HDR Henningson, Durham & Richardson
8404 Indian Hills Drive
Omaha, NE 68114
(402) 399-1000

AUG 1981
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A Q M

August 13, 1981

Mr. Clair Fancy
State of Florida
Dept. of Environmental Regulation
Twin Towers
2600 Blair Stone Road
Tallahassee, Florida 32201

Reference: Transmittal of City of Tampa's
Application for Air Quality Permits

Dear Mr. Fancy:

Enclosed are ten (10) copies of the City of Tampa's Application to Construct an Air Pollution Source. The cover letter by Dr. Richard Garrity discusses how the city would prefer the permits to be issued. Also, enclosed are one (1) copy each of:

1. "Proceeding of the International Conference on European Waste-to-Energy Technology," October 29-31, 1980.
2. "Disposal of PCB's in California", September 19, 1980, California ARB.
3. "Proposed California Air Resources Board Policy Regarding Incineration as an Acceptable Technology for PCB Disposal," March 25, 1981.
4. "Health Effects of PCB's, PCDD's and PCDF's," September 25, 1980, California ARB.
5. "Dioxin from Combustion Sources," December 29, 1980, American Society of Mechanical Engineers.
6. "Municipal Incineration Emission Estimates for Onondaga County Source Recovery Project to O'Brien and Dere," March, 1981, Arthur D. Little, Cambridge, Massachusetts.
7. One (1) copy of the modeling done for the application. The code is in the form of 17x, 27x. The 17x represents the nearest 5 rings for the year. 7x and 27 x represent the far 5 rings for the year 7x.

The information from the Onondaga hearing has been requested and will be forwarded as soon as it is received. Included in that package will be the Hearing Examiner's Report that came down on August 6, 1981.

Architecture
Engineering
Planning
Systems
Sciences

Alexandria
Atlanta
Austin
Charlotte
Chicago
Dallas
Denver
Helena
Houston
Knoxville
Minneapolis
Norfolk
Omaha
Pensacola
Phoenix
Santa Barbara
Seattle
Washington, D.C.

To allow for expeditious transfer of information, the official notices that you must issue should be sent to Dale Twachtmann, City of Tampa with copies to Joe Murdoch, City of Tampa and Easel Roberts, HDR. Additional information requests should be sent to Easel Roberts, HDR, with a copy to Joe Murdoch, City of Tampa.

The twenty dollar ($20) check that must accompany an application will come under separate cover from Dick Cox, City of Tampa.

If we can facilitate the review of this permit application in any manner, please contact Joe Murdoch or myself.

Sincerely,

HENNINGSON, DURHAM & RICHARDSON, INC.

Easel Roberts

Easel Roberts
Chemical Engineer
Solid Waste/Resource Recovery

ER:sr

cc: Rick Garrity
City of Tampa

HDR Henningson, Durham & Richardson

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Easel Roberts
Chemical Engineer
Solid Waste/Resource Recovery

ER:sr

cc: Rick Garrity
City of Tampa

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

Nº 33579

RECEIPT FOR APPLICATION FEES AND MISCELLANEOUS REVENUE

Received from ____________________ Date ____________

Address ____________________ Dollars $ ____________

Applicant Name & Address ____________________

Source of Revenue ____________________

Revenue Code ____________ Application Number ____________

By ____________________

CITY OF TAMPA

Bob Martinez, Mayor
McKAY BAY REFUSE-TO-ENERGY PROJECT

July 23, 1981

State of Florida
Department of Environmental Regulation
Twin Towers
2600 Blair Stone Road
Tallahassee, Florida 32201

Attention: Mr. Clair Fancy

Re: Application for Air Quality Permits, McKay Bay Refuse-to-Energy Project

Dear Mr. Fancy:

The attached document is the City of Tampa's application for the air quality permits required for the McKay Bay Refuse-to-Energy Project. The City is participating as lead agency in the development of a program to convert refuse into energy in the form of electricity. The McKay Bay Refuse-to-Energy Project is the culmination of three years of planning efforts by the local governments of Hillsborough County. We feel the project is a progressive approach, consistent with the policies of the Federal and State governments and the desires of the local residents.

The project will consist of two facilities; the rehabilitation of the closed Tampa Municipal Incinerator and the construction of a new refuse to energy plant adjacent to the incinerator. Although we are submitting the applications for these facilities simultaneously, we request that separate permits be issued. Additionally, we request that you review our application for compliance with Federal and Florida P.S.D. rules, Florida State Air rules, and New Source rules and regulations.

We wish to thank you for your efforts to date and look forward to continued cooperation on this issue. If you require additional information or have questions concerning our submittal, please contact me or my staff at 813-223-8090.

Very truly yours,

Richard D Garrity

Richard D. Garrity, PhD
Urban Environmental Coordinator

RDG/kpc
cc: Dale H. Twachtmann

City Hall Plaza, 5N • Tampa, Florida 33602 • 813/223-8072, 223-8082

PERTINENT APPLICANT INFORMATION

Applicant's Official Name: City of Tampa

Address:
306 E. Jackson
Tampa, Florida 33602

Name and Title of Business Head:
Robert Martinez, Mayor
City of Tampa

Name and Title and Address of Representative responsible for obtaining certification:
Dale H. Twachtmann, Administrator
Water Resource and Public Works
8th Floor N. City Hall Plaza
Tampa, Florida 33602

Site Location:
County - Hillsborough
Nearest Incorporated City - Tampa
Latitude - 27° 56' 51" N
Longitude - 82° 25' 14" W

Name Plate Generating Capacity of Proposed Facilities: 45 Megawatts

REMARKS: The McKay Bay Refuse-To-Energy Project is being constructed for the disposal of solid waste and the subsequent recovery of energy and materials. The economic impact of delays to the project are substantial. For example, using a 12 percent escalation rate, the increase in construction cost for each day the implementation process is delayed beyond the recommended schedule is $58,350. The magnitude of this increase only emphasizes the importance of timely approval of the permit application.

Professional Engineer Submitting Application

Name: R. Lee Torrens, P.E.

Florida Registration Number: 21274

Date: July, 1981

Signature: ______________________
R. Lee Torrens

Address and Phone Number:
Henningson, Durham & Richardson, Inc.
8404 Indian Hills Drive
Omaha, Nebraska 68114

EXECUTIVE ORDER

NO. 81-4

WHEREAS, the participating governments of Hillsborough County have taken official action to modify the Amendment and Restatement of Interlocal Agreement for Administration, Construction and Operation of a Resource Recovery Program, effective June 8, 1981; and

WHEREAS, the City of Tampa has been designated as the lead agency responsible for proceeding with the implementation of the program; and

WHEREAS, certain employees, funds, and other assets of the program are transfered to the City of Tampa effective this date;

NOW, THEREFORE,

By virtue of the authority vested in me as the Mayor of the City of Tampa by the Revised Charter of the City of Tampa of 1975, and the Laws of the State of Florida, I do hereby prescribe and promulgate by Executive Order an addition to the organization of the administrative structure of the City of Tampa as follows:

PART I -- ESTABLISHMENT OF THE MCKAY BAY REFUSE-TO-ENERGY PROJECT.

Section 1.01 The McKay Bay Refuse-to-Energy Project is hereby established.

Section 1.02 The project is the direct administrative responsibility of the Administrator of Water Resources & Public Works, who will set forth additional administrative structure as necessary.

Section 1.03 All departments of the City that have coordination responsibilities with this project for the care of funds, personnel, and other assets or for assisting in its other efforts are hereby notified of the urgency of the project and the need for decisive and cooperative action to expedite its mission.

PART II. EFFECTIVE DATE

Section 1.01 This order shall take effect on June 8, 1981.

Bob Martinez
Mayor

DATE:

June 8, 1981

EXECUTIVE SUMMARY

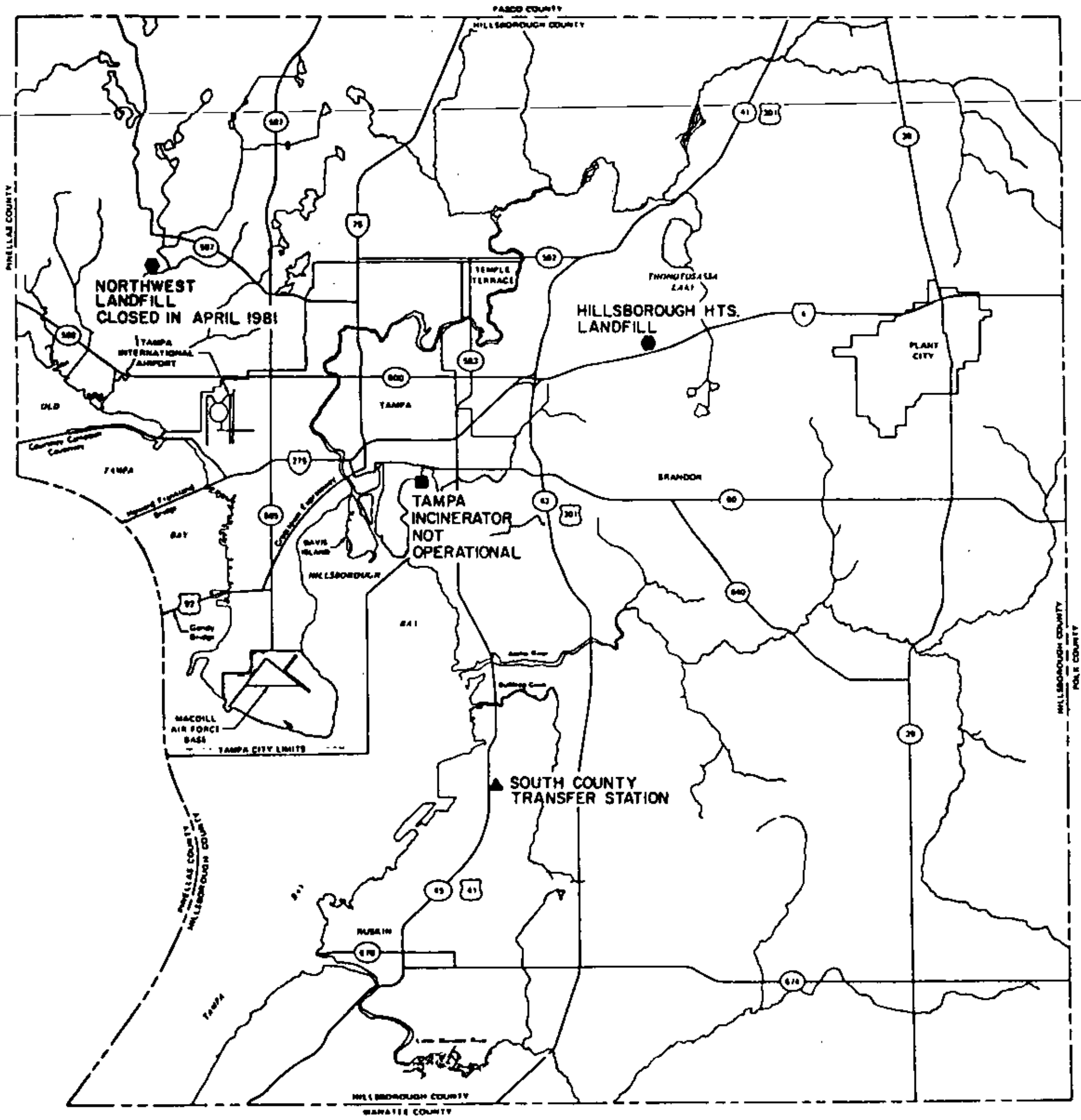
EXECUTIVE SUMMARY

Background

In Hillsborough County, with the City of Tampa as the lead agency under a negotiated interlocal agreement, there has been an increased interest in solid waste disposal and the concept of energy recovery from solid wastes. This has been stimulated by an increased awareness of the environmental and siting problems associated with past disposal methods, and by the increased cost of energy. Each of the cities in Hillsborough County maintains a solid waste collection system within its respective boundaries, while the County is responsible for the collection system in the unincorporated areas. Residential waste is usually collected twice a week, with more frequent collections for commercial waste.

The solid waste generated in Hillsborough County is currently disposed of in the Hillsborough Heights Landfill. In previous years other landfills and the Tampa incinerator were used for solid waste disposal but these are now closed. The Ruskin Landfill operated until August 1, 1978 when the waste they were handling was diverted to the Taylor Road Landfill. The Plant City Landfill operated until October 1, 1979 when this waste was diverted to the Taylor Road Landfill. The City of Tampa operated its incinerator until December 31, 1979 when it was closed because of air and water pollution problems. When this facility ceased operation, those wastes were also diverted to the Taylor Road Landfill. Hillsborough Heights replaced the adjacent Taylor Road Landfill in February 1980. In April 1981 the Northwest Landfill was closed and its wastes were diverted to Hillsborough Heights. Figure 1 shows the locations of solid waste facilities in Hillsborough County.

Because of landfill capacity limitations and environmentally imposed deadlines concerning the only operating waste disposal site, the City, as lead agency, has initiated actions to site, design and permit a new landfill by March 1982. The new landfill will be used for both a residue disposal site for the proposed resource recovery system and as an emergency back-up system for disposal of raw municipal solid waste in the event of a system failure.



EXISTING
SOLID WASTE FACILITIES

HILLSBOROUGH COUNTY

FIGURE 1

Resource Recovery Plan

In September 1980, the Board of County Commissioners of Hillsborough County approved a resource recovery plan to minimize solid waste management costs by converting the municipal solid waste to energy and secondary materials. The revenues from the energy and secondary materials would help decrease the total disposal cost.

As presently envisioned, the resource recovery plan has three parts: 1) the rehabilitation and enlargement of the existing Tampa Incinerator; 2) the construction of a new resource recovery facility; and 3) the siting of a new landfill for residue disposal.

Facility 1

Facility 1 is located on a 14 acre site adjacent to McKay Bay, south of U.S. Route 60. Figure 2 is the site plan of the incinerator as it presently exists.

The incinerator system consists of three mass burn combustion trains without energy recovery, based upon the Volund technology. Each unit is rated at 250 TPD. Design engineers have inspected the incinerator, and it can be rehabilitated and converted into a resource recovery system capable of generating electricity for sale to TECO. The rehabilitation of the incinerator will include the addition of waste heat boilers, electrostatic precipitators for particulate control, and turbine generators, with all support equipments and instrumentation. The inplace combustion system will also be modified to bring the facility into "like new" operating condition for long-term operation, and design features of modern refuse to energy systems will be incorporated.

Figure 3 shows a potential equipment configuration, with a boiler and electrostatic precipitator added to the existing equipment.

Three 250 tpd combustion trains are currently in place at the Incinerator, with space for a fourth unit. The fourth unit will be added, thus increasing the design capacity of the facility to 1000 TPD. By considering the online equipment availability, approximately 300,000 tons per year of solid waste can be disposed of by the facility.

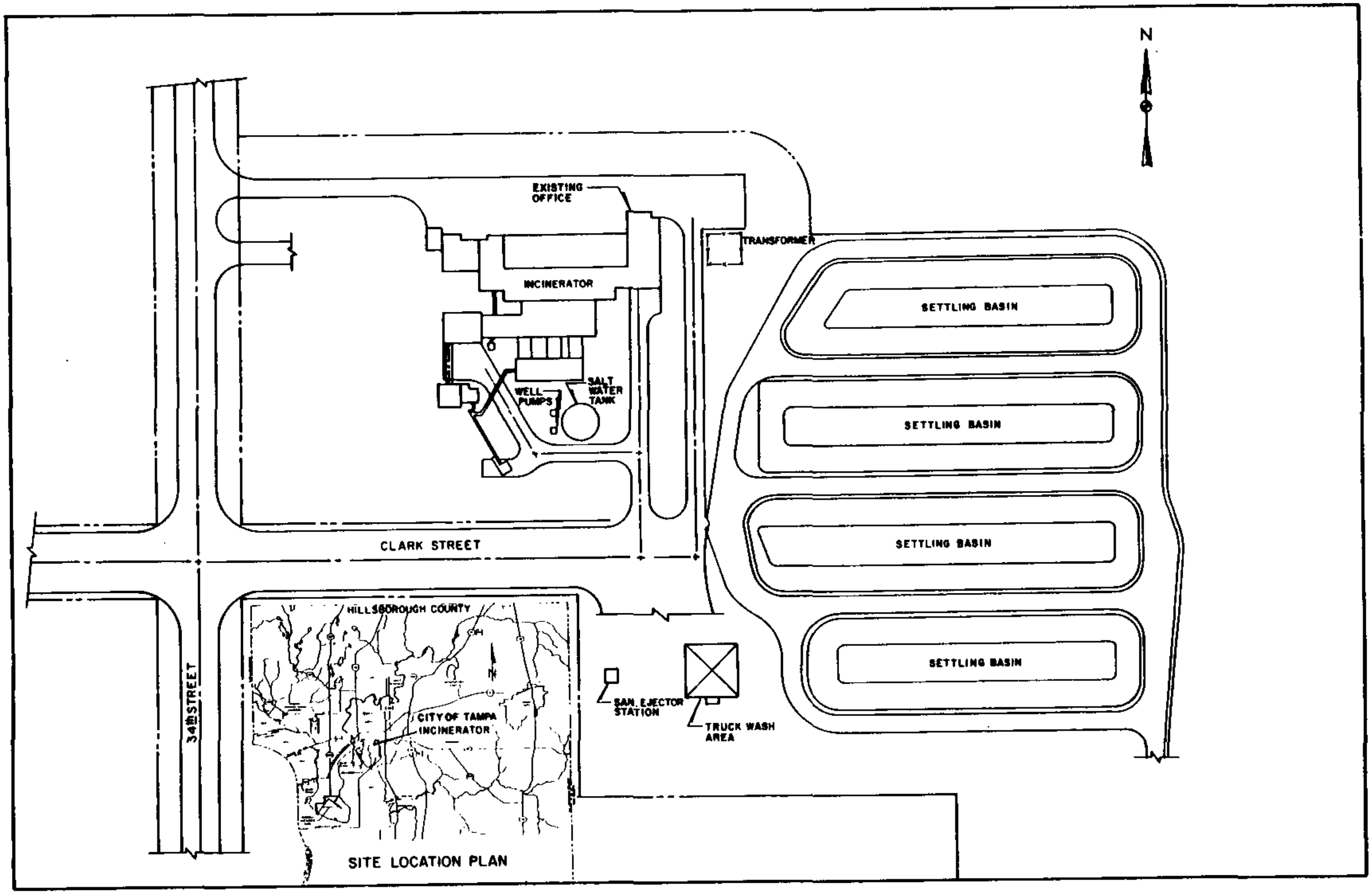


FIGURE 2

SITE PLAN OF TAMPA INCINERATOR

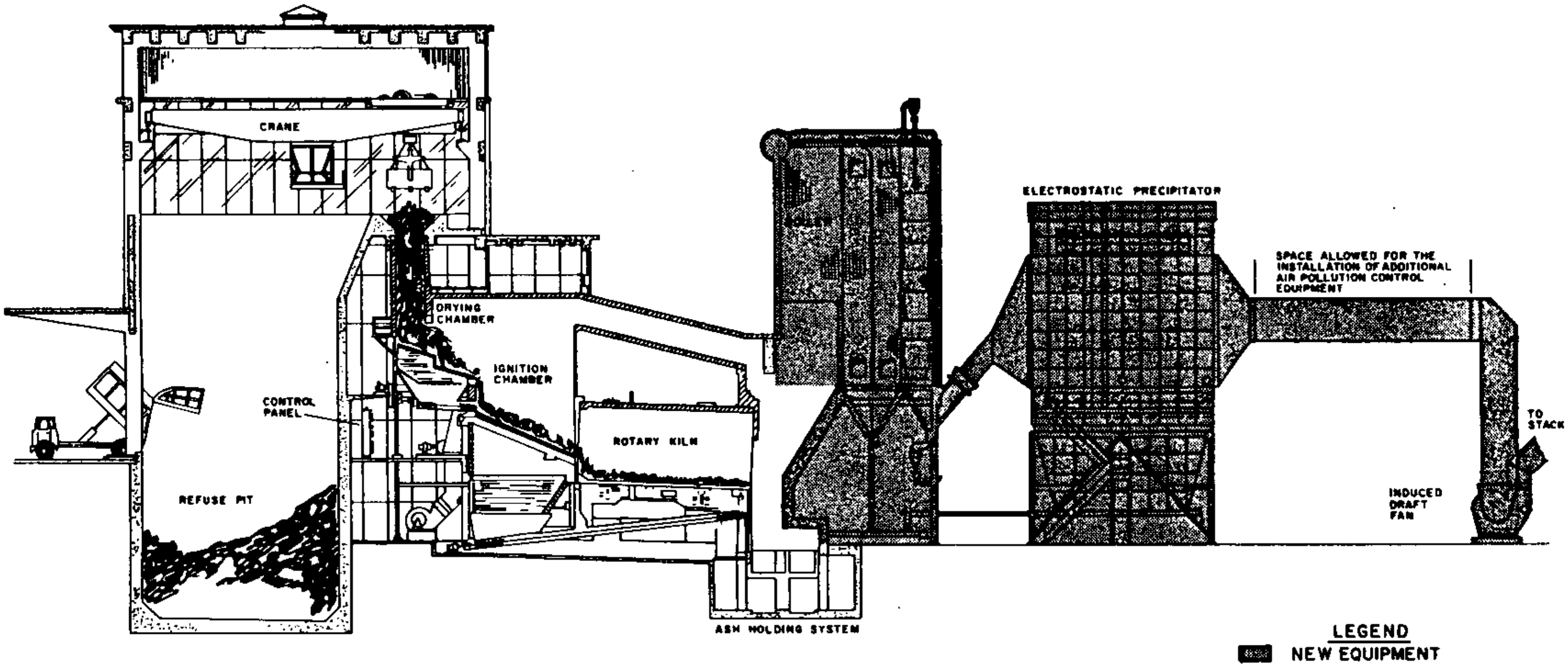


FIGURE 3

CROSS-SECTIONAL VIEW OF THE TAMPA INCINERATOR WITH RESOURCE RECOVERY EQUIPMENT ADDED

The steam generated by the four boilers will be used to produce electricity in a 21 MW condensing turbine generator. All electrical generation support systems will be provided to sustain operation on an annual operating schedule consistent with parameters used in the electrical utility industry.

Air emissions generated by the combustion process will be controlled within accepted standards by a multi-cyclone mechanical separator and an electrostatic precipitator (ESP) for each incinerator/boiler train. The treated flue gas will be vented through individual flues within a common chimney.

Ash produced by the combustion process will be handled by a wet system. The wet ash will be dewatered and loaded into trucks for subsequent disposal in the City's designated residue disposal site. On a dry basis, the ash quantity requiring landfilling is estimated to be a 15 percent by weight and 5 percent by volume of the input solid waste combusted.

Facility 2

In addition to the Incinerator conversion, the resource recovery plan calls for the construction of a new facility to accommodate a significant portion, i.e. 50-60% of the solid waste generated. The site of this facility will be located adjacent to the Facility 1 site on McKay Bay. The capacity of the facility is proposed to be 1000 TPD.

The facility will be of the mass burn type, using either the rotary kiln or waterwall technology. The ultimate energy output from the system finally selected will be electrical energy for sale to TECO.

Mass burn technology, a variation of which was used in Facility 1, is based upon the combustion of unprocessed solid waste in a specifically designed furnace system that facilitates complete burnout and generates heat for subsequent energy recovery. The heat produced will pass through waste heat boilers to produce high pressure steam which will be converted into electricity by inplant turbine generators.

The important characteristic of the mass burn systems is that no processing or separation of the refuse components is required other than to remove oversize bulky items from the mixed waste before refuse is fed to the furnaces for combustion. Noncombustibles in the refuse are handled as furnace ash residue. Recyclable materials such a ferrous metals and aluminum can be recovered from the ash residue and sold. The remaining non-recyclable residue fraction normally requires landfilling. The air pollution control system used most often by the various system vendors is a multicyclone followed by individual multifield electrostatic percipitaors. Figure 4 is a proposed site plan showing both facilities.

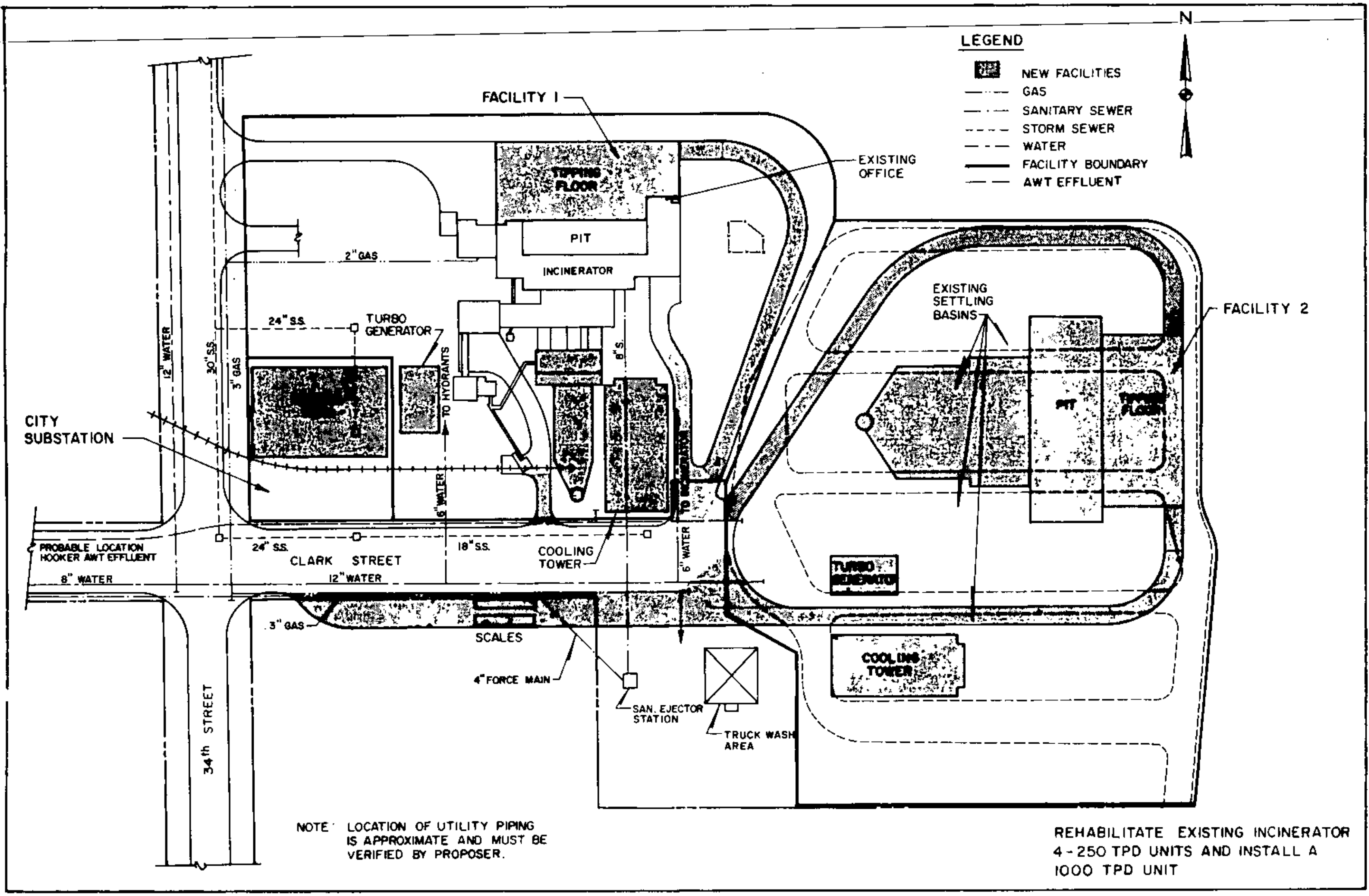
Emissions

The emissions that will be used in the modeling of the facilities are shown in Table 1.

