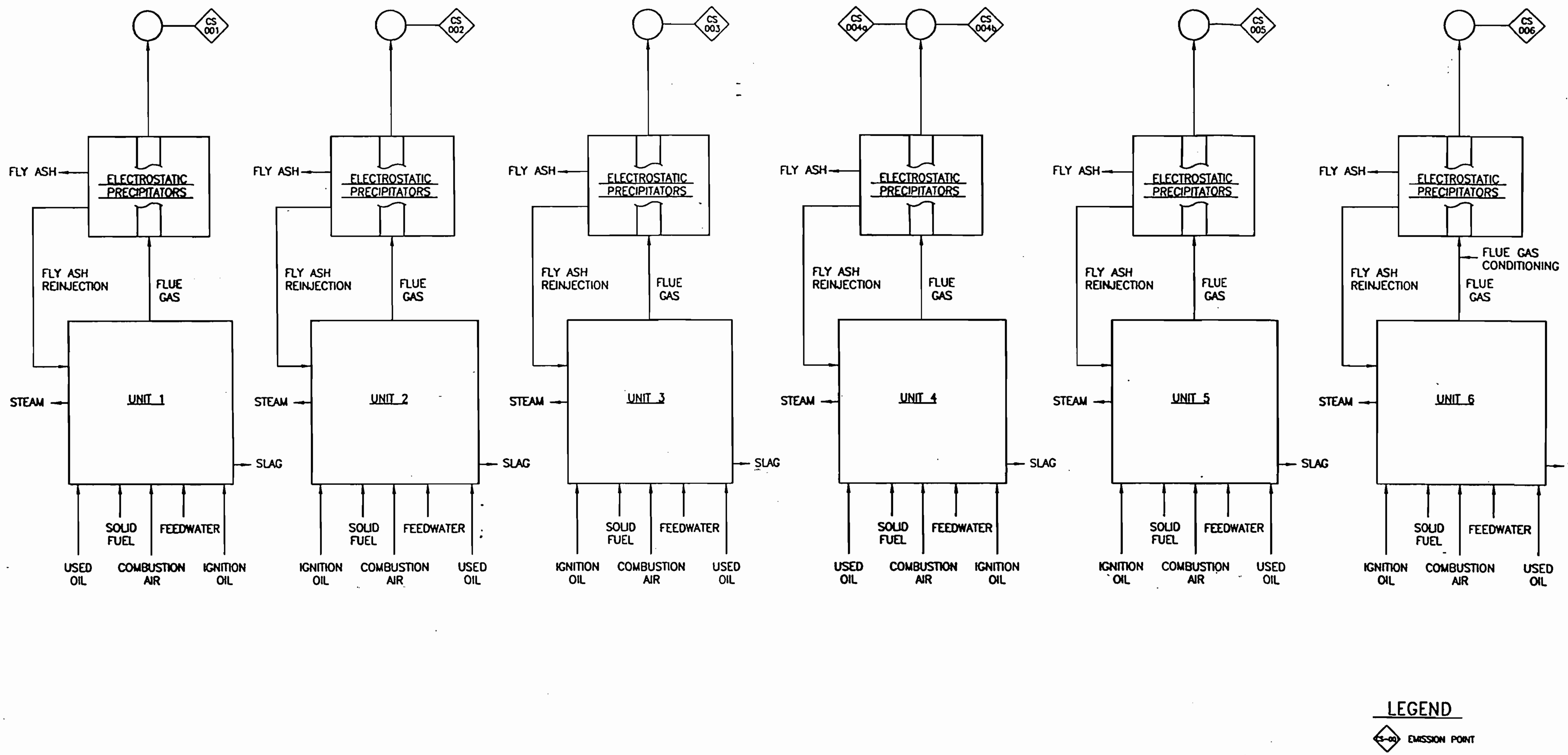


FIGURE II.E.3.1.

F.J. GANNON STATION

BOILER PROCESS FLOW DIAGRAM

Source: ECT, 1996.

TECO
TAMPA ELECTRIC