The data for the Tampa Incinerator Conversion (Facility 1) was obtained from Waste Management Inc. (WMI) test data on similar units. The Facility 2 data is conservative data assimilated from recent proposals for a similar facility.

Table 1
Expected Emissions

	Facility 1 gm/s	Facility 1 TPY	Facility 2 gm/s	Facility 2 TPY	TOTAL TPY
Particulate (Controlled)	4.6	160	3.2	109	269
Sulfur Dioxide	20.8	722	12.1	420	1142
Nitrogen Oxides	26	903	9.5	330	1233
Carbon Monoxide	1.68	58	5.8	200	258
Hydrocarbons	.92	32	.92	32	64
Lead	.47	16.3	.47	16.3	32.6
Mercury (vaporous)	.05	1.8	.05	1.8	3.6
Mercury (particulate)	$2.3x10^{-3}$	.08	$2.3x10^{-3}$	.08	.16
Beryllium	$4.0x10^{-5}$	$1.4x10^{-3}$	$4.0x10^{-5}$	$1.4x10^{-3}$	$2.8x10^{-3}$
Flouride	.53	18.4	.53	18.4	32.6
Hydrogen Chloride	23.7	823	23.7	823	1646



NOTE: LOCATION OF UTILITY PIPING IS APPROXIMATE AND MUST BE VERIFIED BY PROPOSER.

REHABILITATE EXISTING INCINERATOR
4-250 TPD UNITS AND INSTALL A
1000 TPD UNIT

FIGURE 4

MCKAY BAY
REFUSE-TO-ENERGY PROJECT

The National Emission Standards for Hazardous Air Pollutants (NESHAP) rules for Beryllium require that no more than 10 grams/day be emitted. The conservative data used in these estimates indicate an emission rate of less than seven (7) grams of Beryllium per day.

The NESHAP rules for Mercury are applicable to those sources that process mercury ore, use mercury chlor-alkali cells, or dry and/or incinerate wastewater treatment plant sludges. There are currently no plans for either Facility 1 nor Facility 2 to process or burn any wastewater treatment plant sludges.

Monitoring Requirements

The Prevention of Significant Deterioration (PSD) regulations dated August 7, 1980 state that monitoring data is to be collected for each pollutant the source will emit in significant amounts. There is an exemption allowed, at the Administrator's discretion, if the modeled impacts are below certain amounts. The impact of most pollutants for which the project will be significant are below this de minimus value.

Both facilities will be significant sources for particulate, sulfur dioxide, nitrogen oxide, carbon monoxide, hydrocarbons, lead, beryllium, mercury, and hydrogen flouride. When the impacts of both facilities are included, the pollutants that exceeds the de minimus value are sulfur dioxide, lead, and hydrogen flouride. Monitoring data has been acquired from the Hillsborough County Environmental Protection Commission (HCEPC) monitors shown in Figure 5. This monitoring data has been used to fulfill the monitoring requirements of 40 CFR 52.21 (m)(iv). The hydrogen flouride monitoring data has not been provided in accordance with DER negotiations and the Preamble to the August 7, 1980 PSD rules.

The sulfur dioxide monitoring data has been supplied from two existing monitors operated by the HCEPC. They are pulsed flourescence monitors located on Hookers Point near the locations of the maximum annual impact. The lead data was obtained from the four lead monitors in the downtown area.

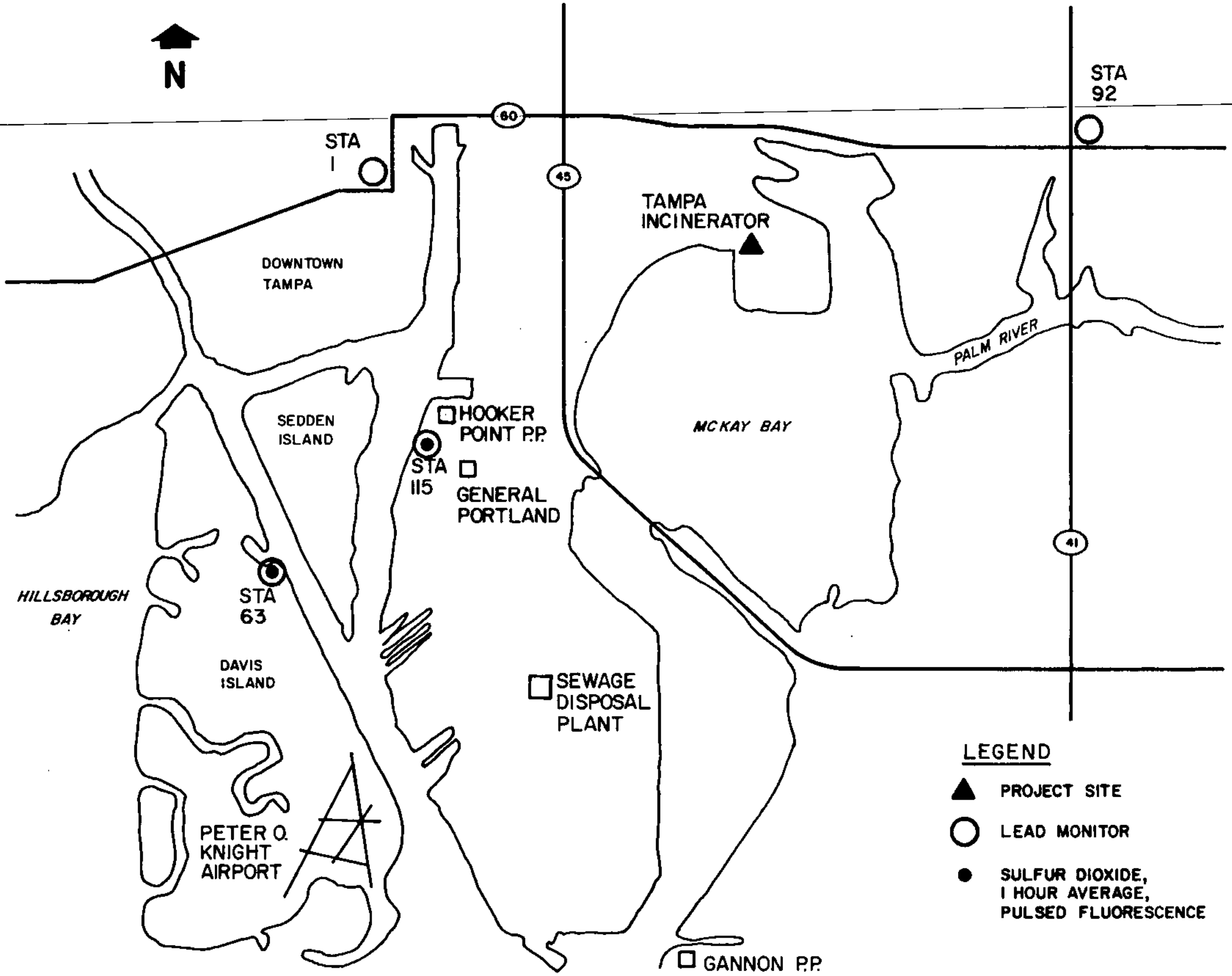


FIGURE 5

MONITORING STATIONS

MCKAY BAY
REFUSE - TO - ENERGY PROJECT

To determine impacts, the CRSTER model of the entire Project was used with 1970-1974 meteorological data. If each facility were modeled separately the results would be smaller than those predicted by CRSTER. This scenario overlays both maximums instead of separating them by some distance.

The input emission rate was 1.0 gm/sec/250 TPD unit. This rate was used as a base amount to simplify converting the data to represent each pollutant. Table 2 shows the results of the modeling and the values presented in 40 CFR 52.21 (i)(8). The presented data demonstrates that the emissions from both phases of the City of Tampa Resource Recovery project will cause a small impact on the air quality in the area.

Table 2
Modeling Results for Both Facilities

	Deminimus Value, ug/m^3/ Time Period	Highest Modeled Amount ug/m^3/Time Period
Particulate	10/24 hr.	5.8/24 hr.
Sulfur Dioxide	13/24 hr.	24.8/24 hr.
Nitrogen Dioxide	14/annual	2.3/annual
Carbon Monoxide	575/8 hr.	11/(3 hr. avg.)
Lead	0.1/24 hr.	0.7/24 hr.
Mercury	0.25/24 hr.	0.08/24 hr.
Beryllium	$5x10^{-4}$/24 hr.	$6x10^{-5}$/24 hr.
Flouride	.25/24 hr.	0.7/24 hr.

Offsets

The sites chosen for the Resource Recovery Project are within nonattainment areas for particulate and ozone. This will necessitate the acquisition of offsets for particulates and hydrocarbons from other sources in the area.

The majority of the offsets for the particulate emission will come from the emission from the old incinerator. We are aware that these offsets will not be available until the SIP is approved by EPA. In the interim we propose to use the resource recovery exemption. To show a good faith effort, each major source of particualte emissions in the non attainment area has been contacted to ascertain the availability of offsets.

To offset the hydrocarbon emissions we propose to use the existing New Source Allowance. Since the combined facilities will only emit 64 TPY, the available New Source allowance will provide sufficient offsets.

Air Pollution Control

The air emissions control review will vary for each substance emitted from the stack with the Lowest Achievable Emission Rate (LAER) and Best Available Control Technololgy (BACT) regulations providing the scope.

LAER

Emissions of particulates and volatile organic compounds (VOC) must comply with LAER regulations. For this project we support a LAER for particulates of 0.03 gr/dscf at 12% CO_2, 50% excess air. Based upon a review of the operating experience with dry and wet scrubbers, fabric filters, and electrostatic precipitators at solid waste incinerators and resource recovery facilities, an electrostatic precipitator has been selected to achieve LAER for particulates.

The level of hydrocarbon emissions is influenced by the operation of the solid waste combustion unit and the uniformity of the feed. LAER compliance will be achieved by maintaining the maximum possible homogeneity in the solid waste feed, feeding the solid waste at uniform rates, maintaining high combustion temperatures and properly controling air flow.

BACT

BACT analysis for the emission of nitrogen oxides, sulfur dioxide, carbon monoxide, lead, beryllium, mercury and hydrogen flouride has been prepared pursuant to applicable Federal and State regulations, notably Title 40, Part 52 of the Federal regulations, and the guidelines presented in the "Prevention of Significant Deterioration" workshop manual prepared by the U.S. Environmental Protection Agnecy. The BACT analysis has determined:

- The pollutants to which BACT applies, (listed previously)
- The emission source to which BACT applies, (i.e., the stack emissions).

The potentially sensitive air quality concerns which the Tampa project will affect are to be determined.

The control strategies selected for BACT analysis are as follows:

Recommended

Pollutant	Strategy
sulfur dioxide	use of low sulfur solid waste as fuel
nitrogen oxides	combustion unit design and operation
carbon monoxide	combustion unit design and operation
lead	ESP, as design for particulate removal
beryllium	ESP, as design for particulate removal
mercury	no control
flouride	no control

Alternative

Pollutant	Strategy
sulfur dioxide	dry or wet scrubbers
nitrogen oxides	none proven
carbon monoxide	none
lead	ESP
beryllium	ESP
mercury	dry or wet scrubbers
flouride	dry or wet scrubbers

Systems were examined for the control of some air emissions from the Project subject to BACT (i.e., sulfur dioxide and nitrogen oxides). However, lack of operating experience with these systems installed at resource recovery facilities suggests their use by the Project is not appropriate.

The economic and energy impact of the recommended alternative for the control of nitrogen oxides, sulfur dioxide, carbon monoxide, lead, beryllium, mercury, and hyrdogen flouride will be considered as zero because the alternatives will be implemented for other dominant purposes or have no identifiable cost or energy usage. The environmental impacts were developed concurrently with the modeling of the air quality impacts. In summary, the recommended air emissions control technologies for compliance with LAER and BACT regulations have been identified.

Other Impacts

The Hillsborough County City-County Planning Commission publication entitled, "Population and Housing Estimates," April 1, 1970-April 1, 1980 projects the population of Hillsborough County to increase from 630,698 to 757,300 persons from 1980 to 1985. This increase of 126,602 people represents a 20% increase in 5 years. The future projections continue to the year 2000 with an estimated increase of 63% within 20 years. For the City of Tampa and the Hillsborough County project of the rehabilitation the present Tampa Bay incinerator and the construction of a new facility, the workforce is expected to average between 150 and 300 persons throughout the contruction phase. With the present construction in the surrounding area it is feasible to state that the majority of construction workforce will be available locally. There may be some relocation to move closer to the project site but this action would be considered negligible in impact analysis. The figure of 150 persons represents less than .03% of the total population. For the operation of the facilities a projected employment of 65 persons per facility is expected.

The most significant air emission anticipated during construction is fugitive dust generated by numerous vehicles for the transportation of the workforce. Additionally anywhere from 5-12 pieces of construction equipment will be used in excavating, scraping, filling and compacting. Fugitive dust can be reduced by the frequent spraying of water on the site and roadway.

Noise generation is another characteristic of construction activity. This nuisance will be generally limited to normal working hours thus allowing a reduction of noise during the evening hours.

For the operational phase atmospheric emission will be controlled by the use of Electrostatic Precipitators (ESP). To date ESP's are the only proven technology for the removal of particulate matter from resource recovery facilities. The efficiencies of ESP's have been proven to be as high as 99.9%.

Fugitive dust emissions from the operational phase will be primarily caused by the frequent delivery of solid waste to the facility. With proper surface treatment these emissions are minimized. Dust and odors in the refuse handling area will be controlled by the total enclosure of the tipping area. This area will also be placed under negative pressure with the air then being used in the combustion phase.

The primary source of noise during the operational phase is the movement of the solid waste delivery vehicles. Again the delivery hours for the facilities will be restricted to normal working hours, thus reducing the nuisance potential.

The traffic patterns will be affected with the delivery of solid waste by vehicles. Also the arrival and departure of the shift workforce will have some impact. However, the majority of the impact will be during the normal rush hours of daylight.

Explosions or fires within the pit areas are minimized by the thorough training of the crane operators who manage this area. Any smoldering material can be loaded immediately into a combustion unit and firehoses and sprinklers will also be available. If explosive material were accidently fed into a combustion unit, any resulting explosion would be dissipated within the large volume of the boiler.

Vermin and rodent control of the pit area is accomplished by the enclosure of the pit. The refuse is managed within the pit by the crane operator to minimizing, any concentrations of food supplies. The refuse in the pit will be stored no more than forty eight hours before being combusted. This will eliminate vermin and rodent survivability.

MCKAY BAY REFUSE-TO-ENERGY PROJECT

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APPENDICES

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CHAPTER I

PURPOSE AND SCOPE

PURPOSE AND SCOPE

This document is to apply for separate Environmental Protection Agency Air Quality Permits assuring Prevention of Significant Deterioration for the two phases of the McKay Bay Refuse-to-Energy Project. We are also requesting concurrent review for a Florida Permit to Construct an Air Pollution Source.

In Hillsborough County, there has been an increased interest in solid waste disposal and the concept of resource recovery from solid wastes. This interest has been stimulated by increased awareness of the environmental and siting problems associated with past disposal methods and by the shortages and increased prices of energy and recycable materials. The City of Tampa in cooperation with the county and the cities of Temple Terrace and Plant City, in keeping with State and Federal Policy, have selected a refuse-to-energy implementation plan as a long-term solid waste control strategy. This plan is divided into two phases. Phase I consists of rehabilitating and upgrading of the present Tampa incinerator (Facility 1). Phase II will be the construction of a second Refuse-To-Energy facility (Facility 2) located adjacent to the present incinerator.

In Hillsborough County, the only permitted landfill is under an enforcement order to close by October, 1984. A siting effort is underway but the permiting of a landfill has not yet begun. With a refuse to energy facility a landfill will still be needed however residue from the facilities will require only 10% of the space required to landfill the same quantity of raw solid waste. This landfill will handle the unprocessable wastes, the residual ash and raw refuse the project is unable to process. The residue going to the landfill will represent 15% of the mass but only 5% of the volume of the processed waste.

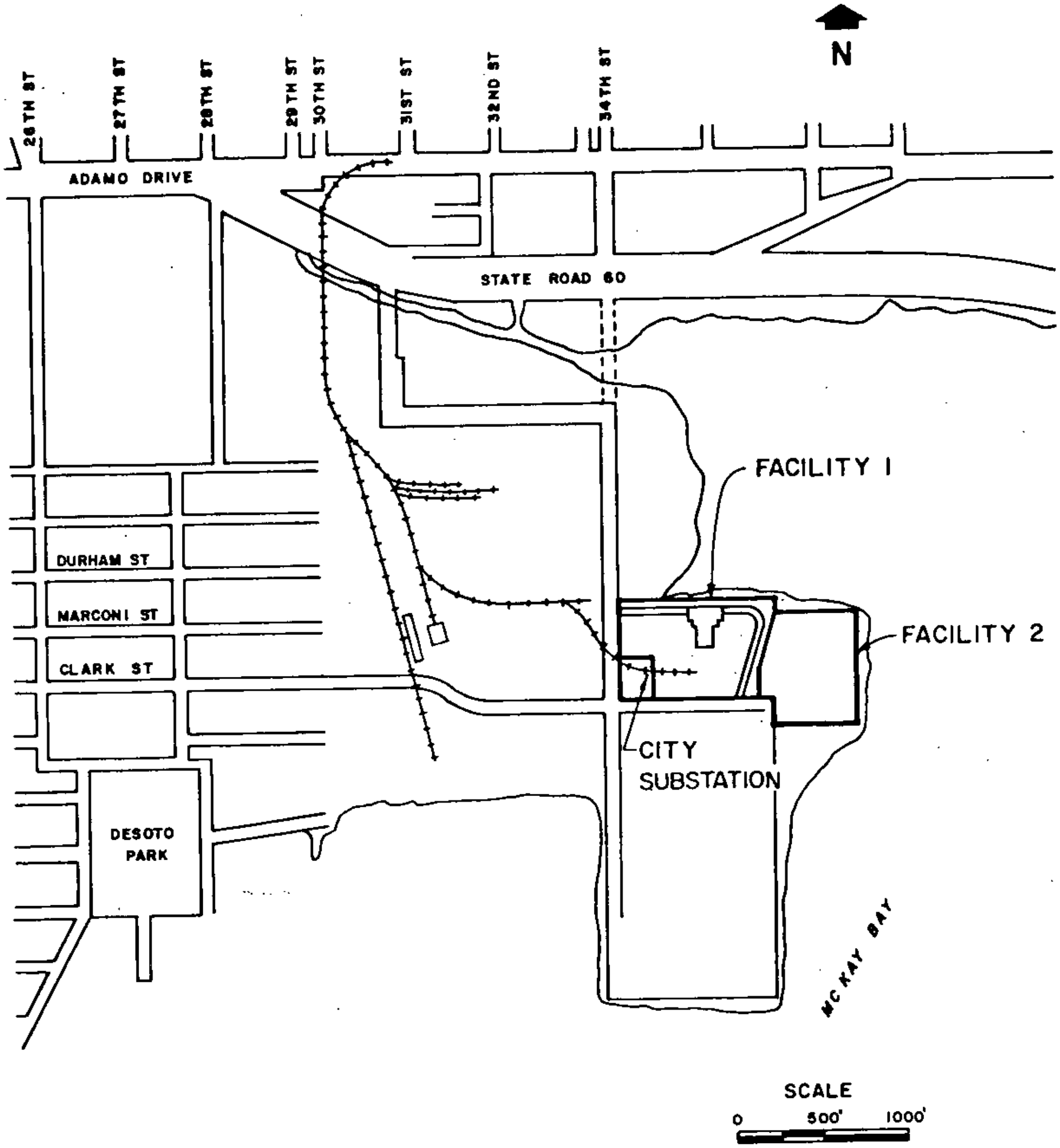
Facility II has not been designed. Conceptual design features are presented here. The projected emissions were developed from proposals for a recent facility and represent best engineering judgement and it is requested that you accept them as such. The equipment discussed has been accepted as "proven technology" in other refuse to energy projects. This term can be defined as that technology which has been historically proven relief by operating successfully for several years.

The field of resource recovery is such that a technology is not considered proven until a full size unit has been built and operated successfully. Deviations from accepted proven technology would increase the risk perceived by the financial community, thereby substantially increasing the cost of bonding the facility or ultimately undermining the sale of the bonds.

REHABILITATION OF THE TAMPA INCINERATOR (Facility I)

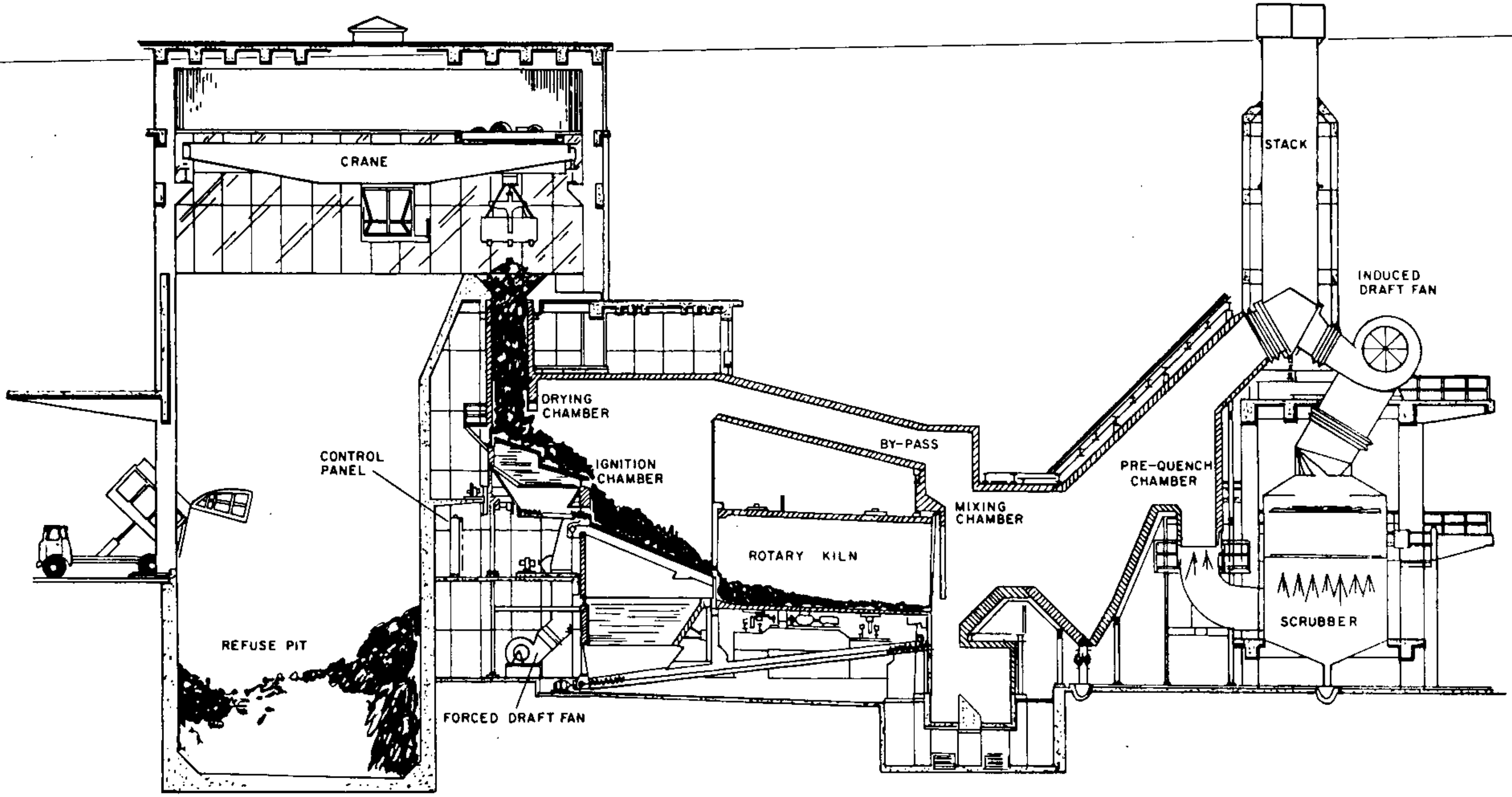
The closed Tampa Incinerator is located on a 14 acre site adjacent to McKay Bay south of Route U. S. 60. Figure 1-1 is the site plan of the McKay Bay Project. The existing incineration system presently consists of three Volund Technology mass burn combustion trains without energy recovery. Each is rated at 250 TPD. Design engineers have inspected the incinerator and have determined that it can be rehabilitated and converted into a state-of-the-art resource recovery system capable of generating electricity for sale to Tampa Electric Company (TECO). Figure 1-2 depicts a cross sectional view of the existing equipment. To renovate the incinerator waste heat boilers, electrostatic precipitators for particulate control and a turbine generator, with all support equipment and instrumentation, will have to be added. In addition, the inplace combustion system will have to be modified to bring the facility into a guaranteed operating condition for long-term operation and incorporation of modern design features.

Figure 1-3 shows the probable equipment configuration with a boiler and electrostatic precipitator added to the existing equipment. Three combustion trains were initially constructed with adequate space left in the building to add a fourth unit at a later date. Adding the fourth unit would increase the design capacity of the facility to at least 1000 TPD and provide the capability to dispose of a maximum of approximately 300,000 tons per year of solid waste.



MC KAY BAY REFUSE-TO-ENERGY PROJECT
FACILITY LOCATION

FIGURE 1-1

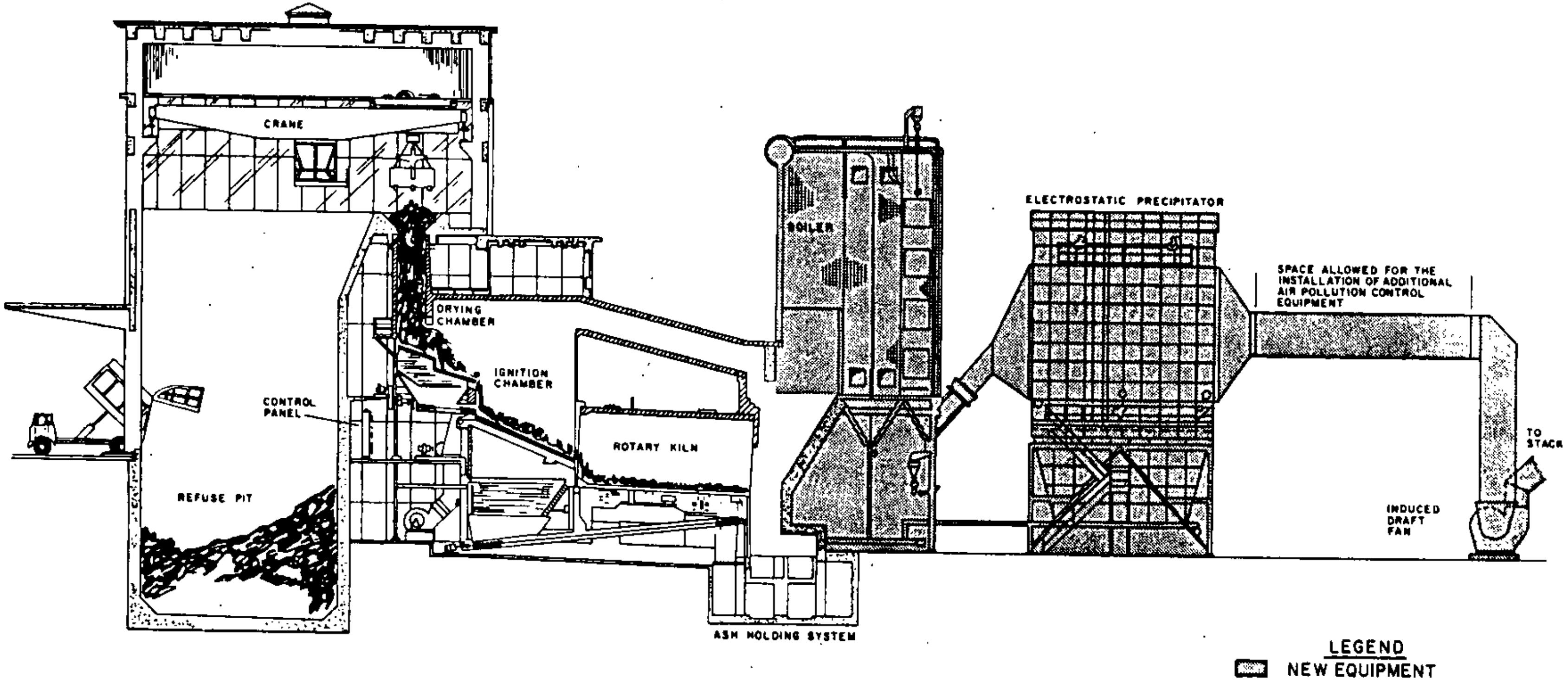


SOURCE: INTERNATIONAL INCINERATOR INC.

FIGURE 1-2

CROSS-SECTIONAL VIEW OF THE TAMPA INCINERATOR

FIGURE 1-3



CROSS-SECTIONAL VIEW OF THE TAMPA INCINERATOR WITH RESOURCE RECOVERY EQUIPMENT ADDED

The steam generated by the four boilers will be used to produce electricity in a condensing turbine generator. (See Figure 1-4) All generation support systems will be provided to sustain operation on an annual operating schedule consistent with parameters used in the electrical utility industry.

Non-attainment air emissions produced by the combustion process will be controlled to lowest achievable emission rate (LAER) of 0.03 gr/dscf at 50% excess air by an electrostatic precipitator (ESP) for each incinerator/boiler train. Control of other pollutants will be discussed in Chapter 6. The treated flue gas will be vented to the atmosphere through individual flues within a common 46 meter chimney which represents the good engineering practice (GEP) stack height.

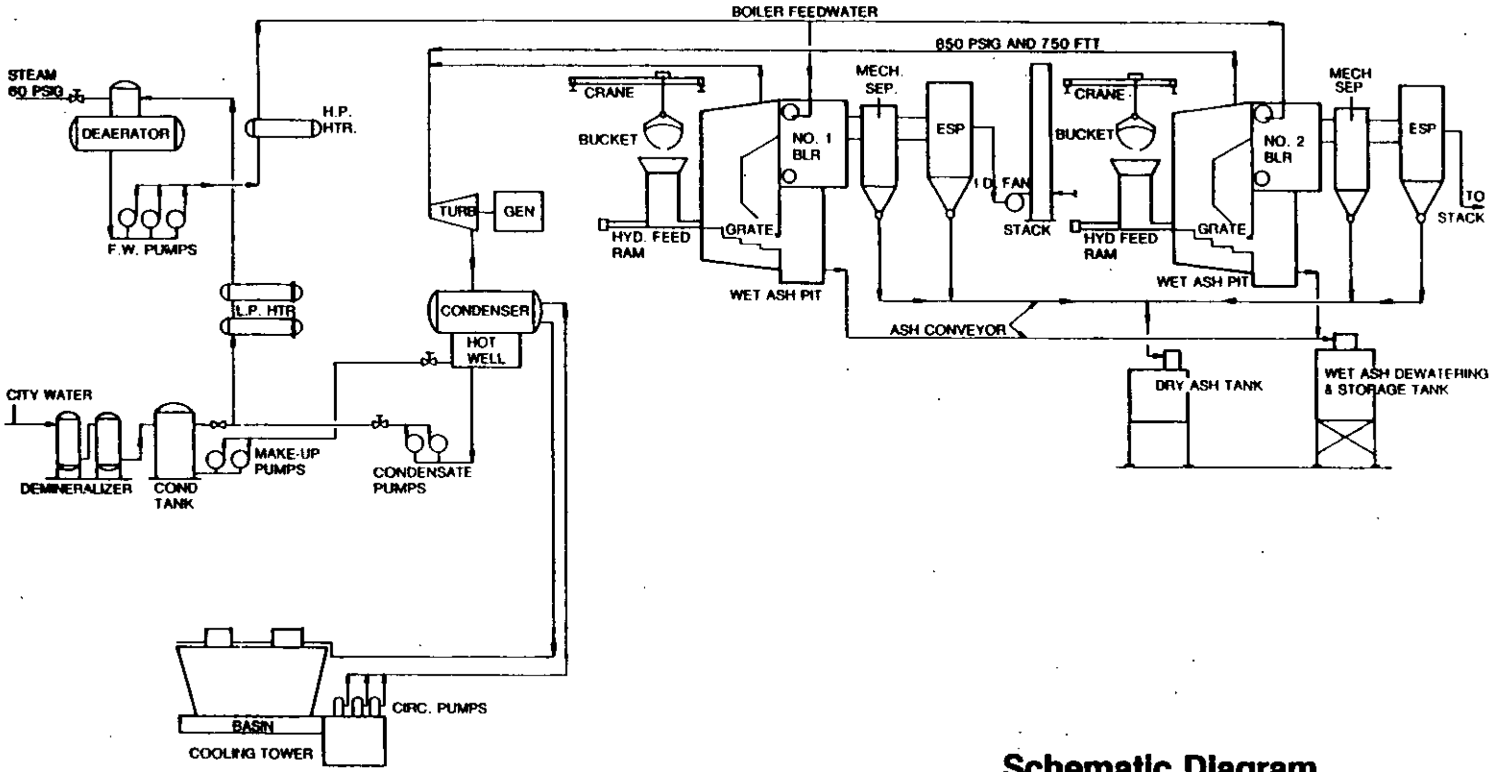
Ash produced by the combustion process will be handled by a wet system. The wet ash will be dewatered and loaded into trucks for subsequent disposal in the designated permitted landfill. On a dry basis, the ash quantity requiring landfilling is estimated to be about 15 percent by weight of the input solid waste combusted.

Other modifications will include an enclosed tipping area which will be placed under negative pressure to control dust and odor. The recovery of secondary materials is also a possibility.

NEW RESOURCE RECOVERY FACILITY (Facility 2)

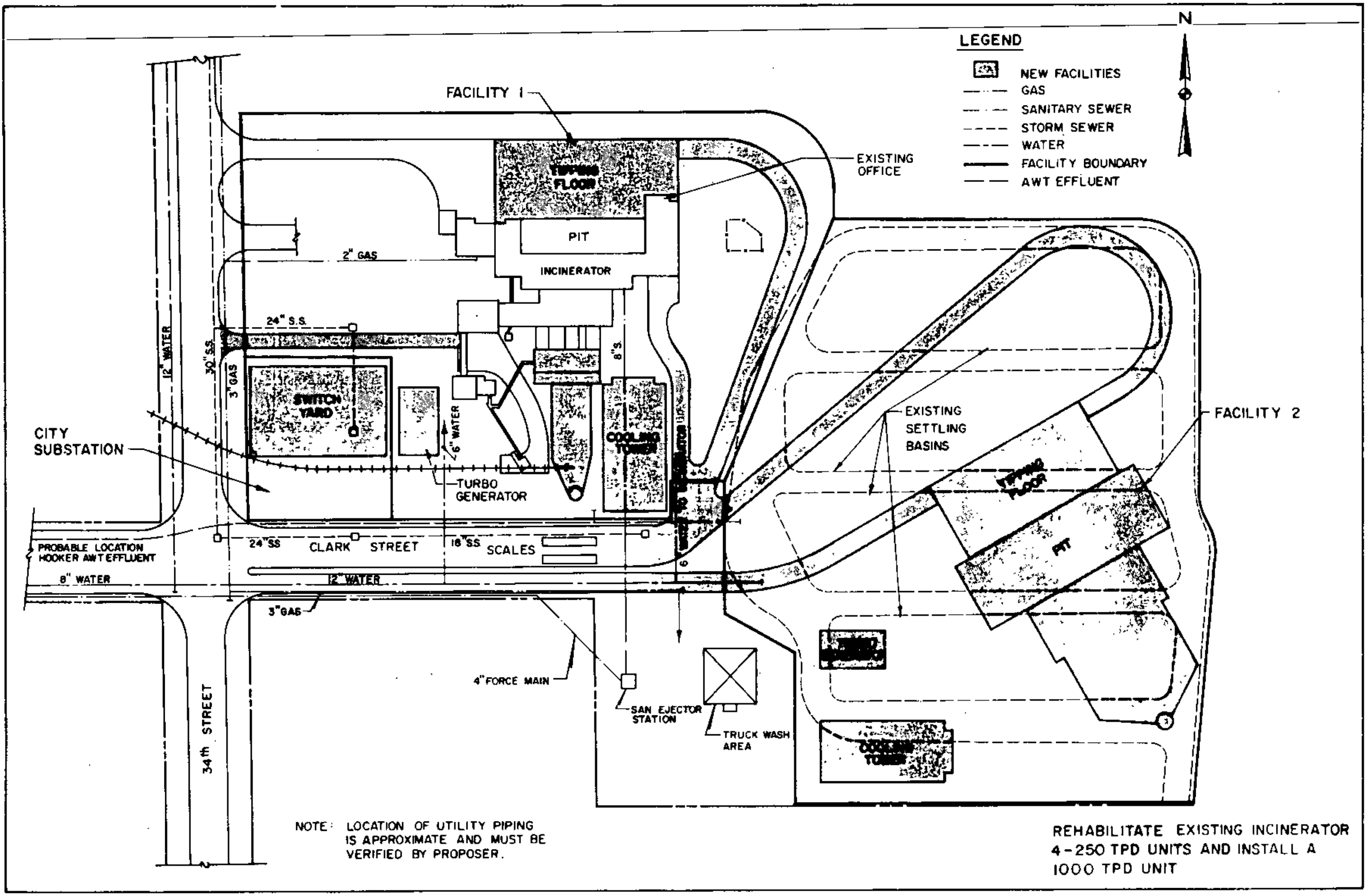
The new Resource Recovery Facility will be located adjacent to Facility I. The incineration system will be two mass burn units capable of processing a total of 1000 tons per day of solid waste. The Facility 2 will include the recovery of secondary materials and the production of electricity for sale to the Tampa Electric Company. Two alternative site plans are shown in Figures 1-5 and 1-6.

Facility 2 will be designed to provide a minimum annual plant capacity of 300,000 tons per year and a minimum weekly capacity of 7,000 tons per week.



Schematic Diagram
Electrical Generation

FIGURE I-4

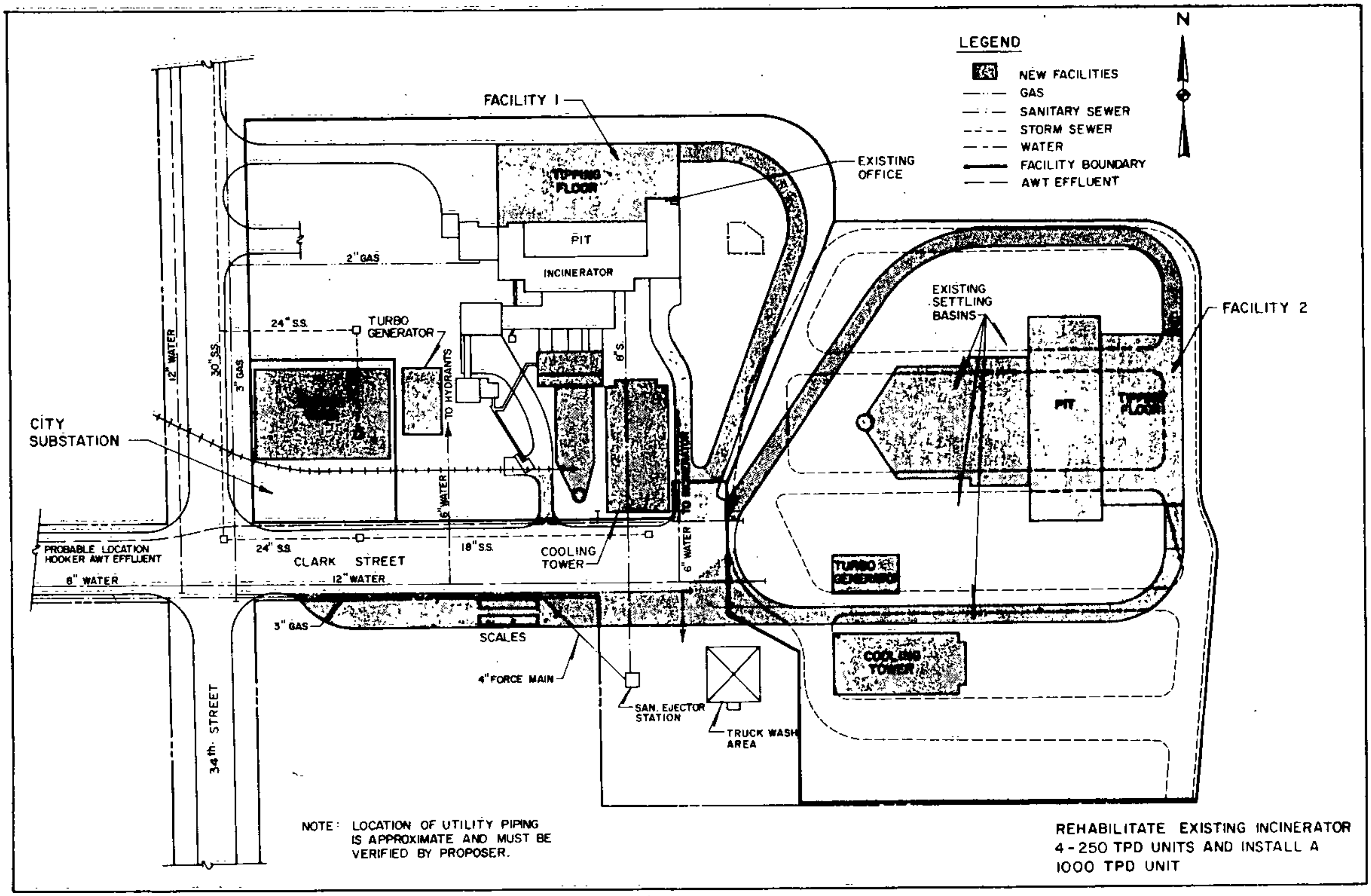


NOTE: LOCATION OF UTILITY PIPING IS APPROXIMATE AND MUST BE VERIFIED BY PROPOSER.

REHABILITATE EXISTING INCINERATOR
4-250 TPD UNITS AND INSTALL A
1000 TPD UNIT

MCKAY BAY
REFUSE-TO-ENERGY PROJECT

FIGURE 1-5



MCKAY BAY
REFUSE - TO - ENERGY PROJECT

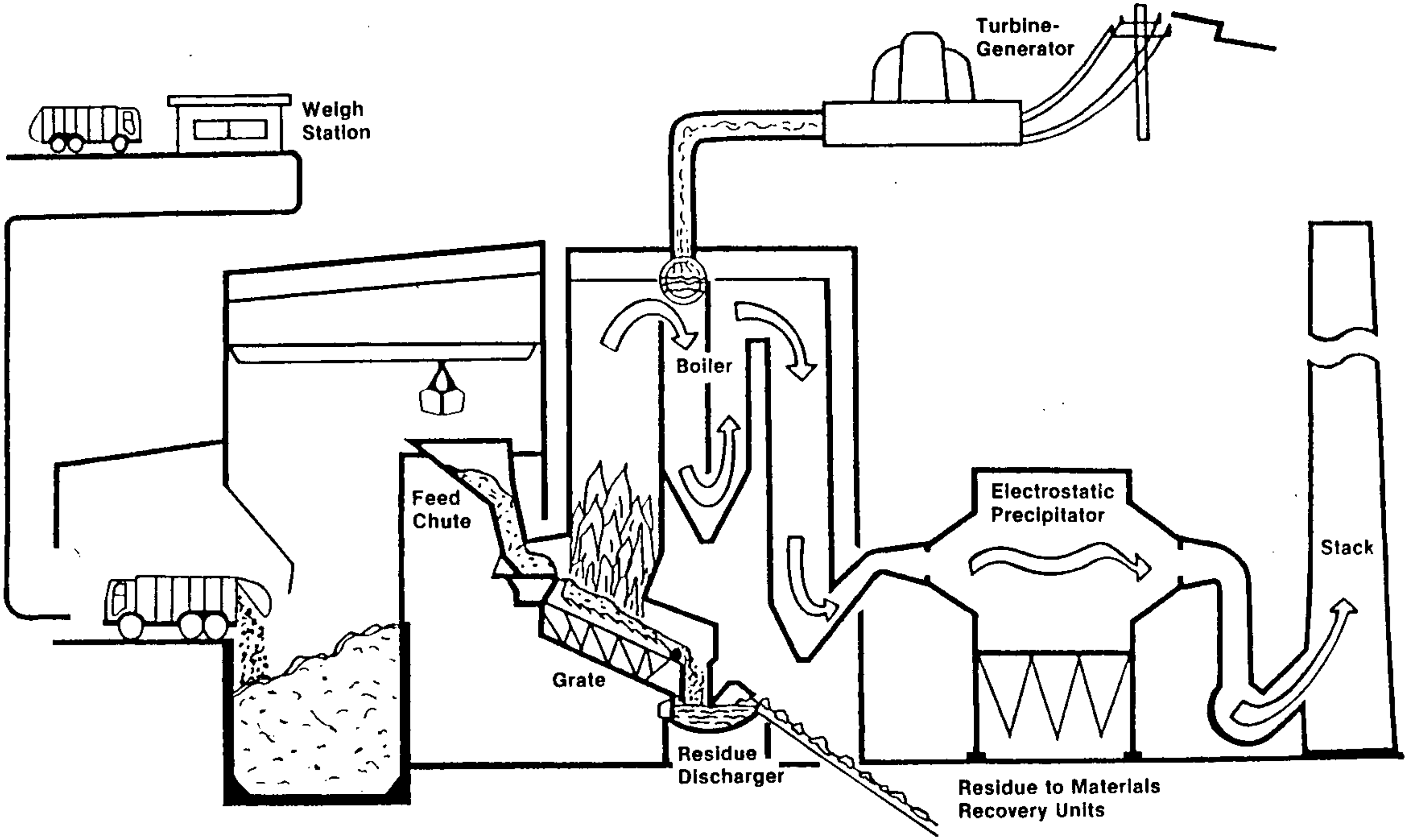
FIGURE 1-6

Air pollution control systems will reflect the Lowest Achievable Emission Rate (LAER) for particulate. The particulate emissions shall be less than 0.03 grains/dscf corrected to 12% carbon dioxide (equivalent to 0.03 grains/dscf at 50% excess air. Facility 2 will be designed to control odors resulting from the handling, storage and processing of solid waste so as not to create a health hazard or public nuisance. The tipping floor will be totally enclosed and provide as a minimum the space for the equipment of 12 compacted 75-cubic yard transfer tractor/trailer vehicles to dump simultaneously. The tipping floor will be under negative pressure at all times when the plant is in operation. During periods when the plant is shut down, appropriate measures, including removing refuse from the pit for disposal at the landfill will be taken to minimize odors and health hazards.

The facility will be designed to the emission limitation set forth in this document. Figure 1-7 shows a cross section and the vital components of a new generation, waterwall, and mass burn incinerator.

FIGURE 1-7

Schematic of Resource Recovery Facility



CHAPTER 2

APPLICATION FORMS

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Resource Recovery Incinerator [ ] New[1] [X] Existing[1]

APPLICATION TYPE: [ ] Construction [ ] Operation [X] Modification

COMPANY NAME: City of Tampa COUNTY: Hillsborough

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Tampa Incinerator Rehabilitation

SOURCE LOCATION: Street 14 Acre site adjacent to McKay Bay City Tampa

UTM: East 360000 North 3091900

Latitude 27 ° 56 ' 51 "N Longitude 82 ° 25 ' 14 "W

APPLICANT NAME AND TITLE: Dale H. Twachtmann, Administrator, Water Resources & Public Work

APPLICANT ADDRESS: 8th Floor - City Hall Plaza, Tampa, Florida 33602

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of McKay Bay Refuse-To-Energy Project

I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: Dale H. Twachtmann

Dale H. Twachtmann, Administrator, WR&P
Name and Title (Please Type)

Date: 23 July 81 Telephone No. 813-223-8771

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed:

Ralph Lee Torrens
Name (Please Type)

Henningson, Durham & Richardson
Company Name (Please Type)

8404 Indian Hills Drive; Omaha, NE 68114
Mailing Address (Please Type)

Date: 7/23/81 Telephone No. 402-399-1000

(Affix Seal)

Florida Registration No. 21274

---

[1] See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

Renovate existing incinerator, add heat recover for steam production for electricity generation, addition of electrostatic precipitators to control particulate emissions. The facility will operate in full compliance of all existing regulations.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction Early 82 Completion of Construction Early 84

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Pollution Control $4,000,000-$7,000,000

Due to LAER requirements cost is not a factor in the technology choice.

See Chapter 5

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

Tampa Incinerator was shut down in Dec 1979 under consent decree of EPA.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes X No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr 8760 ; if seasonal, describe: with approximately 20% down time for maintenance

G. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant?	yes - Chapter 3
a. If yes, has "offset" been applied?	yes - Chapter 6
b. If yes, has "Lowest Achievable Emission Rate" been applied?	yes - Chapter 5
c. If yes, list non-attainment pollutants. total suspended particulate and VOC	
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.	yes - Chapter 4
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII.	yes - Chapter 3
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source?	yes
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source?	yes - Chapter 3

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): ________________

2. Product Weight (lbs/hr): ________________

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard

[4] Emission, if source operated without control (See Section V, Item 3)

[5] If Applicable

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis:

Percent Sulfur: ________ Percent Ash: ________

Density: ________ lbs/gal Typical Percent Nitrogen: ________

Heat Capacity: ________ BTU/lb ________ BTU/gal

Other Fuel Contaminants (which may cause air pollution): ________

F. If applicable, indicate the percent of fuel used for space heating. Annual Average ________ Maximum ________

G. Indicate liquid or solid wastes generated and method of disposal.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: ________ ft. Stack Diameter: ________ ft.

Gas Flow Rate: ________ ACFM Gas Exit Temperature: ________ °F.

Water Vapor Content: ________ % Velocity: ________ FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated	5.7% $.473x10^4$	29.5% $2.45x10^4$	38.9% $3.23x10^4$	9.6% $.797x10^4$	None	None	16.3% $1.35x10^4$

Description of Waste Municipal refuse collected within City of Tampa.

Total Weight Incinerated (lbs/hr) $8.3x10^4$ Design Capacity (lbs/hr) $8.3x10^4$

Approximate Number of Hours of Operation per day 24 days/week 7

Manufacturer Unknown - to be determined.

Date Constructed ________ Model No. ________

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber	N/A	3.56 x 10^8	solid waste	3.75 x 10^8	1600 - 1800^0 F
Secondary Chamber					

Stack Height: 150 ft. Stack Diameter 4 flues 4.43 ft Stack Temp. 450^0F

Gas Flow Rate: 65,000 ACFM .03 gr/ DSCFM* Velocity 70 FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [X] Cyclone [ ] Wet Scrubber [ ] Afterburner [X] Other (specify) ESP

Brief description of operating characteristics of control devices: Electrostatic Precipitators work by electrostatic forces caused by charging the particles and collecting them on oppositely charged walls

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

Ash to permitted landfill

Cooling tower & boiler blowdown to sanitary sewer

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight — show derivation.
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.).
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY *

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[X] Yes [ ] No

Contaminant	Rate or Concentration
Particulate	0.08 gr/dscf at 12% CO_2

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) [ ] Yes [X] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology? None

Contaminant	Rate or Concentration
all emission but particulate	at potential to emit rate = without controls
	See Chapters 3 and 4

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

*See Chapter 6

10. **Stack Parameters**

a. Height: 150 ft. b. Diameter: 4 x 4.43 ft ft.

c. Flow Rate: 65,000/unit ACFM d. Temperature: 450 °F

e. Velocity: 70 FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device: wet scrubbers - for SO_2, HF, and gaseous Hg control

b. Operating Principles: gas intimately contacted with lime slurry. SO_2 and HF react and are removed. Hg condenses and is removed.

c. Efficiency*: 90% or better; literature d. Capital Cost: $5,280,000

e. Useful Life: 20 year f. Operating Cost: $643,000/yr

g. Energy*: 460 Kwh; literature h. Maintenance Cost: $528,500/yr

i. Availability of construction materials and process chemicals:

Available with appropriate lead time

j. Applicability to manufacturing processes: Has not been used on U.S. solid waste incineration

k. Ability to construct with control device, install in available space, and operate within proposed levels:

Could be installed and operated on space available. Has not been done on U.S. solid waste incinerator.

2.

a. Control Device: Dry scrubber - SO_2, HF, and gaseous Hg control

b. Operating Principles: lime slurry contacts gas and is dried by flue gas. Particulate control by baghouse on ESP

c. Efficiency*: 90-99%; literature d. Capital Cost: $7,920,000

e. Useful Life: projected for 20 yr f. Operating Cost: $ 322,000/yr

g. Energy**: 482 kwh; literature h. Maintenance Costs: $264,000/yr

i. Availability of construction materials and process chemicals:

Available with appropriate lead time

j. Applicability to manufacturing processes: has not been used on any combustion source in U.S. First unit to start up soon on coal-fired boiler.

k. Ability to construct with control device, install in available space, and operate within proposed levels:

Room to construct. Yet to be proven

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power — KWH design rate.

3.

a. Control Device: Low sulfur fuel - SO_2 control

b. Operating Principles: Lower sulfur content in fuel, lower SO_2 emission

c. Efficiency*: - d. Capital Cost: -

e. Life: - f. Operating Cost: -

g. Energy: 0 h. Maintenance Cost: -

*Explain method of determining efficiency above.

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4\.

a. Control Device Ammonia injection, wet scrubbers and catalytic reduction for

b. Operating Principles: NO_x control

A laboratory control device - Described in Chapter 4

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

Not proven on any combustion source, not recommended

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device: no additional collection device

2. Efficiency*: 0

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes: This BACT recommendation used on all solid waste-fired boilers in U.S.

a\.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b\.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

See Chapters 4 and 5.

---

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. HCEPC Monitored Data

1. 2 no sites ______ TSP 63/115 (C) SO^2* 63 Wind spd/dir

Period of monitoring 5 / / 80 to 5 / / 81
month day year month day year

Other data recorded ______

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

a) Was instrumentation EPA referenced or its equivalent? X Yes ____ No

b) Was instrumentation calibrated in accordance with Department procedures? X Yes ____ No ____ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. 5 Year(s) of data from 1 / 1 / 70 to 12 / 31 / 74
month day year month day year

2. Surface data obtained from (location) Tampa International Airport

3. Upper air (mixing height) data obtained from (location) Tampa International Airport

4. Stability wind rose (STAR) data obtained from (location) ______

C. Computer Models Used

1. CRSTER Modified? If yes, attach description.

2. ______ Modified? If yes, attach description.

3. ______ Modified? If yes, attach description.

4. ______ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	46 grams/sec
SO^2	20.8 grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time. in Modeling Section

F. Attach all other information supportive to the PSD review. See Chapter 3

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

See Other Impact Sections

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Resource Recovery Incinerator ☒ New[1] ☐ Existing[1]

APPLICATION TYPE: ☒ Construction ☐ Operation ☐ Modification

COMPANY NAME: City of Tampa COUNTY: Hillsborough

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) New refuse-to-energy facility (Facility 2)

SOURCE LOCATION: Street ________ City ________

UTM: East 360000 North 3091900

Latitude 27 ° 36 ' 51 "N Longitude 82 ° 25 ' 14 "W

APPLICANT NAME AND TITLE: Dale H. Twachtmann, Administrator Water Resources and Public Works

APPLICANT ADDRESS: 8th Floor - City Hall Plaza, Tampa, Florida 33602

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of McKay Bay Refuse-To-Energy Project

I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: Dale H. Twachtmann

Dale H. Twachtmann, Administrator, WR&PW
Name and Title (Please Type)

Date: 23 July 81 Telephone No. 813-223-8771

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed: R. Lee T

Ralph Lee Torrens
Name (Please Type)

Henningson, Durham & Richardson, Inc.
Company Name (Please Type)

8404 Indian Hills Drive, Omaha, NE 68114
Mailing Address (Please Type)

(Affix Seal)

Florida Registration No. 21274

Date: 7/23/81 Telephone No. 402-399-1000

---

[1] See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

Facility 2 of the McKay Bay Refuse-To-Energy Project will be two boilers designed to burn solid waste. This would handle up to 1000 TPD of solid waste. The facility will always perform in full compliance with all applicable regulations.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction Mid '82 Completion of Construction Late '85

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Particulate Pollution Control $4,000,000-$7,000,000

Due to LAER requirements, cost is not a factor in the technology choice. See Chapter 5.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

New Facility.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes __X__ No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr ____ ;

if seasonal, describe: With approximately 20% down time for scheduled maintenance.

G. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant?	Yes	Chapter 3
a. If yes, has "offset" been applied?	Yes	Chapter 6
b. If yes, has "Lowest Achievable Emission Rate" been applied?	Yes	Chapter 5
c. If yes, list non-attainment pollutants. Particulate & VOC		
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.	Yes	Chapter 4
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII.	Yes	Chapter 3
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source?	Yes	
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source?	Yes	Chapter 3

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): __________

2. Product Weight (lbs/hr): __________

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard

[4] Emission, if source operated without control (See Section V, Item 3)

[5] If Applicable

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis:

Percent Sulfur: ______ Percent Ash: ______

Density: ______ lbs/gal Typical Percent Nitrogen: ______

Heat Capacity: ______ BTU/lb ______ BTU/gal

Other Fuel Contaminants (which may cause air pollution): ______

F. If applicable, indicate the percent of fuel used for space heating. Annual Average ______ Maximum ______

G. Indicate liquid or solid wastes generated and method of disposal.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: ______ ft. Stack Diameter: ______ ft.

Gas Flow Rate: ______ ACFM Gas Exit Temperature: ______ °F.

Water Vapor Content: ______ % Velocity: ______ FPS

SECTION IV: INCINERATOR INFORMATION *

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated	.47 x 10^4 5.7%	2.45x10^4 29.5%	3.23x10^4 38.9%	.80x 10^4 9.6%	None 0%	None 0%	Non combustib 1.34x10^4 16.3%

Description of Waste Municipal Wastes collected in the City of Tampa

Total Weight Incinerated (lbs/hr) 8.3 x 10^4 Design Capacity (lbs/hr) 8.3 x 10^4

Approximate Number of Hours of Operation per day 24 days/week 7

Manufacturer International Incinerators, Inc.

Date Constructed 1967 Model No. ______

*Waste Quantities and Composition in Appendix G.

	Volume (ft)^3	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber	N/A	3.56 x 10^8	Solid Waste	3.75 x 10^8	1600 - 1800°F
Secondary Chamber					

Stack Height: 164 ft. Stack Diameter 7.5 ft. Stack Temp. (477°K) 400°F

Gas Flow Rate: About 100,000/unit ACFM .03 gr/ DSCFM* Velocity 70 FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner [X] Other (specify) See Below

Brief description of operating characteristics of control devices: Devise to achieve lowest achievable emission rate probably an Electrostatic Precipitator.

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

Cooling tower and boiler blowdown to sanitary sewer.

Ash to permitted Landfill.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight – show derivation.
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.).
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Departmeni of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
☒ Yes ☐ No

Contaminant	Rate or Concentration
Particulate	0.08 gr/dscf at 12% CO2

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) ☐ Yes ☒ No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration
all emission but particulate	at potential to emit rate - without controls
See Chapters 3 and 4	

D. Describe the existing control and treatment technology (if any). None

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

*See Chapter 6

10. **Stack Parameters**

a. **Height:** 150 ft. b. **Diameter:** 7.5 ft ft.

c. **Flow Rate:** 100,000/unit ACFM d. **Temperature:** 400°F °F

e. **Velocity:** 70 FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. **Control Device:** wet scrubbers - for SO_2, HF, and gaseous Hg control

b. **Operating Principles:** gas intimately contacted with lime slurry. SO_2 and HF react and are removed. Hg condenses and is removed.

c. **Efficiency*:** 90% or better; literature d. **Capital Cost:** $5,280,000

e. **Useful Life:** 20 year f. **Operating Cost:** $643,000/yr

g. **Energy*:** 460 kwh; literature h. **Maintenance Cost:** $528,500/yr

i. **Availability of construction materials and process chemicals:**

available with appropriate lead time

j. **Applicability to manufacturing processes:** has not been used on U.S. solid waste incinerator

k. **Ability to construct with control device, install in available space, and operate within proposed levels:**

Could be installed and operated on space available. Has not been done on U.S. Solid Waste Incinerator.

2.

a. **Control Device:** Dry scrubber - SO_2, HF and gaseous Hg control

b. **Operating Principles:** lime slurry contacts gas and is dried by flue gas. Particulate control by baghouse on ESP

c. **Efficiency***90-99%; literature d. **Capital Cost:** $7,920,000

e. **Useful Life:** projected for 20 years f. **Operating Cost:** $322,000/yr

g. **Energy**:** 482 kwh; literature h. **Maintenance Costs:** $264,000/yr

i. **Availability of construction materials and process chemicals:**

Available with appropriate lead time

j. **Applicability to manufacturing processes:** has not been used on any combustion source in U.S. First unit to start up soon on coal-fired boiler

k. **Ability to construct with control device, install in available space, and operate within proposed levels:**

Room to Construct. yet to be proven

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power — KWH design rate.

3.

a. **Control Device:** low sulfur fuel - SO_2 control

b. **Operating Principles:** lower sulfur content in fuel, lower SO_2 emission

c. **Efficiency*:** - d. **Capital Cost:** -

e. **Life:** - f. **Operating Cost:** -

g. **Energy:** 0 h. **Maintenance Cost:** -

*Explain method of determining efficiency above.

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

a. Control Device ammonia injection, wet scrubbers and catalytic reduction for NO_x control

b. Operating Principles:

A laboratory control device - Described in Chapter 4

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

Not proven on any combustion source, not recommended

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device: No additional collection device
2. Efficiency*: 0
3. Capital Cost:
4. Life:
5. Operating Cost:
6. Energy:
7. Maintenance Cost:
8. Manufacturer:
9. Other locations where employed on similar processes: This BACT recommendation used on all solid waste-fired boilers in U.S.

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

---

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. HCEPC ~~Company~~ Monitored Data

1. 2 no sites ______ TSP 63/115 (C) SO^{2}* 63 Wind spd/dir

Period of monitoring 5 / / 80 (month day year) to 5 / / 81 (month day year)

Other data recorded ______

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

a) Was instrumentation EPA referenced or its equivalent? X Yes ____ No

b) Was instrumentation calibrated in accordance with Department procedures? X Yes ____ No ____ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. 5 Year(s) of data from 1 / 1 / 70 (month day year) to 12 / 31 / 74 (month day year)

2. Surface data obtained from (location) Tampa International Airport

3. Upper air (mixing height) data obtained from (location) Tampa International Airport

4. Stability wind rose (STAR) data obtained from (location) ______

C. Computer Models Used

1. CRSTER Modified? If yes, attach description.

2. ______ Modified? If yes, attach description.

3. ______ Modified? If yes, attach description.

4. ______ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	3.2 grams/sec
SO^{2}	12.1 grams/sec

E. Emission Data Used in Modeling Chapter 3

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review. See Chapter 3

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

See Chapter 7

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

(5) **Environmental Manager:**

(6) **Telephone No.:**

(7) **Emissions*:**

Contaminant	Rate or Concentration

(8) **Process Rate*:**

10. Reason for selection and description of systems:

See Chapters 4 and 5.

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

CHAPTER 3

AIR QUALITY ANALYSIS

AIR QUALITY ANALYSIS

The purpose of air quality analysis is to determine the effects this Project will have on the surrounding area and the attainment status of that area. This is done first determining a good estimate of the emissions from the Project, then modeling the emissions from this facility and finally adding the modeled emissions to the existing background concentration. The area of air quality analysis is less than a precise science and assumptions must be made. These assumptions include the use of air quality models. A fundamental assumption used in the analysis is that the facility is operating at full load, all day, everyday. This will lead to a more conservative analysis than will actually exist.

Facility Emissions and Monitoring

The emissions information for Facility 1 was obtained from Waste Management, Inc. (WMI), the current Volund technology licensee. The data represents the highest value obtained from stack tests done worldwide (see Appendix I). The expected emissions are shown in Table 3-1. The Project's emissions are compared to the PSD significance levels in Table 3-2.

Table 3-1
Emissions Expected from Project

	Facility 1		Facility 2		TOTAL
	gm/s	TPY	gm/s	TPY	TPY
Particulate (uncontrolled)	575	19970	400	13890	27350
Particulate (controlled)	4.6	160	3.2	109	269
Sulfur Dioxide	20.8	722	12.1	420	1142
Nitrogen Oxides	26.0	903	9.5	330	1233
Carbon Monoxide	1.68	58	5.8	200	258
Hydrocarbons	0.92	32	0.92	32	64
Lead	0.47	16.3	0.47	16.3	32.6
Mercury (vaporous)	0.05	1.8	0.05	1.8	3.6
Mercury (particulate)	$2.3x10^{-3}$	0.08	$2.3x10^{-3}$	0.08	0.16
Beryllium	$4.0x10^{-5}$	$1.4x10^{-3}$	$4.0x10^{-5}$	$1.4x10^{-3}$	$2.8x10^{-3}$
Flouride	0.53	18.4	.53	18.4	32.6
Hydrogen Chloride	23.7	823	23.7	823	1646

Table 3-2
Project Emissions Versus PSD Significance Levels

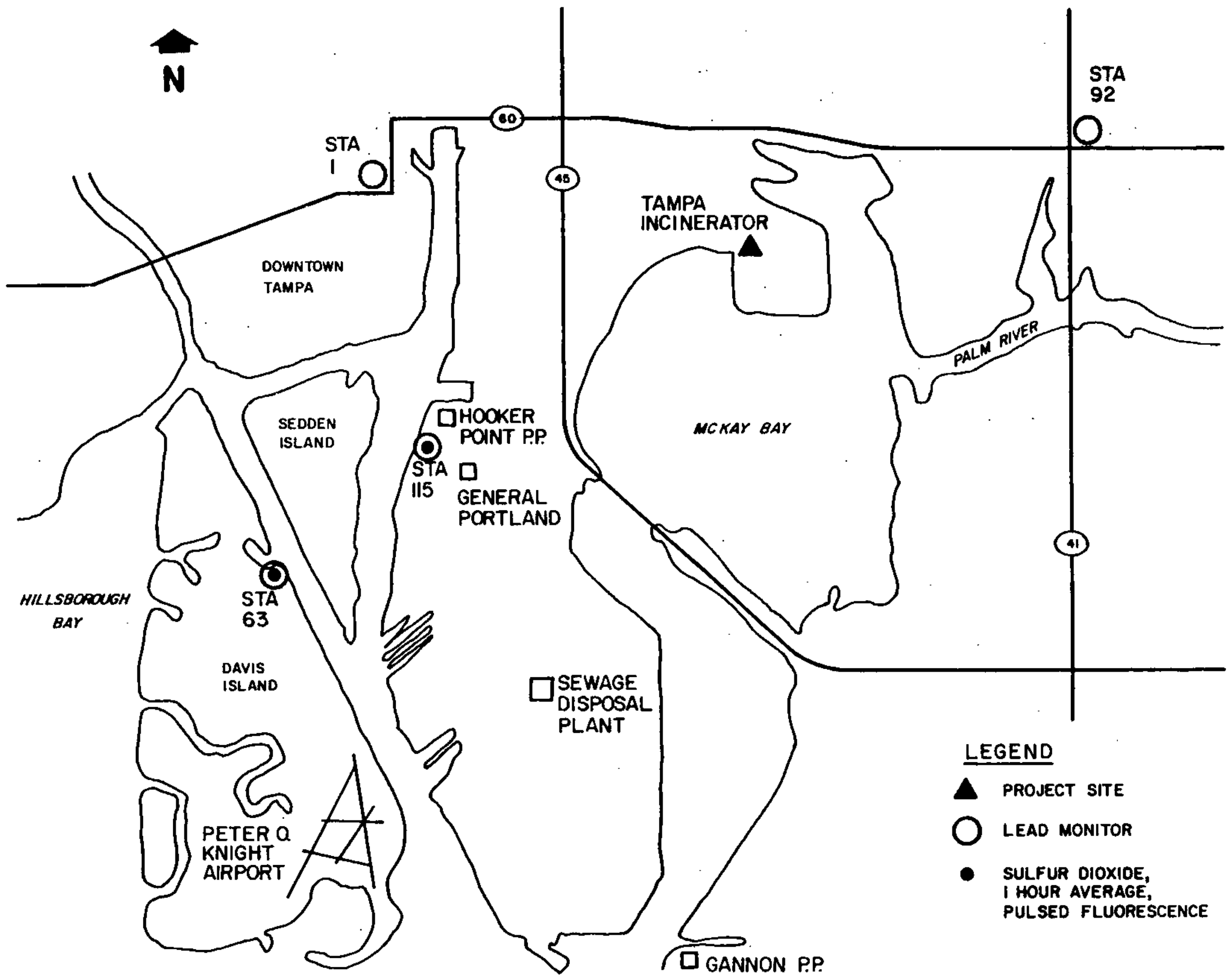
	TPY	Significance Level (TPY)	De minimus Impact Period (ug/m^3)	Worst Modeled Impact
Particulate (controlled)	269	25	10/24 hr.	5.8
Sulfur Dioxide	1142	40	13/24 hr.	24.8
Nitrogen Dioxide	1233	40	14/annual	2.3
Carbon Monoxide	258	100	575/8 hr.	11/3 hr.
Hydrocarbon	64	40	NV*	
Lead	32.6	0.6	0.1/24 hr.	0.7
Mercury (vaporous)	3.6	0.1	0.25/24 hr.	0.08
Mercury (particulate)	0.16			
Beryllium	$2.8x10^{-3}$	$4x10^{-4}$	$5x10^{-4}$/24 hr.	$6x10^{-5}$
Flourides	32.6	0.6	0.25/24 hr.	0.7

Worst 24-hour day - Day 175, 1972

*NV = No Value

The data in Table 3-2 indicate that the McKay Bay Refuse-to-Energy Project (Project) will be a major source for sulfur dioxide, carbon monoxide, nitrogen oxides, and a significant source for lead, mercury, hydrocarbons, beryllium and flouride. Based on the modeled impacts, monitoring data will be required for sulfur dioxide, lead and flourides.

To fulfill the monitoring requirements for sulfur dioxide and lead Hillsborough County Environmental Protection Commission (HCEPC) monitors have been used. Figure 3-1 shows the monitor location used in the analysis. The monitors are within the area of maximum impact. These monitors adequately reflect the air quality in the area except when the wind is from the southwestern quadrant. With southwesterly wind the effect of TECO's Gannon and Hooker's Point Powerplants and General Portland Cement Plant will be missed. To account for their effect these plants were modeled for specific days which coincided with the southwesterly quadrant maximum days and the impacts added to the Project's impact and the ambent concentrations.



MONITORING STATIONS

MCKAY BAY
REFUSE-TO-ENERGY PROJECT

FIGURE 3-1

The preamble to the August 7, 1980 PSD Rules states that, "For the noncriteria and hazardous pollutants, modeling, not monitoring, will be the mechanism used to perform most detailed air quality analyses. However, there may be circumstances where monitoring may be the only plan available to perform an adequate analysis ...", FR 52724, August 7, 1980 (in Appendix J). The flouride impact (in Table 3-2) is significant by the PSD rules, but negligible when compared to the Threshold Limiting Value (TLV) of 2 mg/m^3. Negotiations with the Florida DER have concluded that monitoring will not be required for flourides.

For acceptance testing at least EPA method 5 will be used. Any other emission test requested by the DER or EPA will also be performed.

Modeling

The CRSTER model was used to determine the effect of the sulfur dioxide emissions. These values were modified to develop modeled effects of the other pollutants. The meteorological input data was suppled by both the Florida Department of Environmental Regulation and the National Climatic Center (NCC). To reformat the NCC data to a form acceptable to the CRSTER, the preproscessor program RAMMET was used.

The modeled situation was six stacks colocated at Facility 1. The six stacks represent the four flues from Facility 1 and two flues from Facility 2. The parameters used are shown in Table 3-3. The ring distances were developed by the procedure outlined in the "Proposed Guideline to Air Pollution Models".

Table 3-3

Stack Parameters Modeled for Sulfur Dioxide

Stack	Emission Rate (gm/s)	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/sec)	Exit Temp. (^oK)	Volumetric Flow Rate (m^3/s)
Facility 1						
1	5.2	45.72	1.35	21.3	500	30.49
2	5.2	45.72	1.35	21.3	500	30.49
3	5.2	45.72	1.35	21.3	500	30.49
4	5.2	45.72	1.35	21.3	500	30.49
Facility 2						
1	10.4	50.00	1.84	18.3	477	48.66
2	10.4	50.00	1.84	18.3	477	48.66

Ring Distances (km)= 0.5, 1.0, 1.2, 1.7, 2.2, 2.9. 3.8, 5.0, 6.6, 9.0

Impact Area

Based on the CRSTER model evaluation of 1970-74 the worst annual impact occurs in 1970. The impact area is shown in Figure 3-2 by a 10.2 km radius circle. The actual area of the 1 ug/m^3 impact is also shown on Figure 3-2.

Emission Inventories

The only facilities specifically inventoried were TECO's Gannon and Hooker Point Power plants, and General Portland Cement Plant. Additional data was obtained from the CONSRV PSD application recently submitted to DER. The TECO emissions were updated by conversations with TECO personnel. Other inventories were obtained from local agencies and are shown in Appendix A and B.

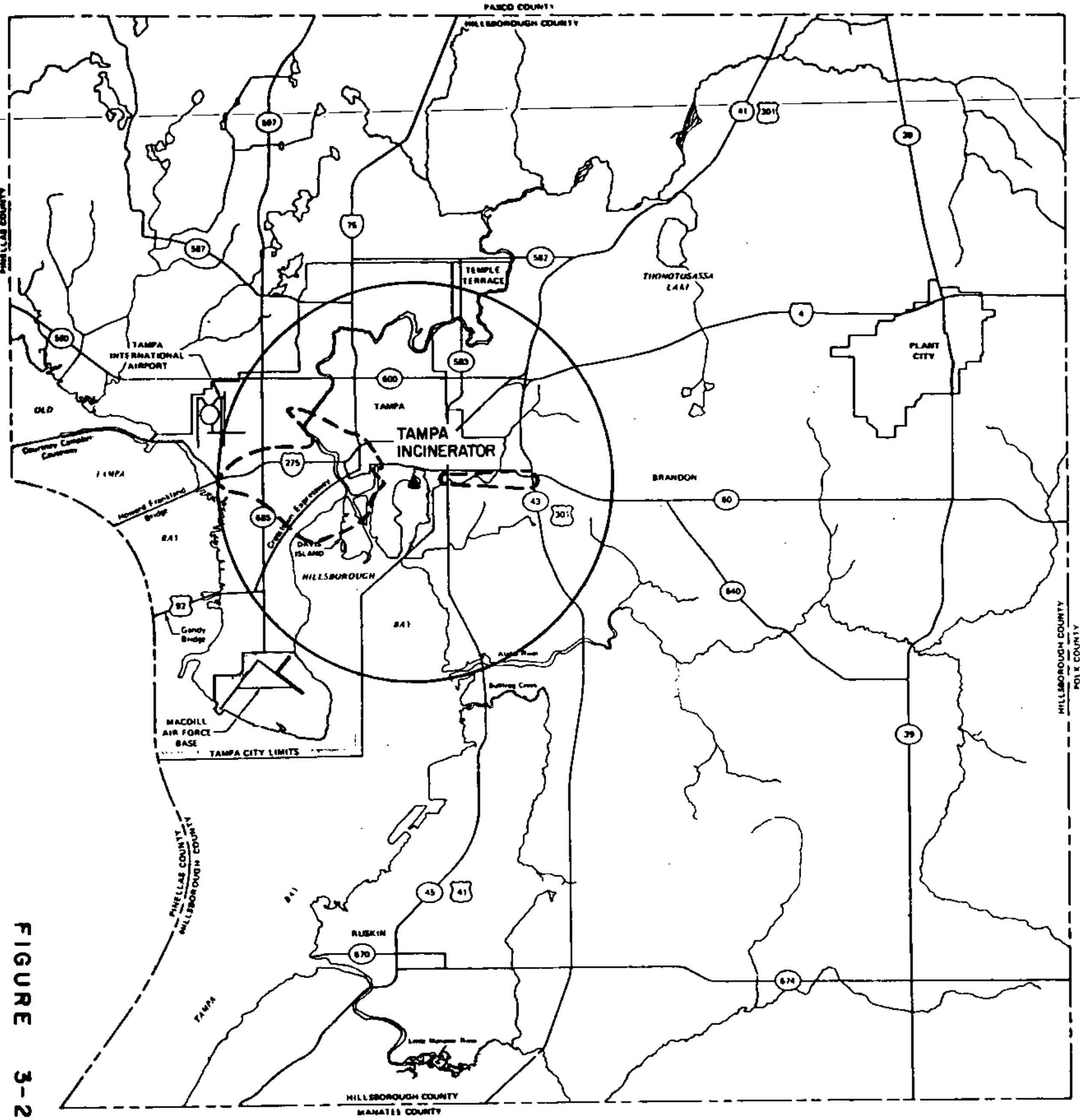


FIGURE 3-2

SULFUR DIOXIDE SIGNIFICANT IMPACT AREA

MCKAY BAY REFUSE-TO-ENERGY PROJECT

Project Impacts

Sulfur Dioxide Analysis

Hillsborough County is presently an attainment area for sulfur dioxide. All of the monitoring data presented was developed by the Hillsborough County Environmental Protection Commission (HCEPC) and is presented in Appendix C. The data is summarized annually in the HCEPC Environmental Quality series. Table 3-3 presents a summary of the sulfur dioxide monitoring data for 1978 and 1979.

Table 3-4
Sulfur Dioxide
(micrograms/cubic meter)
1-hr Averages from Continuous Analysis

1978

Station	# of Observations	Minimum Value	Arithmetic Mean	Geometric Mean	Maximum Value
63	7803	2.6	25.7	14.3	584
115	4158	2.6	22.2	10.3	342

1979

Station	# of Observations	Minimum Value	Arithmetic Mean	Geometric Mean	Maximum Value
63	7066	2.6	19.6	10.8	540
115	6466	2.6	25.6	12.3	525

The modeled impacts of the sulfur dioxide emissions are shown in Tables 3-5, 3-6 and 3-7. These values represent the highest values for each of the eight compass direction over the five years of modeling. Included in Tables 3-6 and 3-7 are some of the meteorological parameters associated with the modeled day and the day from which the monitored data was chosen. Every effort was taken to find the closest calendar day and similar wind characteristics so that seasonal variations would be minimized. As a practical matter the high and 2nd high seldom differed by more than 3%.

Table 3-5
Sulfur Dioxide
Maximum Modeled Annual Impacts
(micrograms/cubic meter)

Direction	Concentration	Distance
N	0.7	1.7
NE	1.0	1.2
E	2.2	1.2
SE	0.8	2.9
S	0.7	2.9
SW	1.2	2.2
W	1.9	2.2
NW	1.2	1.7

The highest three hour impact occurs southwest of the Project. In this case the Project, TECO's Hooker Pt. Powerplant and General Portland Cement Plant are upwind of the Davis Island monitor, Station 63.

If the modeled impact from the Project is added to the highest monitored three hour value, a highest 3 hr. ambient concentration of 178 ug/m^3 occurs. This is significantly below the 3 hr. NAAQS of 1300 ug/m^3. The Project is modeled to provide 55 ug/m^3 of this amount. The highest three hour impact from the Project alone was modeled to be 77 ug/m^3 at 1.2 km east of the Project.

The highest ground level concentration is computed by adding the highest 24-hour southwest impact to the monitored data indicates a worst 24-hour average of 72 ug/m^3. The Projects highest twenty-four hour impact is predicted to be 24 ug/m^3 2.2 km east of the Project.

Table 3-6
24 Hour Comparison
Sulfur Dioxide Concentration
(micrograms/cubic meter)

Modeled Data				Meteorology Data			Monitored Data				
				Wind			Concentration			Wind	
Direction	Worst Conc.	Day	Yr.	Dir.	Spd. (m/s)	Stability	Sta. 63	Sta. 115	Date	Dir.	Spd. (m/s)
N 0, 360	12	175 6/25	74	S	7	4	16	32	7/2/80	SSW- SSE	3.1
NE 40, 50	12	158 6/7	74	S-SW	4	2-7	16	26	4/4/81	SE-SW	5
E 90	24	175 6/25	72	W	6	4-5	5.3	3.2	6/26/80	W	4.2
SE 130, 140	12	90 2/10	74	SE-NE	4	2-7	8	2.6	3/5/81	NNW	6
S 180	15	320 11/15	72	N-NW	5.5	4-6	37	5.3	11/2/80	N-ENE	ND*
SW 220, 230	22	270 9/1	71	NE	5	4-6	50	45	9/25/81	ENE	3.5
W 270	21	306 11/5	72	E	3.5	4-6	39	29	11/23/80	E	ND
NW 310, 320	16	136 5/15	74	ESE	5	3-6	18	ND	5/4/81	SE	2.7

*ND = No Data

Table 3-7
3 Hour Comparisons
Sulfur Dioxide Concentrations
(micrograms/cubic meter)

Modeled Data					Meteorology Data			Monitored Data					
	Worst				Wind			Concentration					
Direction	Conc. (ug/m^3)	Period	Day	Yr.	Dir.	Spd. (m/s)	Stability	Sta. 63	Sta. 115	Period	Date	Dir.	Spd. (m/s)
N 0, 360	51	4	33 2/3	74	S	4.3	3-7	21	26	5	3/15/81	S	4.5
NE 40, 50	75	5	90 3/31	74	SE-NW	3.3	2-7	71	ND*	2	5/10/81	SW	3.5
E 90	77	5	246 9/6	74	W-N	2	3-6	21	21	5	6/26/80	W	4
SE 130, 140	44	6	249 9/9	72	SW-SE	3	4-7	5.3	29	4	10/20/80	N	3.3
S 180	49	5	311 11/9	74	N-NE	5	3-5	26	42	3	11/29/80	N	ND*
SW 220, 230	55	4	172 6/20	74	N-NE	3	1-7	123	6	4	6/14/80	ENE	5
W 270	73	4	110 4/18	74	E	3.5	2-7	ND	29	5	5/27/81	ENE	4.5
NW 310, 320	67	4	64 3/3	74	E/W	3.2	2-6	37	ND	1	5/4/81	SE	1

*ND = No Data

The highest annual impact is 1.2 km to the east in 1974 with a value of 2.2 ug/m^3. The annual impacts for 1970-1974 varied from 1.3 to 2.2 ug/m^3. The monitored annual arithmetic average were 25.7 and 19.6 ug/m^3 in 1978 and and 1979 respectively at station 63. Station 115 registered annual averages of 22.2 and 25.0 ug/m^3 in 1978 and 1979 respectively. The summation of the annual impact and the monitored annual average leads to a highest annual concentration of about 30 ug/m^3. This is significantly below the federal secondary standard of 80 ug/m^3 and the Florida Standard of 60 ug/m^3.

There are significant sulfur dioxide sources to the east of the Project site. The recent CONSRV PSD application analysed the impact it plus other significant sources would have in various directions. The CONSRV case VI analysed a SSE wind. This would align several facilities with the project site. The CONSRV results indicate that there would be essentially no impact from those facilities on the projects impact area.

The only other increment consuming source affecting the impact area is TECO's Gannon Powerplant. This powerplant is modifying its fuel and was granted a PSD permit around the first of the year. A letter from EPA to Mayor Bob Martinez of a Public Notice of the change is found in Appendix E. The Public Notice indicated that the maximum increment consumed by the proposed modification is as follows:

	Annual	24 Hour	3 Hour
SO$_2$	5 %	38 %	32 %

A condensation of Tables 3-5, 3-6, and 3-7, shows that the project's maximum increment consumption of the total allowed will be:

Annual	24 Hour	3 Hour
2.1 ug/m^3	22 ug/m^3	77 ug/m^3
or	or	or
11 %	24 %	15 %

Baseline was set by the TECO modification. There are two new PSD sources proposed for Hillsborough County, CONSRV and the McKay Bay Refuse-to-Energy Project. CONSRV's data indicates no impact on the Project's impact area and TECO's impact was given above. Table 3-8 shows our projection of the increment that has or will be consumed.

Table 3-8
Total Increment Consumed

	Annual		24 Hour		3 Hour	
	ug/m^3	Percent	ug/m^3	Percent	ug/m^3	Percent
McKay Bay	2.1	11	22	24	77	15
CONSRV	0	0	0	0	0	0
TECO	1.0	5	35	38	164	32
Total	3.1	16	57	62	341	47
Allowed	20		91		512	

Table 3-9 shows the increment used by the project and TECO added to the HCEPC monitored ambient conditions. This assumes that the ambient maximums plus both source maximums occur at the same place and time.

Table 3-9
Highest Predicted Ambient Concentrations
Sulfur Dioxide
(micrograms/cubic meter)

	Annual	24 Hour	3 Hour
Ambient (1979)	25.5	126	597
TECO	1.0	35	164
Project	2.1	22	77
Total	28.6	183	838
Standards			
EPA	80	365	1300
Florida	50	265	1300

Summary of Sulfur Dioxide Analysis

As was shown in Tables 3-8 and 3-9 the McKay Bay Refuse-to-Energy Project will not violate the Class II increments nor will it lead to a violation of either national or state ambient air quality standards.

Lead Analysis

The ambient lead values have exceeded the NAAQS of 1.5 ug/m^3 on a quarterly average in the past but the most recent data does not indicate an attainment problem. The highest ambient lead value consistantly occurs at station 92 (the intersection of Hwys 60 and 41). In the past year the situation has significantly improved. This is shown in Table 3-10.

Table 3-10
Lead in Suspended Particulate Matter
Quarterly Average in Micrograms/Cubic Meter

	Station Number	Quarter 1	2	3	4	Annual Average
			1978			
Health Dept.	1	0.6	0.6	2.0	0.9	1.0
Davis Island	63	0.3	0.4	0.7	0.6	0.5
Hwys 60 & 41	92	0.8	1.3	2.4	1.4	1.5
Hooker's Pt.	115	---	---	2.4	0.9	---
			1979			
Health Dept.	1	0.9	0.6	0.7	0.7	0.7
Davis Island	63	0.6	0.5	0.7	0.7	0.6
Hwys 60 & 41	92	2.1	1.4	1.4	0.9	1.4
Hooker's Pt.	115	0.6	0.5	0.5	0.4	0.5
			1980 - 1981			
Health Dept.	1	0.43	0.5	0.35	0.23	0.38
Davis Island	63	0.15	0.24	0.2	0.14	0.18
Hwys 60 & 41	92	0.60	0.93	0.74	0.44	0.68
Hooker's Pt.	115	0.14	0.26	0.6	0.28	0.32

The CRSTER model does not generate 90 day averages. To demonstrate the insignificance of the lead emissions on Station 92 the the highest 24-hour value will be used.

The highest annual sulfur dioxide value determined in 5 years of modeling occurs due east of the Project site near Station 92 and is 24 ug/m^3. The impact of lead can be proportioned by comparing the emission rates of lead to sulfur dioxide. The Project will emit 32.6 TPY of lead and 1142 TPY of sulfur dioxides. The lead impact will be 32.6/1142 or 2.9% of the sulfur dioxide impact. Thus the lead concentration at Station 92 is modeled to be 0.70 ug/m^3. When added to the past years highest quarterly average of 0.93 ug/m^3 value barely exceeds the standard. This assumes the highest 24-hour average modeled over 5 years would somehow be a quarterly average.

Summary - Lead Analysis

Based on the data this Project will not endanger the National Ambient Air Quality Standard of 1.5 ug/m^3.

Carbon Monoxide Analysis

To determine the highest concentration of carbon monoxide attributable to the Project, the concentration modeled for sulfur dioxide will be proportioned by the emission rates 258 TPY/1142 TPY or 23% of the sulfur dioxide value. Table 3-11 shows the modeled impacts of the Project. To best utilize our modeling for a conservative analysis, the 8-hour values are actually the values modeled for a 3-hour average.

Table 3-11
Maximum Carbon Monoxide Concentrations
(micrograms/cubic meter)

	N	NE	E	SE	S	SW	W	NW
8 Hour (3-hr.)	12	17	18	10	11	13	17	15
1 Hour	21	23	22	19	19	23	23	23

The carbon monoxide NAAQS standards are 40,000 and 10,000 ug/mg for 1 hour and 8 hour average respectively. The area is attainment for carbon monoxide. The Project will not have a significant impact on the ambient levels of carbon monoxide.

Flouride Analysis

By proportioning the respective emission rates the modeled data can be used to determine the highest concentration of flourides expected from the Project. The flouride concentration should be 32.6 TPY/1142 TPY or 2.8% of the sulfur dioxide concentration. The maximum 1-hour concentration is modeled to be 2.8 ug/m^3. The Occupational Safety and Health Administration threshold limiting value (TLV) for hydrogen flouride is 2.0 mg/m^3. The Project's impact is less than 2/10 of 1% of the TLV, and will not be significant.

Nitrogen Oxides

The Hillsborough Environmental Protection Commission data indicate that the highest annual average between 1975 and 1979 is 68 ug/m^3 in 1977. By proportioning the modeling results by the emission rates the nitrogen oxides are equal to 1233 TPY/1142 TPY or 108% of the sulfur dioxide values. The maximum annual nitrogen oxide impact is modeled to be 2.4 ug/m^3. This value added to the highest annual average gives a maximum annual concentration of 70 ug/m^3. When compared to the federal standard of 100 ug/m^3 it can be seen that the area will remain attainment for nitrogen oxides.

Mercury and Beryllium

The projected impact from the emissions of Mercury and Beryllium were shown in Table 3-2. Their worst impact are 1/3 and 1/8 of the de minimis values. The de minimis values are determined to be that value below which no impact is assumed to occur and the commitment of applicant and review authority resources would not be productive.

The NESHAP rules for Beryllium (40CFR61.30) require that no more than 10 grams/day be emitted. The conservative data used in these estimates indicate an emission rate of less than seven (7) grams of Beryllium per day. The NESHAP rules for Mercury (40CFR61.50) are applicable to those sources that process mercury ore, use mercury chlor-alkali cells, or dry and/or incinerate wastewater treatment plant sludges. Neither Facility I nor the Facility 2 is planned to process or burn any wastewater treatment plant sludges.

CHAPTER 4

BEST AVAILABLE CONTROL TECHNOLOGY

BEST AVAILABLE CONTROL TECHNOLOGY

Best Available Control Technology (BACT) is defined in the Florida Air Pollution Rules as follows:

> "An emission limitation based on the maximum degree of reduction of each pollutant emitted which the Department, taking into account, energy, environmental and economic impacts and other costs, determines on a case by case basis, is achievable through application of production processes and available methods, systems, and techniques, for control of each such pollutant".

The air emission for which an evaluation for BACT was conducted and the alternatives considered, both commerically available and in the research stage, for the control of each of the emissions are shown in Table 4-1.

TABLE 4-1
BACT POLLUTANTS AND CONTROL ALTERNATIVES

Air Emission	Control Alternatives
Sulfur Dioxide	Wet Scrubbers Dry Scrubbers Low Sulfur Fuel
Nitrogen Oxide	Ammonia Injection Wet Scrubber Catalytic Reduction Design and Operating Procedures
Carbon Monoxide	Design and Operating Procedures
Lead & Beryllium & Particulate Mercury	Electrostatic Precipitators (ESP) Wet or Dry Scrubbers Fabric Filters
Hydrogen Fluoride & Gaseous Mercury	Wet & Dry Scrubbers

The pollutants and the emission levels for which BACT must be determined are shown in Table 4-2.

TABLE 4-2
BACT POLLUTANTS AND ANNUAL EMISSIONS

Air Emission	Tons/Year
Sulfur Dioxide	1142
Nitrogen Oxide	1233
Carbon Monoxide	258
Lead	32.6
Beryllium	2.8×10^{-3}
Mercury (particulate & vaporous)	3.76
Hydrogen Fluoride	32.6

The evaluation of the above described control alternatives considered technical feasibility, energy usage and environmental factors. The proposed facilities are projected to be on-line approximately 80-85% of the time. Air pollution control equipment must be reliable to minimize contributions to facility downtime. A projection of the equipment's reliability can be developed only after equipment has received commercial application; therefore, commercial application of the equipment was reviewed in formulating BACT. Installation of air pollution control equipment increases the facility cost but results in benefits to the surrounding area and population. At some point, the cost of air pollution control equipment is not outweighed by the resulting benefits. To this end the costs, capital, operational and energy, were compared to the benefits. Air pollution control equipment will provide for cleaner facility air emissions; however, a waste requiring land disposal resulting from the operation of the equipment is not advantageous.

Sulfur Dioxide

Best available control technology alternatives for sulfur dioxide control are wet scrubbers, dry scrubbers, and low sulfur fuel.

Wet scrubbers generally operate by obtaining intimate contact between the flue gas and a lime slurry. Sulfur dioxide reacts with the lime forming calcium sulfate and calcium sulfite. The calcium sulfate and calcium sulfite are removed as a slurry and must be disposed of. Particulate removal devices need to be installed upstream from the wet scrubber. Wet scrubbers are utilized on coal-fired power plants in the United States and removal efficiencies of 90% and above have been obtained. This technology has not been utilized on solid waste fired facilities in the United States. The costs and effects presented later are based upon interpretations of experience at coal-fired facilities and from discussions with equipment vendors.

Dry scrubbers operate by injecting droplets of alkali reagent into the flue gas. The resulting reactions remove the sulfur dioxide as sulfites and sulfates in particulate form. The heat generated during the reaction plus flue gas heat evaporates the water carrying the alkali reagent. A particulate removal device is located downstream to remove the sulfate and sulfite particulates. Dry scrubbers have not yet operated on a commercial basis in the United States on solid waste incinerators. The first commercial scale dry scrubber has just gone on-line at the coal-fired Northern States Power Company's Riverside Power Plant in Minneapolis, Minnesota. The system's costs and effects were based upon projections provided by system vendors.

The emission rate of sulfur dioxide is dependent on the amount of sulfur in the fuel. The solid waste is estimated to have a sulfur content of less than 0.2%. Generally, coal-fired facilities have switched from high (5-7%) to low sulfur coal (1-2%) to comply with laws and regulations. The proposed facilities will utilize municipal solid waste which is low in sulfur content.

The general effects of each sulfur dioxide control alternative are summarized in Table 4-3.

TABLE 4-3
EFFECT OF SO2 CONTROL ALTERNATIVES

Area of Effect	Wet Scrubbers	Alternatives Dry Scrubbers	Low Sulfur Fuel
Energy	Increased facility energy consumption	Increased facility energy consumption	No effect
Environmental	Reduced emissions of SO_2, HF & gaseous mercury; increased amounts of residues requiring land disposal.	Reduced emissions of SO_2, HF and gaseous mercury; increased amounts of residues requiring land disposal.	Reduced emissions of SO_2
Economic	Increased facility capital and operating costs.	Increased facility capital and operating costs.	No direct facility related costs

An economic analysis of wet and dry scrubbers for two-1,000 TPD facilities is presented in Tables 4-4 and 4-5 respectively. The parameters of procedures and calculations used in the economic evaluation are found in Appendix F.

The energy affects of a wet scrubber will be an increased electrical power consumption of 6,609,000 KW per year while the dry scrubber will consume an additional 8,446,000 KW per year. The electrical power may be provided by the facility thus reducing the power revenues. Using a 1984 electricity cost of 6.5 cents/kwh, the lost revenues would be about $131,000/year with a wet scrubber and $87,000/year with a dry scrubber.

The wet scrubber will generate approximately 15,500 tons per year of sludge at 70% solids. Assuming a solids content of 70% after dewatering, the sludge will fill a volume of approximately 10 acre ft./year. The weight and density of the waste from a dry scrubber could not be accurately estimated from information available. For this analysis, the waste from a dry scrubber was assumed to approximate the dry weight of the waste generated by a wet scrubber.

The utilization of wet or dry scrubbers will have significant adverse affects on the facilities revenue, will increase the facilities energy consumption, and will require significant amounts of land for waste disposal. The incremental effects of decreases in SO_2 on the environment were not quantifiable in monetary terms. The impact of SO_2 without control by wet or dry scrubbers are presented in Chapter 7 of this application and are considered to be minimal.

The cost of energy and environmental effects of wet and dry scrubbers, when compared with the minimal decrease in projected SO_2 emissions, results in the BACT recommendation being the use of low sulfur fuel, solid waste.

TABLE 4-4
ECONOMIC EVALUATION
WET SCRUBBERS FOR SO_2 CONTROL

For Both Refuse to Energy Facilities

Cost Category	Dollars/Yr.
Equipment Amortization	1,369,200
Electrical Power	264,000
Materials	169,000
Waste Disposal	144,000
Labor	66,000
Maintenance	528,500
Total Annual Costs	$2,540,000
Cost Per Ton of Solid Waste	$4.24
Cost Per Ton of Sulfur Removed	$2,116

TABLE 4-5
ECONOMIC EVALUATION
DRY SCRUBBERS FOR SO_2 CONTROL

Cost Category	Dollars/Yr.
Equipment Amortization	2,053,000
Electrical Power	371,000
Materials	205,000
Waste Disposal	102,000
Labor	88,000
Maintenance	792,000
Total Annual Costs	$3,611,000
Cost Per Ton of Solid Waste	$6.03
Cost Per Ton of Sulfur Removed	$3,008

Nitrogen Oxide

The technologies for nitrogen oxide (NO_x) control, ammonia injection, wet scrubbers, and catalytic reduction, have not been utilized on a commercial scale at either resource recovery facilities or coal-fired power plants in the United States.

Research relative to ammonia injection has delineated the following utilization limiting factors:

- When the temperature is between 1600°F and 1800°F, the reaction:

  $$NH_3 + NO + O_2 \rightleftharpoons N_2 + 3/2\ H_2O$$

  readily takes place controlling NO emissions. Above 1800°F the NH_3 is oxidized to NO. Below 1600°F the reaction does not take place. To maintain the appropriate temperature envelope range may require a supplemental heating source.

- Ammonia can react with sulfur trioxide in the flue gas to form ammonium sulfate or ammonium bisulfate. Ammonium bisulfate can condense after emission to the atmosphere and act as a corrosive agent.

- Cyanide formation at the ammonia injection zone has occurred in the presence of hydrocarbons.

Research on nitrogen oxide control with catalytic reduction processes has identified the following problems:

- Formation of ammonium bisulfate with the resulting corrosivity problems

- Blinding of the catalyst

- Catalyst corrosion

- Formation of unexpected compounds

The wet scrubber has been demonstrated only on a glass manufacturing furnace. Furthermore, the information is insufficient, in our opinion, to judge its applicability to a solid waste fired resource recovery facility.

Nitrogen oxides (NO_x) result from the reaction of atmospheric nitrogen and oxygen in the combustion zone and the partial combustion of nitrogenous compounds in the fuel. Important factors affecting NO_x production are flame and furnace temperature, residence time of combustion gases at flame temperature, rate of gas cooling, and amount of excess air.

Given the state of the art of NO_x control technologies and the importance of combustion zone parameters in NO_x generation, the BACT recommendation for the proposed resource recovery facilities is the use of proper boiler design and operating procedures.

Carbon Monoxide

The generation of carbon monoxide is dependent upon the same factors as will be described in Chapter 5 for hydrocarbons. The BACT recommendation is state-of-the-art boiler design and operating procedures with the same basis as the lowest achievable emission rate (LAER) recommendation for hydrocarbons.

Particulate Lead, Beryllium and Mercury

Emissions of the particulate form of lead, beryllium, and mercury can be controlled by an ESP. An ESP is planned to obtain LAER for total suspended particulate emissions; consequently, the BACT recommendation is an ESP.

Hydrogen Fluoride & Gaseous Mercury

The equipment available to remove these emissions from the flue gas is of the type used to control sulfur dioxide (i.e. dry and wet scrubbers). It has been proposed that acid gases may be removed preferentially to a sulfur dioxide in some dry scrubber systems. The technologies available for control Hydrogen Flouride and gaseous mercury emissions are the same as those for control of sulfur dioxide emissions, therefore, the BACT analysis in this chapter is applicable. The minimal health effects of these emissions (see Chapter 7) do not warrant the use of these expensive control technologies. The recommended BACT for control of Hydrogen Flouride and gaseous mercury emissions is proper operating technique and facility design.

CHAPTER 5

LOWEST ACHIEVABLE EMISSION RATE

LOWEST ACHIEVABLE EMISSION RATE

Hillsborough County, Florida is a non-attainment area for emissions of hydrocarbons and total suspended particulate matter (TSP). Due to the levels of emissions from the proposed McKay Bay Refuse-to-Energy Project (see Table 3-1) Lowest Achievable Emission Rate (LAER) technology will be required for control of these emissions. This section describes the technologies which were reviewed for control of non-attainment pollutants from the facilities. The scope and format of the evaluation was drawn from the local, State, and Federal rules, regulations and guidelines regarding LAER.

LAER is defined in the Federal Clean Air Act as follows:

> "The most stringent emission limitation which is contained in the implementation plan of any State for such class or category of source, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable;
>
> or
>
> the most strigent emission limitation which is achieved in practice by such class or category of source, whichever is more stringent".

The air pollution rules of every State were reviewed for particulate emission standards for solid waste incinerators. Illinois has the second lowest emission limit at 0.05 gr/dscf. Several facilities in the Chicago area are meeting this standard. California has the lowest emission limit at 0.01 - 0.02 gr/dscf; however, no facilities have been built under these conditions. The BACT/LAER Clearinghouse reports have one entry under solid waste boilers with an emission rate of 0.006 gr/dscf. It was for a National Energy Corp. facility in Chicago. A conversation with Mr. Thajil of EPA Region V confirmed the report to be in error since the facility was never built. The state rules concerning incinerators are summarized in Appendix K.

The technologies available for the removal of particulates can be grouped into three categories; electrostatic precipitators, fabric filters or baghouses, and wet scrubbers. Characteristics of each group of technology are presented below:

Electrostatic Precipitators

- Generally capable of particulate removal efficiencies greater than 98% with efficiencies as high as 99.8% attained.
- Capital costs are generally higher relative to other emission control technology.
- Can handle high temperature gases, up to about 500°F.
- Low pressure drop through units resulting in lower energy usage by fans.
- No wastewater disposal requirements.
- Performance is sensitive to actual vs. design flue gas flow rates and particle resistivity.
- Consideration must be given to prevention of corrosion caused by acid gas condensation. Acid mist condensation begins about 300°F.
- Recognized as the most reliable and efficient technology on resource recovery systems.

Fabric Filters (Baghouses)

- Particulate removal efficiencies as high as 99.8% have been demonstrated on coal fired units.
- No wastewater disposal requirements.
- Variations in flue gas flow rate and particulate composition do not generally effect performance.
- Pressure drop through units is significant resulting in relatively high energy usage by fans.
- Available proven filter materials limit operating temperatures to approximately 500° F.
- Sparks in flue gas can cause fires within the filter.
- Consideration must be given to prevention of corrosion caused by acid gas condensation.
- Experience on resource recovery facilities is very limited.

Wet Scrubbers

- Particulates and gaseous emissions can be controlled simultaneously; however, high particulate removal efficiencies (over 95%) require high energy inputs.
- Discharge of the water saturated gas generally produces a visible vapor plume.
- Operating and maintenance costs are generally higher relative to other air emission control technology; however, capital costs are generally lower.
- Wastewater must be disposed of.
- Corrosion and erosion problems are present.
- Limited success in resource recovery systems.

Table 5-1 presents the particulate control technology utilized at some U. S. solid waste incinerators and the respective emission rate. Table 5-2 presents similar information for European solid waste incinerators all having electrostatic precipitators. It should be noted that only one European solid waste incinerator located in Switzerland utilizes a fabric filter for particulate control. As the tables show ESP's are the predominant technology for particulate control at solid waste incinerators.

Based upon the review of published reports and information obtained from American solid waste/resource recovery vendors, a particulate LAER of 0.03 gr/dscf at 50% excess air is recommended for the McKay Bay project to be achieved with electrostatic precipitators. A recent PSD permit issued in Region I for a Thermal Conversion Facility in Lawrence, Massachusetts recommend a LAER of no more than 0.03 gr/dscf.

The capital cost for the electrostatic precipitators cannot be accurately determined prior to the finalization of the Procurement documents. The range for total installed ESP costs for each facility will be from $4.5 - 6.5 million.

Technology is not commercially available for the control of volatile organic compounds or hydrocarbons from solid waste fired facilities. Hydrocarbon emissions result from the heterogeneous nature of the solid waste fuel, variations in the fuel firing rates and incomplete combustion. The average emission rate of hydrocarbons from solid waste fired facilities is 0.27 lbs. per ton of solid waste.

Operating procedures which minimize the emission of hydrocarbons also contribute to increased facility efficiency. For instance, the more complete the combustion, the higher the efficiency leading to more profitable operation. Hydrocarbon emissions will be minimized through facility design for higher efficiency and lower emissions.

TABLE 5-1
PARTICULATE CONTROL EQUIPMENT AND EMISSION RATES FOR UNITED STATES SOLID WASTE INCINERATORS

Facility Location	Control Equipment	Emission Rate gr/dscf @ 12% CO_2
E. Bridgewater, MA (150 tpd)	F.F.	0.024
Saugus, MA (1200 tpd)	ESP	0.049
Nashville, TN (360 tpd)	ESP	0.02
Norfolk, Virginia (280 tpd)	ESP	0.05
Chicago, Illinois (400 tpd)	ESP	0.030 to 0.050
Calumet, Illinois (200 tpd)	VS	0.046 to 0.049
Pawtucket, R.I. (200 tpd)	VS	0.078

F.F. - Fabric Filter
ESP - Electrostatic Precipitator
VS - Venturi Scrubber

Reference: U.S. Environmental Protection Agency; "A Review of Standards of Performance for New Stationary Sources - Incinerators"; EPA-450/3-79-009; March 1979.

TABLE 5-2
ELECTROSTATIC PRECIPITATOR AVERAGE EMISSION RATES FOR EUROPEAN SOLID WASTE INCINERATORS

Facility Location	Tons/Day	Emission Rate (gr/scf)
Dusseldorf	1,400	0.018
The Hague	1,180	0.02-0.035
Zurich	420	0.018
Copenhagen: Amayer	864	0.026-0.039
Paris: Issy	1,635	0.015-0.026

Reference: Environmental Protection Agency, "European Refuse - Fired Energy Systems: Evaluation of Design Practices", Volume II, October, 1979.

CHAPTER 6

OFFSETS

OFFSETS

The Project is located in nonattainment areas for ozone and total suspended particulate matter. The ozone nonattainment area is the entire county. The particulate nonattainment area is a 12 km radius circle with its center at the intersection of Hiways 41 and 60. The New Source Review rules for sources locating a nonattainment area require that offsets be obtained before a permit can be issued.

Since ozone is a secondary pollutant, offsets are required in the hydrocarbon precursors. The City of Tampa proposes to use the New Source Allowance presented in FAC 17-2-17(7) to provide offsets for hydrocarbon emissions. The hydrocarbon emissions are expected to be 32 TPY from Facility I and 32 TPY from Facility II. The total of 64 TPY places the project in the New Source Review category. The New Source Allowance available for Hillsborough County in 1981 is 500 TPY. This is far in excess of the offsets needed by the McKay Bay Refuse-to-Energy Project. We request that 64 TPY be credited from the New Source allowance to this Project.

As stated earlier (see Chapter 3), particulate emissions from both facilities will be 269 tons per year. This level places the McKay Bay Refuse-to-Energy Project in tier 2 for nonattainment review, and makes it necessary for the project to obtain offsets for its particulate emissions.

The City of Tampa is proposing the following three pronged approach for obtaining offset for the refuse-to-energy facilities.

1. Attempt to obtain all available offsets in the area.
2. Secure the resource recovery exemption.
3. Revise the State Implementation Plan to allow use of closed Incinerators offsets.

To obtain all available particulate offsets the City has sent a letter (Figure 6-1) to each major source listed in the present Emission Inventory of Hillsborough County and located within the nonattainment area. These sources each emit more than 100 TPY of TSP. The letter solicits offsets that may be available from these facilities in the nonattainment area and any positive response will be investigated.

The second step is to use the Resource Recovery Exemption as stated in FAC 17-2.17(3)C. This states that offsets will not be required to issue a permit if all available offsets have been obtained, the applicant has made its best effort, and the applicant will continue obtaining offsets as they become available.

Each major source has been contacted and the results are not yet in. The third step is the altered State Implementation Plan that was just approved by the HCEPC board. The new wording allows the use of the offsets from the old incinerator be applied to the project. We feel this will satisfy the offset requirements.

July 10, 1981

Dear :

The local governments, with the City of Tampa as the lead agency, have embarked on an aggressive plan to dispose of solid waste by incineration with recovery of heat energy and production of electricity. This plan would involve a conversion of the existing Tampa Municipal Incinerator and the construction of a second, new refuse-to-energy facility at the Incinerator site.

The State of Florida non-attainment air emissions regulations require offsets for emissions on non-attainment pollutants from sources locating in non-attainment areas. Because the Incinerator site is located within a Total Suspended Particulate matter (TSP) non-attainment area, offsets for TSP emissions will be required.

By this letter, the City of Tampa is seeking TSP offsets from available sources. If your firm possesses available TSP offsets from reduced emissions at your facility, or from other means, please contact Joe Murdoch at 813-223-8090.

Your time and consideration are appreciated.

Sincerely,

Dale H. Twachtmann, Administrator
Water Resources & Public Works

DHT/dra

SOURCES OF PARTICULATE EMISSIONS IN HILLSBOROUGH COUNTY

NAME OF FIRM	TELEPHONE
1. Allen Morrison, Environmental and Chemical Services Manager Gardinier, Inc. P.O. Box 3269 Tampa, Florida 33601	677-9111
2. Henry Winders, Environmental Manager General Portland, Inc., Fla. Division P.O. Box 22348 Tampa, Florida 33622	872-7777
3. Robert O'Neil, Manager-Marketing Service Florida Steel Corp. P.O. Box 23328 Tampa, Florida 33623	251-8811
4. J. L. Williams, Manager-Environmental Planning Tampa Electric Company - Tampa P.O. Box 1111 Tampa, Florida 33601	879-4111
5. John C. Thompson, Environmental Nitram, Inc. P.O. Box 2968 Tampa, Florida 33601	626-2181

CHAPTER 7

SOILS, VEGETATION AND LAND USE

SOILS, VEGETATION AND LAND USE

Growth Analysis

A Hillsborough County City-County Planning Commission publication entitled, "Population and Housing Estimates", April 1, 1970 - April 1, 1980 projects the population of Hillsborough County to increase from 630,698 to 757,300 persons from 1980 to 1985. This increase of 126,602 people represents a 20% increase in 5 years. The future projections continue to the year 2000 with an estimated increase of 63% within 20 years. For the McKay Bay Refuse-to-Energy project of the rehabilitation of the present Tampa Bay incinerator and the construction of a new facility, the workforce is expected to average between 150 to 300 persons throughout the construction phase. With the present and past construction in the surrounding area it is likely that the majority of construction workforce will be available locally. There may be some relocation of workers to move closer to the project site but this action should be considered negligible in impact analysis. The 150 persons represent less than .03% of the total population.

A sample of the types and numbers of construction workforce is shown in Table 7-1.

TABLE 7-1
ESTIMATED CONSTRUCTION WORKFORCE

Types	Workforce (Construction) (1000 TPD Facility)
Boilermakers	57
Carpenters	42
Electricians	16
Ironworkers	45
Laborers	70
Masons	14
Millwrights	30
Painters	3
Pipefitters	35
	312

For the operation of the facility, a projected employement of 65 persons is anticipated.

A sample of the types and numbers of operations workforce is shown in Table 7-2.

TABLE 7-2
OPERATIONAL STAFF

Types	Workforce (Operations) (1000 TPD Facility)
Supervisory	4
Clerical	2
Operating (shift)	41
Maintenance	10
Security	4
Janitorial	4
	65

These numbers of personnel and types are but a sample of the workforces that could be used for the construction and operations of the facility. While a few key craftsmen and supervisory personnel may not be available from the local market the majority of the workforce should be available thus providing a positive economic impact on the community.

The availability of medium priced single family housing in the Tampa Bay area is considered good and is not expected to be a problem should a portion of the workforce elect to locate in this area.

SOILS, VEGETATION AND LAND USES

OBJECTIVES

This study focuses on the potential impacts on soils, vegetation, and land uses incurred by air emissions associated with the start-up and continued operation of the McKay Bay Refuse-to-Energy Project. This endeavor addresses certain regulatory requirements of the FDER's review process. Air pollutants in this evaluation include total suspended particulate matter (TSP), oxides of nitrogen and sulfur, lead, beryllium and mercury.

STUDY AREA

The study area encompasses over 162 Km^2 (65 mi^2) in west-central Hillsborough County. A very conservative range of impact for air emissions was set at 5 km from the stack; an additional 2 km was provided for buffer zone evaluation; the total boundary is roughly Dale Mabry Hwy. (U. S. 92) to the west, Sulphur Springs (on the Hillsborough River) to the north, the outskirts of Brandon to the east, and the Archie-Greek-Big Bend area to the south.

GENERAL LAND FEATURES

At least 50 percent of the study area is urbanized to some degree. Metropolitan Tampa is located in the north and west quadrants, including the downtown central business district (CBD) (3 km west of the facility). Between the CBD and the plant is located one of the most concentrated industrial areas in the State (Tampa docks, Hookers Point). Immediately north and east of the site are equipment storage lots, warehouse and wholesale establishments, as well as the Crosstown Expressway, under construction; beyond that various residential areas ranging from dense developments to widely spaced farm areas are found. Southeast of the facilities the land is open, consisting of pine flatwood, prairies and pasture land. Fringing the shores of Hillsborough and McKay Bays and the Palm River are stands of black mangrove. The southwest quadrant of the study area includes open waters of Hillsborough Bay and spoil islands.

The terrain is flat with some gentle undulations. North of the facility, within the Tampa urbanized area, rolling relief is encountered. Maximum and minimum elevations in the study area are 70 feet (in the north quadrant) and sea level (at the Bay).

GEOLOGY AND SOILS

Native soils in the area consist of unconsolidated quartz sands of Appalachian origin. They are impregnated with irregular inclusions of clay, garnet, chert, and phosphorus. During the many periods of glaciation of the Pleistocene, sea level changes reworked the surface sediments producing the topographic features characteristic today (dunes, shorelines, terraces). Within the study area six ancient seas inundated the land to varying degrees. These seas and the current elevation to which each rose are:

Silver Bluff	+10 feet
Pamlico	+25 feet
Talbot	+42 feet
Penholoway	+70 feet
Wicomico	+100 feet
Sunderland	+170 feet

Soil series in the study area correlate well with the surface features produced by these inundations. These soils are classified and described as follows:

1. Well drained, deep sands formed on dunes just inland from ancient shorelines; Lakeland and Blanton series are most common. Soils considered excessively drained are Lakewood, Pomello, and St. Lucie.

2. Terraces between shorelines were flat and vegetated. Being poorly drained, organic material was deposited within the Soil regime. The resultant soils have a fine sandy upper layer underlain by fairly dense organic hardpans. These poorly drained soils, such as the Leon and Immokalee are the most common series in the study area.

3. Along the shores of Hillsborough and McKay Bay are sandy soils which overlay the limestone bedrock. In places, the Tampa limestone is exposed to the surface. These soils, composed primarily of the Ruskin and Adamsville series, are poorly drained and are often swampy. Their spatial distribution corresponds strikingly to the ancient Silver Bluff shoreline.

4. In the eastern portion of the study area are soils which were covered by warm, shallow marine seas during the Pleistocene. This estuarine environment had a profuse animal fauna which contribued much phosphorus on the sea bottom. These soils, such as Cainesville, Arredondo, and Fort Meade types, are loamy fine sands (sometimes containing clay) impregnated with phosphatic materials.

5. Tidal land soils lie seaward of the Ruskin and Adamsville series. These unclassified soils are highly leached and regularly flooded by saline water. Freshwater swamps and cypress domes have unclassified soils of alluvial origin; they are usually submerged in fresh water and are very acidic.

6. In depressions on flat terrain are acidic soils, such as in the Plummer and Rutlege series, which are poorly drained and consist of fine sandy clay loam to sandy clay; calcareous marls are present below the surface.

7. Adjacent to the upper reaches of the Palm River are poorly drained neutral to alkaline sands to sandy clays such as the Manatee and Felda types. These soils occur adjacent to sand overlying calcareous material; dissolution of bedrock may account for their characteristic pH.

8. Pockets of poorly drained dark colored sands of the Ona series are located east of the facility site. These sandy soils are black to gray on

the surface with a brown stained layer approximately 14" beneath the surface.

9. A large amount of native soils in the study area have been disturbed and altered by man's activities. In urban development, surface layers are generally stripped and replaced by backfill materials of various origins. In phosphate mines the overburden has been completely removed down to the bedrock.

VEGETATION

Native vegetation in the study is associated with specific soil classifications. In areas of urban or agricultural usage, non-native species have invaded or are cultivated. Table 7-3 features a compilation of soil and vegetation communities found in the area.

In residential areas plantings of various ornamental species are common; also prevalent, especially in less dense residential subdivisions are backyard gardens. In vacant lots where the native vegetation has been removed, thick coppices of Brazilian pepper are found. Fringing the shores of Hillsborough, McKay Bay and the Palm River are stamps of Black Mangrove.

TABLE 7-3

SOIL AND VEGETATION COMMUNITIES

Soil Classification	Associated Major Community Species
Well drained deep sands	turkey oak, bluejack oak, slash pine, dogwood, hickory
Poorly drained sands over organic hardpans	pine flatwoods (slash pine, palmetto, wire grass)
Poorly drained sands over calcareous substrate	sabal palm, saw palmetto and wire grass
Well drained sands with phosphatic materials	live and laurel oaks, hickory, and pines
Tidal lands	white, black and red mangrove and black needlerush
Freshwater swamps	pond and bald cypress and sweet bay.
Poorly drained acid sands	pine flatwoods (slash pine, palmetto, and wire grass)
Poorly drained neutral to alkaline soils	slash pine, water oaks, and sweet bay.
Poorly drained dark colored sands	pine flatwoods (slash pine, palmetto, and wire grass)
Urban lands	landscape plantings and backyard gardens; commerical/industrial open land is covered by Brazilian pepper.
Agricultural lands	pasture land of bahia grass; some citrus groves (oranges, grapefruit)
Phosphate pits	Abandonned quarries vegetated by pioneer species (mulberry, sweetgum, and oaks).

Agricultural lands lie within the eastern portion of the study area and consist of pastures (generally over the Leon soils), truck farms (on the better soils with phosphatic material), and citrus groves (on well drained sites).

Table 7-4 is a compilation of landscape, agricultural and other non-native species observed in the study area on May 27, 1981; this listing presents only those specimens which commonly occur.

Backyard gardens range from several square feet to an acre in size. The local climate allows for year round planting although tender plants are generally sown in spring only. Vegetables grown include corn, beans (bush, pole, lima, and pinto), peas (English and southern), greens (collards, mustards, lettuce, cabbage, celery), tomatoes, okra, carrots, turnips, broccoli, cauliflower eggplant, and peppers. The most common fruit are strawberries; garden specimens of citrus and avacado are not uncommon.

The land within the study area to the north and west is characterized by urban usage and resultant landscape plantings. Exceptions to this are in scattered parks (oaks, pine, etc.) and along the Hillsborough River Floodplain (cypress, gum, etc.). Immediately surrounding the facility site on distrubed open land are dense coppices of brazilian pepper. The tidal shoreline is fringed by black and red mangroves although the former species is more common. Severe freeze damage to the mangroves and many other tender exotics (e.g. Australian pine, cajeput) resulted from an unusually cold period during January, 1981. East of the study area the land alternates between residential areas (with gardens and landscape plantings), pastures (for Brahman cattle), pine flatwoods, swamps, and disturbed lands (vegetated by brazilian pepper). A few small citrus groves were identified in the far northeast portion of the study area.

SENSITIVE ZONES

The area immediately surrounding the facility consists of open disturbed lands (created by dredging and filling) with some warehouse and other wholesale merchandise structures. The water body just east of this fill area is McKay Bay, an emergent, or man-impacted ecosystem; it is the focal point of many area conservation groups primarily in conjunction with nesting and/or migratory bird populations. The mangrove ecosystem fringing tidal shores are important natural assets from both a fisheries and storm protection standpoints.

The residential areas 1 km west of the plant, along the Palm River, and near U. S. Highway 41 south of this stream will be the most affected living areas in the study zone. The closest housing, located west of the emission point, is typical of lower income neighborhoods and consist of compact single family and low-rise, multiple family dwelling units.

East of the plant, though some trailer parks are noted, most dwellings are from 5 to 20 years old, of frame or stucco construction, and on lots averaging 1/4 to 1 acre. Outside appearances suggest resident incomes are in the low to middle class standard.

TABLE 7-4

LANDSCAPE, AGRICULTURE AND OTHER NON-NATIVE SPECIES

Common Name	Genus	Species	Location
Grasses			
Bahiagrass	Paspalum	notatum	Pastures and lawns
Bermudagrass	Cynodon	dactylon	lawns
St. Augustine Grass	Stenotaphrum	secundatum	lawns (most common lawn grass
Wire Grass	Aristida	stricta	native; pine flatwoods
Panic Grass	Panicum	sp.	native; on disturbed sites
Ground Coverings			
Periwinkle	Vinca	spp	native; disturbed sites and landscape plantings
Lily-turf	Liriope	muscari	landcape plantings
Flowers			
Chrysanthemum	Chrysanthemum	indicum	landscape plantings
Begonia	Begonia	sp	landscape plantings & hanging baskets
Geranium	Pelargonium	sp	landscape plantings
Marigold	Tagetes	spp	landscape plantings
Phlox	Phlox	drummondi	native; along roads and railroad tracks
Rose	Rosa	spp	landscape plantings
Bulbs			
Day-lily	Hemerocallis	sp	landscape plantings
Canna lily	Canna	sp	landscape plantings
Ferns			
Asparagus Fern	Asparagus	sp	hanging baskets and window pots
Succulents			
Spanish Bayonet	Yucca	aloifolia	native; landscape plantings and along roadways
Century Plant	Agave	americana	landscape plantings

TABLE 7-4 (Continued)

Common Name	Genus	Species	Location
Palms			
Cabbage palm	Sabal	palmetto	native; prairies and landscape plantings (state fee)
Areca palm	Chrysalidocarpus	lutescens	landscape plantings
Canary Island date palm	Phoenix	canariensis	landscape plantings
Coconut palm	Cocos	nucifera	landscape plantings
Manila palm	Veitchia	merrillii	landscape plantings
Queen palm	Arecastrum	romanzoffianum	landscape plantings
Native Trees			
Slash Pine	Pinus	elliottii	pine flatwoods, swamps, & left on developed land
Longleaf Pine	Pinus	palustris	on drier sites and in landscapes
Live Oak	Quercus	virginiani	better, dry soils and landscapes
Water Oak	Quercus	nigra	poorly trained sites
Red Cedar	Juniperus	silicicola	soils underlain by calcareous material and landscapes
Sweet Gum	Liquidambar	styraciflua	poorly drained sands and loams
Sweet Bay	Magnolia	virginiana	poorly drained acid sands
Turkey Oak	Quercus	laevis	excessively drained sands
Bluejack Oak	Quercus	incana	excessively drained sands
Bald cypress	Taxodium	disthichum	riverine swamps
Pond cypress	Taxodium	ascendens	cypress domes and depressed lands among pine flatwoods along ditches and streams
Black mangrove	Avicennia	nitida	tidal swamps
Red mangrove	Rhizophora	mangle	tidal swamps seaward of black mangrove
Hickory	Carya	sp	mesic forests

TABLE 7-4 (Continued)

Common Name	Genus	Species	Location
Native Shrubs			
Saw palmetto	Serenoa	sp	pine flatwoods and deep sands
Yaupon holly	Ilex	vomitoria	deep sands and landscapes
Gallberry	Ilex	coriacea	pine flatwoods
Wax myrtle	Myrica	cerifera	pine flatwoods
Exotic Species			
Australian Pine	Casuarina	spp	along roads and property lines
Citrus	Citrus	spp	oranges, grapefruits, limes, lemons, and tangerines in backyards or small groves
Jerusalem thorn	Parkinsonia	aculeata	disturbed open land and landscapes
Norfolk Island pine	Araucaria	excelsa	landscape plantings
Cajeput	Melaleuca	leucadendra	disturbed open land
Rubber tree	Ficus	sp.	landscape plantings
Banana	Musa	spp	landscape plantings
Bamboo	Bambusa	sp.	landscape plantings
Sago palm	Cycas	revoluta	landscape plantings
Pampas grass	Cortaderia	sellonna	landscape plantings
Copper leaf	Acalypha	wilkesiana	landscape plantings
Croton	Cordiaeum	variegatum	landscape plantings
Hibiscus	Hibiscus	spp.	landscape plantings
Oleander	Nerium	oleander	landscape plantings
Surinam cherry	Eugenia	uniflora	landscape plantings
Brazilian pepper			grows in dense thickets on disturbed open land.

POTENTIAL IMPACTS OF AIR EMISSIONS

I. TOTAL SUSPENDED PARTICULATE MATTER (TSP) -- GENERAL EFFECTS

A. Atmospheric Effects

Once the project becomes operational, the ambient air concentration of TSP within 1 km of the emission source should increase. Visibility in the immediate vicinity will be reduced due to light scattering by the particles. Since TSP acts as a condensation nuclei for many aerosols, increased light absorption can also be expected. Coupled with reduced visibility is a decrease in the intensity of light reaching the ground. Downwind of the emission some increase in precipitation can be anticipated due to the presence of weather active nuclei for condensation. The chemical character of rain can possibly be influenced by TSP if sulfur and nitrogen oxides and other gases are absorbed by the TSP and, eventually, are precipitated.

B. Effects on Humans and Other Animals

TSP effects individuals primarily through respiration. It is known that chronic exposure to high levels of TSP may contribute to bronchitis, sinusitis, asthma, and certain other pulmonary diseases.

Connection of TSP with cardiac diseases has also been proposed. Decreased visibility and other aesthetic effects of TSP may incur some acute psychological consenquences.

C. Effects on Materials

TSP can act as condensation nuclei for absorbed or adsorbed gases like sulfur dioxide, hydrogen sulfide, and nitrogen dioxide. The net effect of this and other synergistic reactions in the atmosphere will be an increase in corrosion of many metal surfaces. This is especially critical regarding certain non-ferrous alloys (such as used in electrical relay switches) and steel and zinc. Dust collection on electrical contacts can interfere or disrupt transmission. TSP can discolor building surfaces, especially those of concrete. TSP forms a film of soot on the surface; acids adsorbed or absorbed on the TSP can cause chemical destruction of the building material. On painted surfaces the obvious visual effect of TSP is also noted. Water soluble chlorides and sulfates which frequently accompany the particle are potential sources of osmotic blistering of painted surfaces.

TSP falling on wet paints and finishes can cause visual imperfections as well as accelerated corrosion of protected material. Clothing and other textile materials are easily soiled by TSP; frequent washing to remove soils reduces material life. Cellulose materials, such as linen, cotton, and rayon are very sensitive to acidic constituents with the TSP.

D. Effects on Vegetation

Studies of airborne dust on vegetation have been limited to cement--kiln emissions. Dust settling on leaves tends to form crusts which inhibits plant growth; calcium hydroxide associated with the encrustations can cause leaf tissue destruction. Soot can clog leaf stomata and can induce necrotic spotting especially if acidic substances accompany the TSP.

Condensation of nitrogen and sulfur acids on TSP can greatly alter the chemical nature of rain (e.g. acid rain).

The light scattering and adsorptive effect of TSP reduces the intensity of sunlight reaching leaf chloroplasts. Under severe conditions, airborne TSP may interfere with the soil--atmosphere water budget altering plant zone climate.

Fluorosis and arsenic poisoning have been reported where livestock have eaten plants covered with fluoride--containing TSP and arsenic--containing TSP.

II. TOTAL SUSPENDED PARTICULATE MATTER--(TSP) POTENTIAL IMPACTS IN THE STUDY AREA

The role of airborne particles as condensation nuclei for various oxides of sulfur and nitrogen is of particular significance. Ambient sulfur oxide concentrations are elevated due to numerous industrial and utility emissions. Furthermore, nitrogen oxides will increase as waste trucks resume deliveries to the project and the east-west expressway is completed.

Soils in the study area are generally acidic and vegetated by adapted plants. Chronic changes in the rain chemistry can effect plant growth and community structure. When the incinerator was operating heavy loads of TSP were discharged into an ambient atmosphere already high in sulfur oxide. Though the terrain and it's hydrologic features have been greatly altered, dense hammocks (two-to-seven acres in size) yield specimens of sabal palm, willow, wax myrtle; however an introduced species, the Brazilian peper, clearly dominates. This prolific tree has invaded most man-altered landscapes in South Florida and displaces native ecosystems. Whether the dominance of the so-called Florida holly tree is due to local air and light conditions or to the artifical creation of the substrate cannot be determined.

Start-up and operating conditions for the facility include minimum requirements for TSP emissions which are drastically reduced from former levels. This and the current chemical nature of the local atmosphere mitigate the above mentioned impacts in the study area and should limit chronic effects to the immediate plant vicinity (4 km). Some impacts (visibility reduction, material soiling, etc.) could be imparted to the residential areas beginning 1 wk west of the plant and 2 wk east of McKay Bay. TSP induced damage to vegetation or adverse effects on human and other animal health due to the operation of this facility are judged to be highly unlikely.

TSP effects on adjacent mangrove lands and estuarine waters has not been adequately studied. Upon cursory observation it is evident that damage to the community has not occurred from past conditions although the mangrove shrubs now bear the scars of a severe winter kill.

Acidic substances associated with the TSP tend to reduce rain pH which speeds the dissolution of calcareous rock; along the eastern shore of Tampa Bay but at distances from the stack greater than 3 km. This distance factor greatly minimizes any chemical impact on study area agricultural lands, which lie from 4 to 7 km east of the emission point.

III. EFFECTS OF NITROGEN OXIDES -- GENERAL

A. Effects On The Atmosphere

Nitrogen oxides are most common in the air as nitric oxide and nitrogen dioxide. Nitrogen dioxide absorbs light energy over the entire visible spectrum which can greaty reduce visibility and light intensity. Nitrogen oxides in complex interactions with hydrocarbons, is an important factor in smog formation; morning hour anbient Nitrogen oxides concentrations have been directly correlated with photochemical oxidant levels later in the day. The chemical character of rain and TSP can be altered by the action of gaseous and/or liquid Nitrogen oxides, as discussed previously.

B. Effects On Humans And Other Animals

Nitric oxide has little harmful effect on humans; however, when oxidized to Nitrogen Dioxide, adverse conditions form. Symptoms range from increased airway resistance to formation of emphysema--type lesions in the lungs. Mice exposed to high Nitrogen dioxide concentration were more susceptible to pulmenary infections (e.g. bacterial pneumonia, influenza).

There is evidence that excessive Nitrogen Dioxide can contribute to cellular changes in the heart, liver, and kidney, prompted by inbalances in blood gases. Human exposure to very high Nitrogen Dioxide concentrations for five minutes has produced death. Methemoglobin levels in the blood of children are usually high where ambient Nitrogen Oxides concentrations are also high.

Smog, a direct product of excessive Nitrogen Oxides, produces physiological and psychological aberrations in humans and animals.

Secondary effects on human health, center on the strong odor produced by Nitrogen Dioxide and the aesthetic impacts of visibility reduction.

C. Effects On Materials

High Nitrogen Dioxide concentrations can accelerate the fading of sensitive dyes used in cellulose acetate fibers. Cotton and nylon textile fibers can be physically damaged in environments high in Nitrogen Oxides. Excessive particulate nitrate in the atmosphere has been cited as causing stress corrosion of nickel-brass spring relays used in electrical transmission.

D. Effects On Vegetation

Laboratory studies illustrate that excessive Nitrogen Dioxide concentration causes necrotic spotting of leaves. Continuous fumigation of navel organge trees with high levels of Nitrogen Dioxide caused leaf abscission and chlorosis.

There is some evidence that plants may be more sensitive to high Nitrogen Oxides in the air during the day than at night. The extent to which Nitrogen Oxides affects photosynthesis is largely unknown, although reduced growth is probable. The role of Nitrogen Oxides in smog formation indirectly impacts vegetation by reducing light intensity.

IV. NITROGEN OXIDES--POTENTIAL IMPACTS ON THE STUDY AREA

The combustion of solid wastes releases considerable amounts of Nitrogen Oxides to the atmosphere; by far the largest emitters are automobiles and fossil fuel fired power plants (especially those using natural gas or coal). With the exception of the Hookers Point Power Plant (which uses fuel oil), all TECO units in or near the study area now or soon will be burning coal. Ambient

Nitrogen Oxides in the atmosphere will futher increase as traffic into and around the facility and the burning of solid waste resumes.

High concentrations of Nitrogen Oxides in the study area atmosphere can result in chemical changes in rain, visibility reduction, smog formation, and necrotic disease in vegetation.

Formation of acids of nitrogen and their impact on water are similar to those previously discussed in the section on TSP. Of particular significance in Tampa's humid elimate is stress corrosion of electrical hardware by atmospheric nitrates.

It is difficult to assess trade offs in Nitrogen Oxides concentration once the new east-west expressway is completed. By improving traffic flow, vehicular Nitrogen Oxides emissions should decrease, but by providing better access, local traffic may increase. Nevertheless, refuse trucks and the cars of plant employees and visitors will again come to the facility on a daily basis which will increase Nitrogen Oxides concentration in the air. However, trucks and cars powered by diesel engines emit far less Nitrogen Oxides than do conventional gasoline driven vehicles.

The reaction of nitrogen oxides with atmospheric oxygen produces ozone contributes to smog formation. Smog has and continues to be a frequent problem in Tampa. Startup and operation of this plant will aggravate the local situation to some degree although its relative contribution of Nitrogen Oxides to the ambient atmosphere will be low.

Damage to vegetation caused by this project would be limited to plants immediately surrounding the site. Chlorosis or leaf abscisson have not been studied in the adjacent emergent communities. As previously mentioned, it is difficult to evaluate the successional stage this stressed ecosystem has reached (e.g. pioneer, climax). It appears that native vegetation exists by virtue of its height, suggesting that the brazilian pepper is taking over. It can be speculated that this ubiquitous species is better adaped to local air quality and perhaps more resistent to the effects of Nitrogen Oxides; (and other air pollutants) than certain native vegetation.

Conversion of atmospheric Sulfur Dioxide to sulfur trioxide is increased in the presence of monovalent oxygen, as is liberated by Nitrogen Dioxide when exposed to sunlight. Sulfur Trioxide is transformed into sulfuric acid by reactions with moisture. Excessive Nitrogen Oxides coupled with ambient Sulfur Dioxide can yield an acidified rain capable of corroding surfaces and irritating human respiratory organs.

V. EFFECTS OF SULFUR OXIDES --GENERAL

A. Effects On The Atmosphere

Sulfur Oxides is a by-product of fossil fuel combustion, kraft pulp and paper processes, and sulfur recovery plants. In the atmosphere, it is most commonly found as sulfur dioxide, but also as sulfur trioxide and sulfurous or sulfuric acid. Sulfur acid mists and gaseous Sulfur Oxides absorb sunlight and form complexes with TSP which increases light scattering. The influence of Sulfur Oxides complexed with TSP on rain chemistry has already been discussed.

B. Effects On Humans And Other Animals

Pathological lung change or mortality in animals required high concentrations of Sulfur Dioxide or Sulfuric Acid.

The most common malady of humans caused by high Sulfur Oxides is increased airway resistance due to bronchioconstriction. Since Sulfur Dioxide is quite soluble, it is absorbed rapidly in the upper portions of the respiratory tract; deepened breathing in contaminated atmospheres (such as when exercising) facilitates the penetration of Sulfur Dioxide into the alveoli of the lung.

Sulfuric acid is much more of an irritant than is Sulfur Dioxide; its effects on humans and animals are highly dependent on particle size. Like Sulfur Dioxide, it increases airway flow resistance and may have additional corrosive effects on tissue.

C. Effects On Materials

Atmospheres polluted with Sulfur Oxides are often more corrosive than marine environments; stress failures of electrical equipment and increased resistance of contacts (due to coating of corrosion products) are principal consequences.

Sulfurous and sulfuric acids attack carbonate--containing stone (e.g. limestone, marble, mortar) and convert the carbonate to readily soluble sulfates.

Sulfur acids also reduce the strength of certain plants (cotton, hemp) and synthetic fibers. Both paper and leather absorb Sulfur Dioxide which causes strength loss, brittleness, and some discoloration.

D. Effects On Vegetation

Adverse impacts stem from a plant's ability to transform absorbed Sulfur Dioxide into Surfuric Acid and then to sulfates which are deposited in the leaf. Visible symptoms of sulfates storage stress include acute legions, chronic chlorosis, and excessive leaf abscission.

The acid effect of Sulfur Oxides (i.e. sulfurous, sulfuric acid) does promote chlorophyll degradation in lichens and mosses; toxicity is greater at higher humidity and lower pH. The ability of the plants to metabolize Sulfur Dioxide to sulfates correlates with their resistance to toxicity. The effect of TSP-associated Sulfur Oxides on rain chemistry, soil pH, and vegetation have been previously discussed.

Of some local interest is the utilization of Sulfur Dioxide by tomato plants in their protein metabolism.

VI. SULFUR OXIDES--POTENTIAL IMPACTS IN THE STUDY AREA

Sulfur Oxides are not in high concentrations in most refuse incinerator exhaust gases; the most significance effect of the project on ambient Sulfur Oxide levels is tied to its emission of Nitrogen Oxides and TSP. The importance of TSP as condensation nuclei for aerosols of Sulfur Ocides and the role of Nitrogen Dioxide in forming Surfuric acid have both previously been discussed.

Damage to vegetation and buildings, and adverse effects on human health due to Sulfur Oxides discharged into the atmosphre by this facility are not anticipated, although Sulfur Oxides concentrations in the immediate study site (1 km) will vary directly with plant operation.

VII. EFFECTS OF BERYLLIUM (Be)--GENERAL

A. Effects On The Atmosphere

Beryllium is found in the atmosphere as an oxide or in a variety of soluble and insoluble compounds. These substances may be associated with TSP. Relationships betwen Beryllium and TSP and atmospheric interactions of Beryllium are largely unstudied.

Beryllium is a product of various metallurgical industries, is used in rocked fuels and is assoicated with atomic power plants. Atmospheric contamination is accomplished by the combustion of material containing Beryllium and by the suspension of Beryllium particles from surfaces. There is also speculation of a pathway between Beryllium in thermal effluents of nuclear power plants and the atmosphere.

B. Effects On Humans And Other Animals

Beryllium is one of the most hazardous and toxic of nonradioactive substances used in industry. Soluble compounds, such as beryllium sulfate and beryllium chloride produce acute pneumonitis; certain insoluble substances such as metallic beryllium and BeO produce berylliosis, a chronic pulmonary disease. Body-wide systemic damage with respiratory, dermal renal and skeletal manifestations can also occur. Studies relating cancer mortality to Beryllium in air samples found strong connections between Beryllium and pneumonia, with possible links to cancer in males.

Physical contact with Beryllium is much less toxic; contact dermatitis consisting of a rash is common to sensitive individuals and disappears after Be handling ceases.

Other manifestations attributed to Beryllium poisoning include allergic dermatosis, chemical ulcer, and ulcerating granuloma.

C. Effects On Materials

Potential impacts of Beryllium on various materials are unstudied.

D. Effects On Vegetation

Some Beryllium in the soil is toxic to plants due both to poisoning and to nutrient depletion. In bush beans, Beryllium taken into the plant from the soil was toxic in small doses; the copper content of the plant was reduced in direct response to Beryllium uptake.

VIII. BERYLLIUM--POTENTIAL IMPACTS IN THE STUDY AREA

Beryllium could be associated with certain wastes incinerated at the site. The estimated emissions are below the deminimas values and this should not be a problem. The nature of the emitted Beryllium compounds (e.g. soluble, insoluble) will influence their dispersion. Soluble materials may form complexes with other aerosols, mists, or gases and liquids bound to TSP; insoluble compounds will precipitate with TSP.

Toxic effects, if any, would most likely appear first in vegetation surrounding the site or in facility employees.

IX. LEAD -- GENERAL

A. Effects On The Atmosphere

Lead in the atmosphere is found as lead dust or a TSP associate and originates from certain metal finishing processes and smelters, lead foundaries, coal fly ash from power plants, and vehicular exhausts (where leaded gasoline is used). The most common forms of lead compounds are lead oxides and lead salts. Inorganic lead from automobile engine deposits are chlorides, bromides, and sulfates.

The association of lead with TSP may play a role in the formation of smog and/or visibility impairment. The effect of particulate lead on atmospheric processes are unknown; any role as a condensation nuclei is not reported, although lead aerosols are significant in some areas and could absorb and/or scatter light.

Residence time of lead isotopes in the atmosphere indicates that the compounds are efficiently captured by rainfall and precipitated.

B. Effects On Humans And Other Animals

Lead causes toxic reactions in humans when it is ingested and inhaled; inhalation produces more severe poisoning. Ingestion of lead is accomplished by consuming containinated plants, animals and water. It is persistent in the environment and is accumulated in food chains. The most serious (and common) malady of lead is lead poisoning; symptoms range from body pains and dermography to encephalopathy; victims of lead intoxication exhibit sluggish behavior and other traits often resulting in inaccurate diagnosis. Mutagenic and carcinogenic implications of lead are not well studied.

There are many instances of lead poisoning of livestock which have consumed vegetation contaminated with precipated lead.

C. Effects On Materials

Research on the direct impact of atmospheric lead compounds on materials is not available. The abilities of physical surfaces to absorb, adsorb, or evict lead particulates is of significance to immediate ambient lead concentrations.

D. Effects On Vegetation

Metal dusts of lead carbonate, lead oxide and lead sulfate have little or no direct or indirect harmful effect on plants. The most significant relationship between vegetation and lead is the potential for consumption of contaminated plant material by livestock an the resultant effect on food chain species.

X. LEAD--POTENTIAL IMPACTS IN THE STUDY AREA

Emissions of lead from the proposed facility would arise from the combustion of lead materials in batteries, paints, certain metal alloys, and street dusts. Due to the rapid settling and rain washout charcteristics of these emissions direct impacts would be limited to the area immediately surrounding the facility. It is not possible to project any human impacts although lead concentrations of soils onsite and in surrounding estuarine waters may rise, stimulating conern of bioaccumulation.

Resumption of traffic to the facility will increase lead accumulation onsite roadways and on adjacent vegetation.

XI. MERCURY -- GENERAL EFFECTS

A. Effects On The Atmosphere

Atmospheric mercury is derived from:

1. natural process, including the erosion of mercury--containing soils and rocks and other hypogene and supergene processes and,

2. from the combustion of certain fossil fuels and other materials, including some agricultural chemicals (fungicides), paints lubricants, and batteries. Mercury is liberated to the atmosphere through evaporation and has many forms, notably as Hg vapor, inorganic compounds (e.g. $HgCl_2$), and organomercurials (ethylmercury chloride).

Ambient mercury concentrations in the air vary seasonally with temperature and daily with barometric pressure. At least one study has related the occurence of smog with high atmospheric mercury.

Mobility of mercury is enhanced by its characteristic high vapor pressure in the metallic state. Increases in temperature increases the saturation level of mercury in air in equilibrium with metallic mercury. Rainfall conveys a large part of airborne mercury to surrounding waters and soils; Mercury is strongly absorbed by soils and sediments.

B. Effects On Humans And Other Animals

Organomercurials are more readily absorbed by animals and are more difficult to excrete. Certain inhaled inorganic mercury phenyl compounds leave the blood in a few hours and are promptly excreted; alkylmercurials, however, are highly toxic. In humans, mercury has been shown to affect spindle formation in chromosomes producing aberrant divisions; breakage of chromosomes is also reported.

Mercury poisoning, or mercurialism, is most frequently contracted by inhalation of mercury vapors. Symptoms of mercurialism observed in laboratory animals are an increase in catalase activities of blood erythrocytes, anemia, increased salivation and apathy. In humans mercury inhibits certain enzymes, promotes potassium ion loss, blocks glucose uptake by erythrocites and muscles, causes lesions of the central nervous system and alters transmembrane potentials thereby blocking nerve conduction. Chronic manifestations of Hg poisoning are gingivitis and stomatitis, and tremor and erethism. Death usually results from acute exposure.

The hazard posed by mercury in the environment came to light in the last few decades in Minamata and Nigata, Japan, where fatalities and teratogenic effects of local people were attributed to their consumption of mercury--contaminated fish.

C. Effects On Materials

Data concerning the impact of mercury on materials are not available.

D. Effects On Vegetation

Generally, mercury can cause chlorosis, leaf abscission and slowed growth in plants. In experiments with bean and mint plants, exposure to mercury vapor caused leaves to turn completely black within 3 days. Coatings of sulfur or water on plant leaves inhibited this effect of mercury. It was further shown that mercury is is not harmful to plants unless it is mixed with soil or water. Mercury oxide in the soil caused feebleness and disfiguration of bean plants while direct contact of mercury with mint plant roots was fatal.

Mercuric chloride and organic mercury fungicides are reduced in the soil forming metallic mercury which can injure plants.

XII. MERCURY--POTENTIAL IMPACTS IN THE STUDY AREA

The volatile nature of mercury makes impact analysis difficult. Mercury emissions from the facility will result from the combustion of batteries, vegetative materials (including textiles and paper) containing mercury based fungicides, certain plated metals, and mercury-laden dust and dirt. The atmospheric residence time and dispersion area for mercury is probably small; thus most of this pollutant will remain at or very near the site. Therefore, some increase in soil levels of mercury immediately surrounding the stack is anticipated. Washoff of mercury compounds with runoff into adjacent waters is inevitable where they can enter the food chain.

The toxicity of most plants to mercury should be utilized to monitor the extent of mercury pollution to the study site (e.g. conduct routine examinations of vegetation for mercury disease manifestations (such as leaf blackening).

Alternative

The continued and expanded use of coal by most study area power plants will further increase ambient mercury concentration; the potential for toxic effects on humans, animals, and plants will likewise increase.

Whether sulfur compounds in dusts covering vegetation at the study site interfere with the destruction of leaf tissue by mercury is worthy of further study.

XIII. FLUORIDE--GENERAL EFFECTS

A. Atmospheric Effects

Fluorides are found in the atmosphere as gases, such as hydrogen fluoride (HF) and silicon tetrafluorides (SiF_4), or a particulate substances, such as cryolite, fluorapatite, calcium fluoride and aluminum fluoride. Both gaseous and particulate Fluoride compounds, like NO_x and SO_x interact with aerosols and dust in the atmosphere which further ramifies the potential impacts of particulate matter. Natural sources of Fluoride include the dissolution of both igneous and sedimentary rocks. Of particular interest is the location of extensive deposits of phosphate (chiefly fluorapatite) in the eastern portion of the study area, centering near Bartow. In addition, many Fluoride compounds are contributed to the atmosphere through vulcanism.

Fluoride is contributed to the atmosphere primarily by man-made (industrial) sources. The manufacture of phosphate fertilizers and wet-process phosphoric acid releases Fluoride compounds during the crushing and drying of phosphate rock (fluorapatite dust) other Fluorides are generated by the manufacture of normal superphosphate fertilizer (hydrofluoric acid and SiF_4), the production of wet-process phosphoric acid, and in producing 4 triple superphate fertilizer from phosphoric acid. Waste liquors from wet-process phosphoric acid are generally stored in settling ponds; as concentrations of hydrofluoric acid and fluorosilicic acids increase in the pond, volatile fluorides vaporize into the atmosphere. Fluoride emissions are also produced (to a lesser degree) by the manufacture of diammonium phosphate fertilizer.

Fluorides are also produced by the manufacture of elemental phosphate; SiF_4 may leak into the atmosphere around seals in older-design boilers. Since most fluorine must be removed from fluorapatite in the preparation of animal feed supplements, emissions of HF and dust result.

In the manufacture of Portland cement, mixtures of clay and limestone are gradually heated in rotary kilns to form clinker which is then ground to a fine powder. Fluoride in the clay reacts with lime during firing forming Calcium Fluoride. Resulting Fluoride dusts from the operation (if uncontrolled) can escape into the atmosphere. Dusts from "white cement" manufacturing is much higher in Fluoride due to the utilization of cryolite and Fluorspar as fluxing agents.

Most coal contains some Fluoride, usually as Fluorapatite or Fluorspar. During combustion (as in a power plant) approximately half of the Fluoride is evolved as HF, SiF_4 or in association with particulate matter

The most significant sources of atmospheric F result from the manufacture of aluminum and steel. Emissions from aluminum electrolysis cells include gaseous HF and SiF_4 compounds; particulate Fluoride compounds are primarily calcium fluoride, aluminum fluoride, and chiolite. Calcium fluoride and HF are the primary constituents in emission from most steel manufacturing process.

Fluorides are also a potential air contaminant in the manufacture of brick, tile and pottery (HF and SiF_4); in the manufacture of glass, enamel, and fiber glass mats and fibers (HF and calcium fluoride); in the generation of commercial fluorides (HF and Sif_4); in petroleum refining; in metal casting, welding, and brazing (calcium fluoride; and in certain electroplating processes).

A wide variety of fluorides are also used as biocides, including sodium fluoride, sodium fluorosilicate, barium, fluorosilicate, fluoroacetic acid, and those compounds sold under trade names of Balan, Benefin, and Cotoran. Utilization of the chemicals as sprays or dust can release Fluoride into the atmosphere; of significance to this study are the potential emissions through combustion of residual biocides by the proposed facility.

B. Effects On Humans And Other Animals

In humans, gaseous fluorine and HF are absorbed from the respiratory tract and through the skin; ingested soluble fluorides are absorbed through the gastrointestinal tract. Severe effects on airborne fluoride on man includes crippling fluorosis and osteosclerosis; most fluorine-associated maladies to man however are associated with ingestion of nonairborne species (e.g. mottling of teeth enamel) is facilitated when forage vegetation is contaminated by airborne compounds and is eaten by livestock. A number of specific conditions can result including abnormalities in teeth, osseous lesions, lameness and appetite impairment (which may decrease weight gain and/or diminish milk yield). Evidence suggests that dairy cattle are the most sensitive domestic animals to fluoride ingestion; feeder cattle have been shown to be more tolerant of higher levels of Fluorides.

C. Effects On Materials

Evidence of harmful effects on such materials as metals, textiles, wood, and plastics is not presented in the literature; of importance to man though are the effects of fluorine on tooth enamel (both harmful and beneficial).

D. Effects On Vegetation

Like heavy metals, fluorides persist in vegetable tissue and accumulate with both acute and chronic exposure. Most damage to plants is caused by HF although SiF_4 has also been identified as a damaging agent.

Fluorides penetrate the plant leaf through stomata and dissolve in the aqueous solution which bathes the leaf tissue. In solution, they travel with the transpiration stream and accumulate at the leaf periphery (especially at lower ambient concentrations of Fluoride). Damage to tissue takes several forms. At higher atmospheric concentrations, absorbed Fluoride causes acid-type burns in sensitive tissue allowing cell contents to spill into intercellular spaces and the infected leaf usually turns brown. Acute injury to plants extends the necrotic injury from the tips to the bases of leaves; a dark colored band usually separates the living from dead tissue and with repeated exposures to acute contamination a series of bands can result.

Certain pines are susceptible to necrotic damage to needles (primarily needles less than 1 year old); evidence of injury is indicated by a reddish-brown color.

Acute non-lethal doeses of Fluorides (i.e. intoxication) on many dicotyledons causes the collapse of the spongy mesophyll and lower epidermis followed by damage to the chloroplasts of the pallisade cells; evidence of injury consists of leaf browning (more prevealent in hot, dry weather).

Of interest in monitoring atmospheric fluorides is that necrotic damage to plants is abrupt and the transition from healthy tissue to lesions is rapid.

Fluorides may also inhibit enzymes (such as enolase) by forming a complex block on an active catalytic site. In certain cases metabolic adjustments by plants to meet such conditions result in the plant's increased susceptibility to nutrient stress.

In evaluating impacts of air pollutants on vegetation (as well as man and other animals) synergistic effects between the various pollutants assume special significance. For example, some plants are tolerant of high levels of SO_x and Fluorides; some are sensitive to one pollutant, but tolerant of others. In atmospheres contaminated by a variety of chemical compounds the plant's ability to maintain and evolve a viable, resistent gene pool is a key limiting factor in its adaptation to the stress.

XIV. FLUORIDES--POTENTIAL IMPACTS ON THE STUDY AREA

The concentration of many phosphate, portland cement, and coal-fired electrical generation facilities in the study area points out the importance of particulate and gaseous fluoride generation; the amount actually emitted to the atmosphere is questionable although the sheer magnitude of production poses a strong potential for contamination.

Combustion of solid waste, especially when fluoride compounds are involved (e.g. pesticides, certain metals, certain fibers), will produce gaseous and particulate Fluorides compounds by the use of scrubbers and/or cyclones. Damage to vegetation in the area of impact induced by fluorides will be difficult to assess due to forementioned synergistic effects and the specific responses by affected vegetation.

As no dairy farms are within close proximity of the emission site, untoward impacts on such operations are not anticipated.

Potable water supplies for local residents come mainly from north of the study area and well out of the zones of fluorupatite phosphate rocks. However, some surface waters entering Hillsborough Bay do have their headwaters in that region (e.g. Alafia River) concentrations of flouride in the water are presumably elevated. Adverse impacts on humans and other animals from such ambient levels in adjacent surface waters are not reported.

VISIBILITY AND CLASS I AREA ANALYSIS

The Clean Air Act Ammendments of 1977 require evaluation of new and existing emissions sources to determine potential impacts on visibility in Class I areas. These source evaluations are to be used as part of a regulatory program to prevent future and remedy existing impairment of visibility in mandatory Class I Federal areas that results from man-made air pollution.

The visibility analysis is taken from EPA "Workbook for Estimating Visibility Impairment" November, 1980 which provides the general guidance for determining the potential impacts of an emissions source on Class I visibility.

There are two separate classes of visibility impairment: atmospheric discoloration and visual range reduction (increased haze) see Figure 7-1. EPA has defined "visibility impairment" to mean any humanly perceptible change in visibility (visual range, contrast, coloration) from that which would have existed under natural conditions. An important part of a visibility analysis is to determine the frequency of occurence and magnitude of visual impact in or within view of a Class I area. Figure 7-2 shows a schematic of visibility screening analysis procedure. A Level I analysis was performed (Appendix H) which the input data included NO_2, SO_2 and the particulate emissions for the McKay Bay Project. Regional visual range and distance to the nearest Class I area was used. This area was identified as the Chassahowitzka National Wildlife Refuge located northwest of Brooksville, Florida. A plume contrast rating load was established with reference to the sky, the terrain and the primary and secondary aerosol. EPA has established a rating factor for the Plume Contrasts which provides guidance for determination of further analysis. The absolute values of each plume contrast rating was calculated to be 0.001 which is less than the EPA factor of 0.10. Therefore, further analysis of potential visibility impacts are unnecessary as it is considered highly unlikely that the Project would cause adverse visibility impairment in Class I areas.

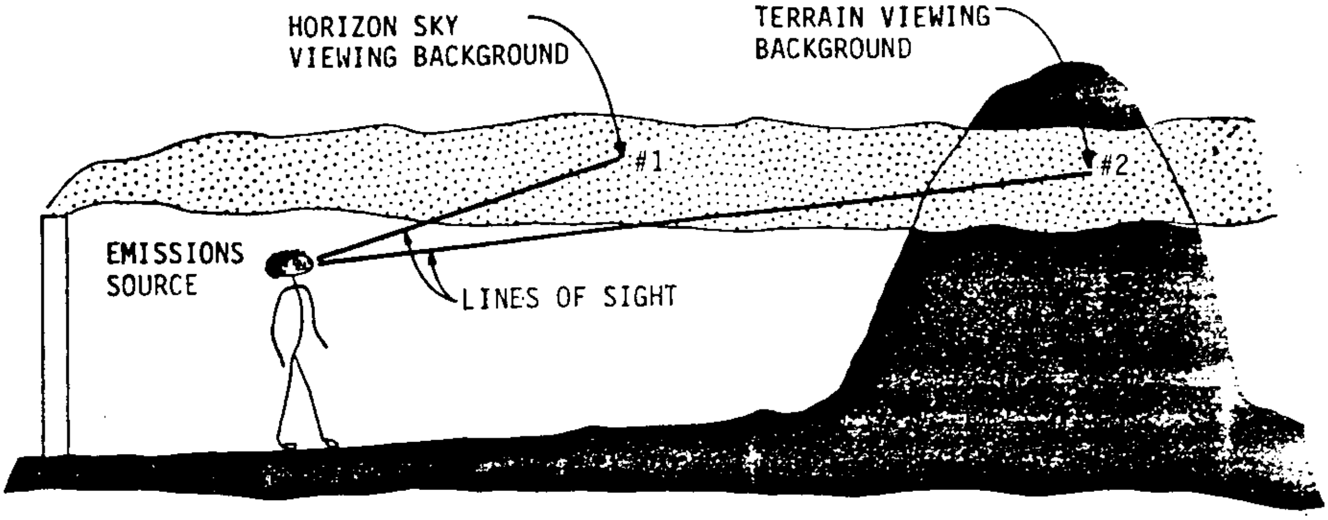
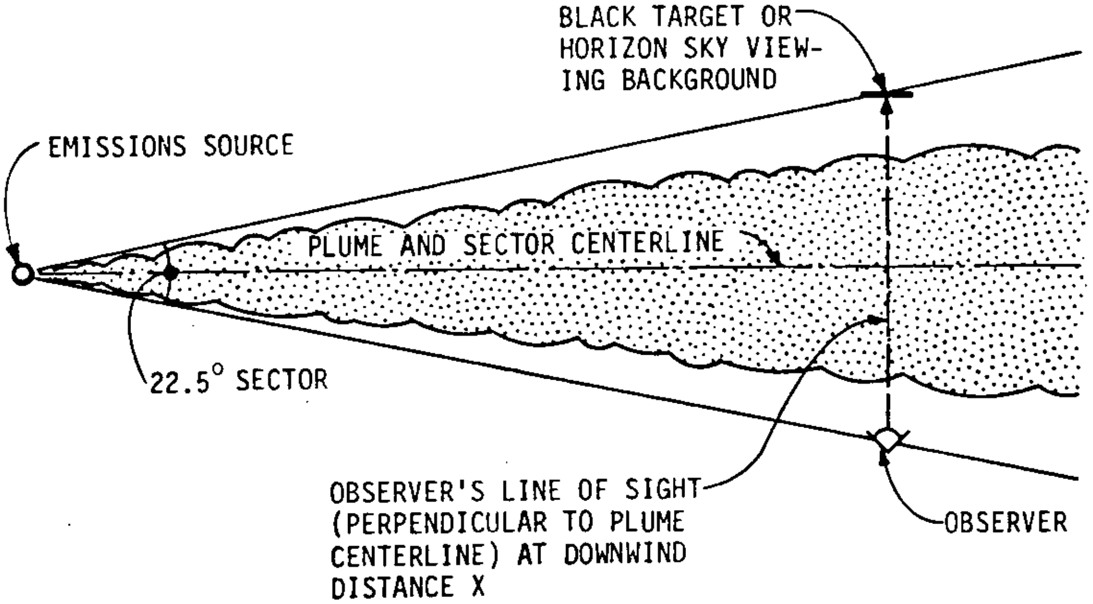


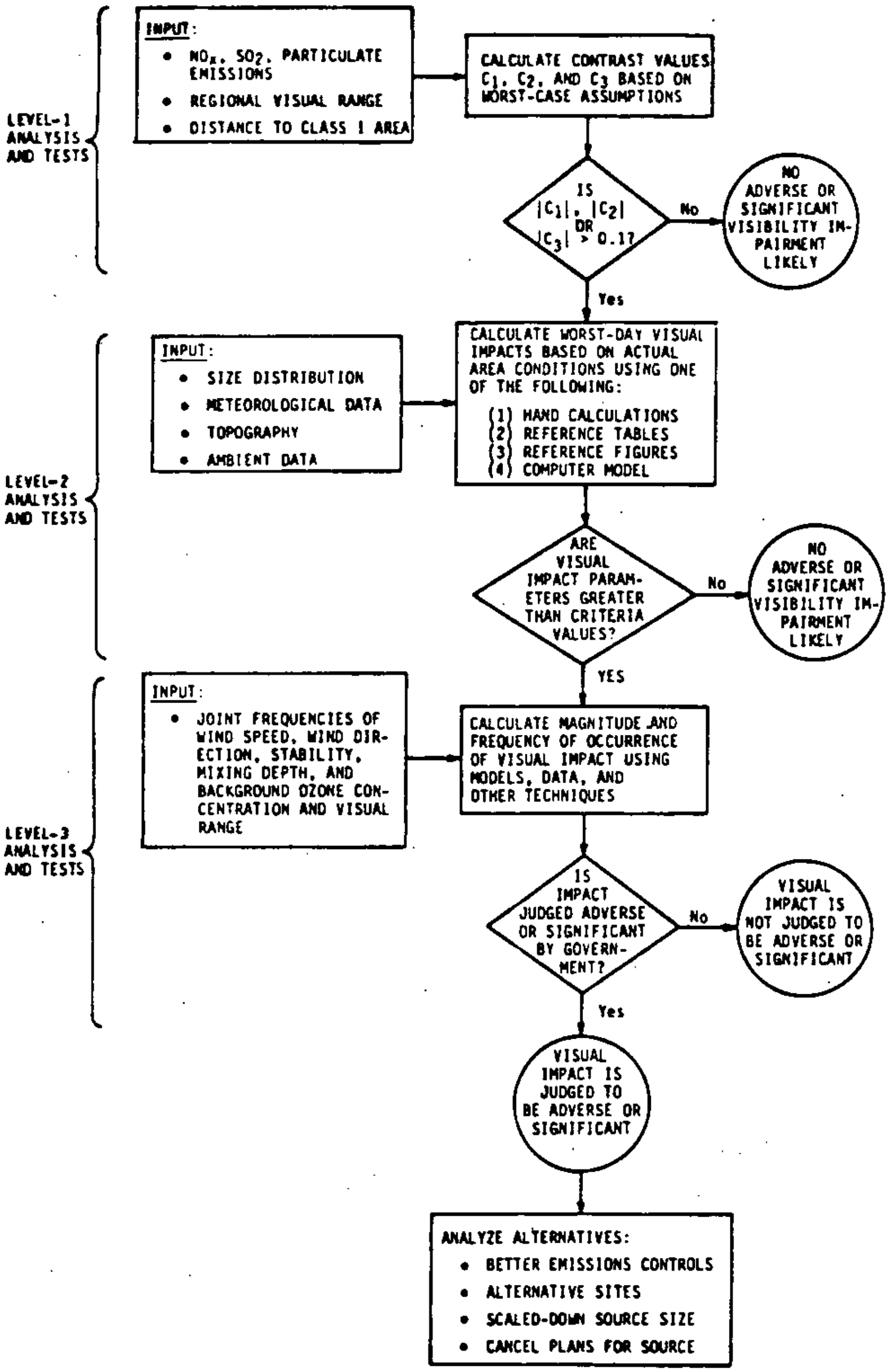
Figure 10. Two types of plume visibility impairment considered in the level-1 visibility screening analysis.



Geometry of plume, observer, and line of sight used in level-1 visibility screening analysis.

SOURCE: EPA Workbook For Estimating Visibility Impairment

FIGURE 7 - 1



Schematic of visibility screening analysis procedure. The numerical meaning of the terms "significant" and "adverse" differ on a case-by-case basis and will be defined after an in-depth policy analysis of each case.

SOURCE: EPA Workbook For Estimating Visibility Impairment

FIGURE 7-2

Other Factors

Fugitive Dust

The most significant air emission anticipated during construction is fugitive dust generated by numerous vehicles from the transportation of the workforce. Additionally anywhere from 5-12 pieces of construction equipment will be used in excavating, scrapping, filling and compacting. Fugitive dust can be reduced by the frequent spraying of water on the site and roadway. For the operational phase fugitive dust emissions are caused primarily by the frequent delivery of solid waste to the facility. With proper surface treatment these emissions are minimized.

Noise

Noise generation is another characteristic of construction activity. This potential nuisance will be generally limited to normal working hours thus allowing a reduction of noise during the evening hours. The primary source of noise during the operational phase is the movement of the solid waste delivery vehicles. Again the times available will be restricted allowing a break in the noise level thus reducing the nuisance potential.

Dust

Dust and odors in the refuse handling area will be trapped by enclosure of the tipping area. This area will also be placed under negative pressure with the air then being used as the combustion air. The high temperatures then remove any potential for emission of odor.

Explosions And/Or Fires

Explosions or fires within the pit areas are minimized by training the crane operators who manage the pit area. Any smoldering material will be loaded immediately into a combustion unit thus resolving the problem. Also, firehoses and sprinklers will be available. If explosive material were accidently fed into a combustion unit, any resulting explosion would be dissipated within the large volume of the boiler.

Vermin And Rodent Control

Vermin and rodent control is accomplished by the enclosure of the pit area. The refuse is managed within the pit by the crane operator who minimizes any concentrations of food supplies. The refuse in the pit will be stored no more than three days before being combusted. This will eliminate vermin and rodent survivability.

Dioxins

One emission of potential concern is the pollutant "dioxin". Dr. E. Joseph Duckett, Director of Research, Schwartz & Connolly, Inc. prepared an article on dioxins. Excerpts from this article are quoted as follows:

> "The recently reported detection of one type of organic pollutant, "dioxins," in the stack emissions of the Hempstead, N.Y., resource recovery facility has aroused a considerable amount of controversy, confusion and understandable concern within the resource recovery community. There are major gaps in our fundamental understanding of the sources and effects of dioxins. The existence of these gaps tends to create an atmosphere of confusion around the topic of dioxin emissions from refuse combustion facilities. One element of confusion results from the use of the term "dioxin". Dioxin is not a single chemical compound, rather dioxins are a family of organic compounds. From an environmental health point of view, the types of dioxins attracting the most interest are the polychlorinated dibenzo-p-dioxins, especially the tetra-chlorinated dibenzo-p-dioxins (TCDD's). There are 22 isomers (i.e., different formulations) of TCDD's and among these the most studied is the so-called "2, 3, 7, 8" isomer. Not all 22 TCDD isomers have been tested fo toxicity, but among those tested, the 2, 3, 7, 8 TCDD isomer is the most toxic and is

reportedly 3 to 100 times more toxic than other TCDD isomers.

Related to the confusion over the term "dioxins" is the fact that when it is reported that dioxins are emitted from a combustion facility, this does not necessarily indicate the presence of specific groups of dioxins such as the TCDD's nor specific compounds such as the 2, 3, 7, 8 TCDD isomer. At Hempstead, it was reported that TCDD's were present in stack emissions but the presence of the 2, 3, 7, 8 TCDD isomer has not been confirmed. The Hempstead experience was not the first report of TCDD's in stack emission from waste-fired furnaces. There have been European and Japanese reports of TCDD (as well as other types of dioxins) detection in fly ash from municipal and industrial incineratos. There is also at least one U. S. study (conducted by the Dow Chemcial Co.) in which TCDD's were reportedly found in particulate samples from the Nashville waste-to-energy facility. With the exception of the Dow results, all of the incinerator studies to date (including he Hempstead sampling results) have eported detection of TCDD's as a class but none have confirmed the presence of the specific 2, 3, 7, 8 TCDD isomer. The Dow study reported that the 2, 3, 7, 8 isomer was present in a concentation of 400 parts per trillion in one sample (i.e., the only sample analyzed) of fly ash from the Nashville facility.

Still another element of confusion is that the relative importance of waste-fired furnaces vs. other types of activities as sources of TCDD emissions is completely unknown.

Even if the concentrations of TCDD's and of the 2, 3, 7, 8 TCDD isomer in stack emissions were known precisely, there would still be uncertainty about what human exposures could result from emission concentrations.

> Despite the fact that the 2, 3, 7, 8 TCDD isomer is acknowledged to be a toxic compound, there are not health effects standards against which to judge the significance of any ambient concentration or human exposure."

Solid waste report, May 20, 1981. A Bi-weekly Business newsletter states that an American Society of Mechanical Engineers (ASME) Report finds minimal risk of cancer from refuse incinerator dioxin emissions. The newsletter article is quoted as follows:

> "The risk of cancer posed by the potential of dioxin emissions from refuse-to-energy incinerator" is several orders of magnitude less than the risk of death to which the general public is exposed" both voluntarily and involuntarily in everyday life, a study issued by the American Society of Mechanical Engineers concludes. Released late last month, report emphasizes that furthe study is needed "to better define the problem and to determine the potential cost-effective methods of further reducing possible risks to the practicable minimum."

Waste-to-energy plants should continue to operate, report says, while plans to control potential dioxin emissions are developed further. Reasons given for continued operation include: 1) current level of risk represents a worst case scenario, and in practice the actual risk should be less; 2) overall health risks from other methods of solid waste disposal, such as landfilling, 'are probably at least as great as indicated. . . for potential discharges of dioxins from combustion of solid waste'; 3) benefits from utilization of the energy from combustion of solid waste in conserving conventional fuels resources are substantial; and 4) solid waste generated by the public 'must be disposed of with minimum overall risk to the public'."

On June 18, 1981 the following article appeared:

EPA DIOXIN POLICY COMING

What the Environmental Protection Agency has come to call the nonissue of dioxin - as it relates to resource recovery plants and other combustion processes - is likely to be laid to rest soon by a policy statement from headquarters, according to an EPA official.

"Within a month or two we'll issue a statement that, in essence, will say the whole thing was a joke," says the official. "It's not the problem we thought it was."

EPA's pursuit of the dioxin issue begin with the discovery of trace concentrations in Agent Orange, a defoliant used in the Vietnam war, and later, as a result of an explosion of a herbicide plant in Seveso, Italy, that contaminated surrounding areas with dioxin.

The agency's search led to the discovery of 3 to 9 parts per trillion of dioxin in the stack gas from a $120-million resource recovery plant in Hempstead, N.Y., which has been shut down since March, 1979 (ENR 2/19, p. 14).

Those concentrations - which extrapolate to roughly 1/10,000 parts per trillion in the air at ground level - and similar trace levels suspected at other refuse-burning plants, threw a cloud over the agency's efforts to promote resource recovery as an alternative to landfilling municipal wastes. EPA has been working to defuse the issue ever since.

A recent study by the American Society of Mechanical Engineer's research committee on industrial and municipal waste supports EPA's expected policy statement. The 180-page report concludes that risks to human health are minimal.

Concentrations of dioxin from refuse incinerators are so low, the report states, that there is an indicated risk of one additional cancer case per million persons per year. That compares with the voluntary risk of smoking 20 cigarettes per day, which results in 5,000 anticipated deaths per million, and the involuntary risk of influenza, which accounts for 20,000 deaths per million per year.

"The subject of dioxin is a product of our technological advances and measurement capabilities, but we don't really know what it means," says Charles O. Velzy, chairman of the research committee and president of Charles R. Velzy Associates, Armonk, N.Y. "We've got to get some basis for risk assessment in order to set priorities in this country," he says.

Reference: ENR/June 18, 1981, pages 53-55.

REFERENCES

REFERENCES

1. U. S. EPA, Air Quality Criteria For Nitrogen Oxides. EP4-9:84. (Formerly under U. S. DHEW), 1971.

2. U. S. DHEW, Air Quality Criteria For Particulate Matter. FS 2.93/3:49, 1969.

3. U. S. EPA, Air Quality Criteria for Sulfur Oxides. (Formerly Under U.S. DHEW), 1971.

4. Dordevic, S., and Stankouiz, M., "Air Pollution And Communal Saturnism in the Village of Malo Rundare". Higijena (Belgrade) 12:35-44, 1960.

5. Fry, L. M. and Menon, K. K., "Determination of the Tropospheric Residence Time of Lead-210". Science 137:994-5, September 21, 1962.

6. Berge, H., Phytotoxic Emissions. Berlin, Paul Parey, 1963.

7. Hammond, P. B. and Aronson, A. L., "Lead Poisoning in Cattle and Horses in the Vicinity of Smelter", Annals of the New York Academy of Sciences, 111, Art. 2:595-611, April 24, 1964.

8. Naegele, John. A., (Ed.) Air Pollution Damage To Vegetation, ACS, Washington, 1973.

9. Subcommittee on Airborne Particles, Airborne Particles, NRC, Baltimore, 1979.

10. A. R. Gregory, "Effects of Air Pollution on Edible Crops", UNC Dept. of Environmental Engineering Sciences, May, 1964.

11. Durocher, Norman L., Preliminary Air Survey of Beryllium and its compounds: A literature review, NAPCA pub., contract PH 22-68-25, October, 1969.

12. Hannon, J. W. G., W. C. Copper, J. E. Martin, Jr., G.W.H. Schepers, H. Tebrock, H. S. Van Ordstrand, R. A. Whitehead, and J. F. Zielinski. "Beryllium Disease". Disease Chest 48(5), 550-8, November, 1965.

13. J. J. Cohen and R. N. Kusian. "The significance of Beryllium surface contamination to health", U Calif (Livermore), May 28, 1964, (Rept. #UCRI-7903).

14. P. Stocks, "On the relations between atmospheric pollution in urban and rural localities and mortality from cancer, bronchitis, and pneumonia, with particular reference to 3:4 Benzopyrene, Beryllium, Molybdenum, Vanadium, and arsenic", Brit. J. Cancer, 14, 397-418, 1960.

15. C. J. Leadbeater, "Beryllium", J. Roy Aeron Soc. (London), 70(688): 781-787, August, 1966.

16. Goeij, J. J. and J. R. W. Houtman, "Mercury in the environment", Chem. Weekblad, 67(10):13-20, March 5, 1971.

REFERENCES (continued)

17. Oiva I. Joensuu, "Fossil fuels as a source of Hg pollution", Science 172(3987):1027-1028, July 4, 1971.

18. McCarthy, J. H., Jr., J. L. Meuschke, W. H. Ficklin, and R. E. Leaned, Mercury in the Environment, USGS Prof. paper 713, 1970.

19. Neville, Grant, "Mercury in Man", Environment, 13(4), 2-15, May, 1971.

20. Anonymous, "A review of the toxicity and metabolism of mercury and its compounds", Med. Serv. J. (Canada) 23(5):886-808, May, 1968.

21. Neville, G. A. "Toxicity of mercury vapor", Canada Chemical Education, 3(1):4-7, October, 1967.

22. Heck, Walter H., Robert H. Daines, and Ibrahim J. Hindawi, "Other phytotoxic pollutants", In: Recognition of Air Pollution Injury To Vegetation, Air Pollution Control Assoc., 1970.

23. Crocker, William, "Effect of certain lethal gases upon plants of animals", In: Growth of Plants, Reinhold Publishing, 1948.

24. Dieman, et al., "On the action of mercury on vegetable life", Anal. Chem. (French)22:122-127, Belov and Assoc., 1970.

25. Bush, Charles S., Flowers, Shrubs, and Trees For Florida Homes, Fla. DACS, 1972.

26. Boulware, Joe Wood, "The relationship of the soils to the geology of Hillsborough County, Florida", Masters thesis, University of Florida, December, 1963.

27. Leighty, Ralph G., Carlisle, Victor, W., Cruz, Orlando E., Walker, James E., Beem, Jean, Caldwell, R.E., et.al, "Soil Survey of Hillsborough County, Florida", 1958.

28. U. S. G. S., 7.5 minute topographic maps for Tampa, sulphur springs, and Gandy Bridge quadrangles, 1956, (revised, 1969).

30. Diaz-Seckinger and Assoc. and Hillsborough County, Fl., 1:2000 aerial photograph sheets #10 x #4, Flown March 27, 1979.

31. National Academy of Sciences, Fluorides, Washington, 1971.

32. Also Naegele, John A., Air Pollution Damage (one reference previously sent out).

33. Dr. E. Joseph Duckett, Director of Research, Schwartz & Connolly, Inc., "Dioxins".

34. Solid Waste Report, May 20, 1981, ASME Report on "Dioxins".

REFERENCES (continued)

35. Air Pollution Aspects of Resource Recovery, California Air Resources Board, March, 1980.

36. An Evaluation of Emission Factors For Waste-to-energy Systems; U. S. Environmental Protection Agency; EPA-600/7-80-135; July, 1980.

37. State Air Laws, Florida Rules, 17-2.17(7) & 17-2.17(3)c.

38. Hillsborough County City -- County Planning Commission Publication, "Population and Housing Estimates", April 1, 1970, April 1, 1980.

39. EPA, November, 1980, "Workbook for Estimating Visibility Impairment".

40. Century 21, McDill Reality Corp, Florida, Mrs. Stephanie Lowry, June 23, 1981.

APPENDIX A:

HCEPC AIR PERMIT INVENTORY SYSTEM
MASTER FILE LIST--EMISSION INVENTORY REPORT

1979

HCEPC AIR PERMIT INVENTORY SYSTEM

MASTER FILE LIST

PLANT #	PLANT NAME	PLANT #	PLANT NAME
0001	GLOBE UNION INC.	0075	AMAX CHEM. CO.
0002	CAST METALS CORP.	0076	DELTA ASP. PAVING CO
0003	ROYSTER COMPANY	0077	W.R. GRACE CONSTR.
0004	PEAK OIL CO.(1-3)	0078	W R GRACE & CO.
0005	C.F. INDUSTRIES	0079	AMCON CONCRETE
0006	JOS SCHLITZ BREWNG	0080	MARATHON OIL CO.
0007	TOWN 'N' COUNTRY HOS	0082	SULFUR TERMNL(1-2)
0008	GARDINIER INC.	0083	AMERICAN OIL
0009	TAMPA WATER PMP(1-2)	0084	BAY CONCRETE
0010	TAMPA WATER DEPT	0085	SOUTHSTATE TERMINAL
0011	CONE BROTHERS CONT.	0086	BAY CONCRETE
0012	CONE BROTHERS CONT.	0087	FLA. PRESTRESSED CO
0013	FLA. MINING (SKIPPER	0088	VA HOSPITAL
0014	EASTERN ASS. TERM. C	0089	ST JOSEPH'S HOSP
0015	DANT & RUSSELL INC.	0090	SOUTHEASTERN WIRE
0016	AMERICAN PETROFINA	0091	ASGROW FLORIDA CO
0017	DOBBS HOUSES INC.	0092	PAKTANK OF FLA INC.
0018	GEN PORTLAND(36-39)	0093	AMCON CONCRETE
0019	RALSTON PURINA CO.	0094	AGRICO CHEMICAL CO.
0020	FLORIDA STEEL CORP.	0095	ANHEUSER BUSCH (1-5)
0021	EXXON TAMPA OX. PLT.	0096	ASHLAND CHEM.(1-3)
0022	EXXON TAMPA ASSP. BA	0097	W R BONSAL CO.
0023	MRI CORP.	0098	WESTINGHOUSE(S/WEST)
0024	INTERNATIONAL MIN	0099	TEXASGULF INC.(2-3)
0025	KAISER AGRICHEM	0100	BRIMSTONE TERM(1-3)
0026	UTIL RESOURCE RECOV	0101	BREWSTER PHOS.
0027	MINERAL AGGREGATES	0102	AMAX (BIG 4)
0028	NATIONAL GYPSUM(4-7)	0103	CARGILL GRAIN RECV
0029	NITRAM INC.	0105	COMMERCIAL METALS
0030	SOUTHLAND FROZEN FDS	0106	CONCRETE PROD TAMPA
0031	IDEAL BASIC(08-11)	0108	DAVID J JOSEPH(1-4)
0032	TAMPA SAND & MATRL	0110	FLORIDA ROCK IND
0033	SEABOARD COASTLINE	0113	W.R. GRACE TERM.
0034	MAC ASPHALT	0114	GRECO CONCRETE CO.
0035	CITRUS PRODUCTS INC.	0115	HELENA CHEMICALS
0036	VERLITE COMPANY	0116	HONEYWELL INC.
0036	UNIV COMM HOSP	0117	HUCO INC.(1-2)
0037	CARGILL-NUTRENA FEED	0118	HARDAWAY CONSTRUCTOR
0038	TECO-HOOKERS POINT	0123	PHILLIPS PETRO(1-3)
0039	TECO-BIG BEND	0124	PLANT CITY READY MIX
0040	TECO-F J GANNON	0125	REYNOLDS AL CAN RECY
0041	TAMPA GENERAL HOSP	0128	RUBBER PRODUCTS
0042	GULF OIL	0130	SOUTHERN MILL CREEK
0043	TAMPA PATHOLOGICAL	0131	STAUFFER CHEMICAL CO
0044	ROBBINS MFG INC(1-4)	0134	TOWNEY'S LAUNDRY
0045	THATCHER GLASS MFG.	0135	USF MEDICAL CENTER
0046	WENCZEL TILE(01-05)	0136	VERLITE COMPANY
0047	FLORIDA ROCK IND.	0137	ANIMAL C.C. HILLS CO
0048	DETSCO TERM. INC.	0141	MACDILL AFB(3-6)
0049	TAMPA BLOCK PLANT	0150	S.I. LIME CO.(2-3)
0050	CHLORIDE METALS	0151	WOMEN'S HOSPITAL
0051	C.F. INDUSTRIES(4-5)	0152	TAMPA BAY CREMATORY
0053	CONCRETE PROD TAMPA	0155	SWIFT PROCESSED MEAT
0054	SCRAP-ALL INC.	0159	SO FLA BAPTIST HOSP
0056	GAF CORP.	0160	JOS SCHLITZ CONTNR
0057	GULF COAST LEAD CO.	0162	BRANDON CO. HOSP.
0059	PAKTANK OF FLA INC.	0163	TAMPA SOAP(01-02)
0061	TAMPA ARMATURE	0164	CAMDEN GRAIN CO.
0062	WESTINGHOUSE ADAMO	0165	ESTECH GENERAL CHEM
0063	THOMPSON-HAYWARD CO	0166	TREASURE ISLE
0064	DEL MONTE CORP.	0171	SPEEDLING
0065	JOYNER CONCRETE	0180	CAST CRETE CORP
0068	FLORIDA IRON & METAL	0182	CARNS CONCRETE PIPE
0069	SOUTHEASTERN GALV	0185	PLNT CTY RDY MX(2-3)
0070	WEYERHAEUSER CO.	0188	INTL MIN & CHEM
0072	REYNOLDS METALS	0195	INDEPN STEVEDORING
0073	SUPERIOR FERT & CHEM	0197	SHELL OIL COMPANY
0074	TAMPA STEVEDORING	0198	TRI-COUNTY PROF SERV
0052	Flo Rock Industries		

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PLANT ID	POINT ID	UTM COORDINATES HORIZ. KM	VERT. KM	STACK DATA HGT(FT)	DIAM(FT)	TEMP(F)	FLOW RATE (CU FT/MIN)	TOTAL HRS.	EST. METHOD PART.	SO2	NOX	HC	CO
0001	01	359.9	3102.6	022	01.0	0090	0001700	6000	1	3	3	3	3
0002	01	368.6	3094.6	027	02.8	0080	0025000	2600	3				
0003	01	358.0	3090.3	025	02.5	0500	0008300	8760	3	1	3	3	3
0005	01	388.3	3115.7	024	05.0	0562	0013000	8736	3	3	3	3	3
0005	02	388.3	3115.7	078	05.0	0092	0087000	8400	2	1			
0005	03	388.3	3115.7	078	05.0	0092	0087000	8400	2	1			
0005	04	388.3	3115.7	070	03.0	0129	0018800	8400	2				
0005	05	388.3	3115.7	137	06.0	0096	0066000	8400	2				
0005	06	388.3	3115.7	061	06.4	0100	0063300	8400	2				
0005	07	388.3	3115.7	198	08.0	0158	0098000	8400	1	1			
0005	08	388.3	3115.7	198	08.0	0158	0098000	8400	1	1			
0005	09	388.3	3115.7	119	04.0	0093	0040000	8400	1				
0005	10	388.0	3115.6	180	09.2	0132	0166250	8064	1	3	3	3	3
0005	11	388.0	3115.6	180	09.2	0132	0166250	8400	1	3	3	3	3
0005	12	388.0	3115.6	180	09.2	0100	0135000	7000	1	3	3	3	3
0005	13	388.3	3115.7	180	09.2	0100	0135000	7000	1	3	3	3	3
0005	14	388.3	3115.7	089	01.5	0120	0014000	7000	1				
0005	99	388.3	3115.7		.	0072		8736	4				
0006	01	362.0	3103.2	090	06.0	0311	0018800	7488	2	2	1	3	3
0008	04	362.9	3082.5	150	07.5	0153	0080040	7644	2	1			
0008	05	362.9	3082.5	150	08.0	0150	0082200	8008	2	1			
0008	06	362.9	3082.5	150	09.0	0164	0155600	8736	2	1			
0008	07	362.9	3082.9	126	08.0	0120	0123900	7280	1	3	3	3	3
0008	10	362.9	3082.5	095	02.0	0152	0018010	8736	1	3	3	3	3
0008	13	362.9	3082.5	071	01.6	0148	0008580	8008	1	3	3	3	3
0008	14	362.9	3082.5	110	04.0	0154	0030530	8372	1				
0008	19	362.9	3082.5	090	04.0	0144	0041000	7644	1	3	3	3	3
0008	20	362.9	3082.5	090	03.5	0142	0038130	7644	1	3	3	3	3
0008	21	362.9	3082.5	055	04.3	0124	0061450	8736	2				
0008	22	362.9	3082.5	090	03.5	0149	0037400	7644	1	3	3	3	3
0008	23	362.9	3082.5	090	03.5	0146	0042730	7644	1	3	3	3	3
0008	24	362.9	3082.5	055	04.3	0118	0063000	8736	2				
0008	25	362.9	3082.5	085	00.9	0102	0003200	8372	1				
0008	26	362.9	3082.5	096	01.0	0105	0002600	8372	1				
0008	27	362.9	3082.5	108	01.2	0128	0001460	8008	1				
0008	28	362.9	3082.5	082	01.2	0097	0000980	8008	1				
0008	29	362.9	3082.5	115	01.2	0118	0001540	8008	1				
0008	30	362.9	3082.5	096	01.2	0132	0001430	8008	1				
0008	31	362.9	3082.5	093	04.0	0124	0026010	8008	1	3	3	3	3
0008	32	362.9	3082.5	078	06.0	0158	0038070	5096	1	2	3	3	3
0008	33	362.9	3082.5	078	06.0	0160	0038250	3640	1	2	3	3	3
0008	34	362.9	3082.5	066	02.0	0145	0009200	8372	1	3	3	3	3
0008	35	362.9	3082.5	065	04.0	0078	0035800	3640	1				
0008	36	362.9	3082.5	068	03.5	0104	0019840	3640	1	3	3	3	3
0008	37	362.9	3082.5	066	04.0	0082	0040060	2912	1				
0008	38	362.9	3082.5	068	03.5	0100	0023160	2912	1	3	3	3	3
0008	39	362.9	3082.5		.								
0008	40	362.9	3082.5	074	04.0	0084	0022230	3640	1				
0008	41	362.9	3082.5	036	01.5	0100	0003000	8008	2	3	3	3	3
0008	42	362.9	3082.5	060	08.3	0600	0073800	8008	3	3	3	3	3
0008	43	362.9	3082.5	020	04.5	0425	0042320	0100	3	3	3	3	3
0008	44	362.9	3082.5	080	03.0	0135	0019100	1040	1				
0008	51	362.9	3082.5	030	03.5	0030	0025200	1560	2				
0008	52	362.9	3082.5	040	01.5	0072	0003860	1560	2				
0008	53	362.9	3082.5	050	02.5	0065	0013000	1560	2				
0008	99	362.9	3082.5		.	0072		8736	2				
0009	01	360.0	3092.2	125	05.0	0250	0001500	8736	3	3	3	3	3
0011	01	357.8	3107.2	002	04.0	0130	0032400	2080	1	2			
0012	01	362.0	3096.4	035	09.0	0121	0106131	2080	1	2			
0014	01	360.2	3089.0		.	0072		2184	2				

PLANT	POINT	UTM COORDINATES			STACK DATA		FLOW RATE	TOTAL	EST. METHOD				
ID	ID	HORIZ. KM	VERT. KM	HGT(FT)	DIAM(FT)	TEMP(F)	(CU FT/MIN)	HRS.	PART.	SO2	NOX	HC	CO
0014	02	360.2	3089.0		.	0072		3760	2				
0014	03	360.2	3089.0		.	0072		1930	2				

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PLANT	POINT	UTM COORDINATES		STACK DATA			FLOW RATE	TOTAL	EST. METHOD				
ID	ID	HORIZ. KM	VERT. KM	HGT(FT)	DIAM(FT)	TEMP(F)	(CU FT/MIN)	HRS.	PART.	SO2	NOX	HC	CO
0018	04	358.0	3090.7	118	09.0	0450	0225600	1344	2	1	3	3	3
0018	05	358.0	3090.7	118	09.0	0450	0225600	7488	2	1	3	3	3
0018	06	358.0	3090.6	145	15.5	0395	0229257	7200	2	1	3	3	3
0018	09	358.0	3090.6	095	04.0	0220	0065000	1344	1				
0018	10	358.0	3090.6	095	04.0	0185	0040654	7488	1				
0018	11	358.0	3090.6	101	12.5	0316	0186323	7200	1				
0018	12	358.0	3090.7	064	03.0	0160	0022556	7140	2				
0018	13	358.0	3090.7	073	02.5	0150	0005500	8400	2				
0018	14	358.0	3090.7	099	05.0	0150	0011000	8400	2				
0018	99	358.0	3090.6		.	0072		8736	2				
0019	01	360.3	3093.2	050	02.0	0067	0003265	4160	2				
0019	02	360.3	3093.2	025	01.9	0086	0001833	4680	2				
0019	03	360.3	3093.2	095	02.7	0092	0018050	4160	2				
0020	01	364.6	3094.2	074	07.3	1100	0063300	8736	3	3	3	3	3
0020	03	334.6	3092.4	040	09.1	0125	0110757	8372	2				2
0020	04	364.6	3092.4	040	09.9	0152	0169570	8372	2				2
0020	96	364.6	3094.2		.	0072		8736	4				
0020	99	364.6	3094.2		.	0072		8736	2				
0021	01	362.2	3087.2		.	0085		8736		2			
0022	01	362.2	3087.2	065	01.5	0750	0002496	8736	3	3	3	3	3
0023	01	366.7	3093.3	031	01.0	0330	0001500	0440	3	3	3	3	3
0024	01	360.1	3087.5	043	08.0	0160	0116000	6552	1	3	3	3	3
0024	02	360.1	3087.5	068	06.0	0064	0096600	3276	1				
0024	03	360.1	3087.5	047	01.5	0091	0011000	4732	1				
0024	99	360.1	3087.5		.	0075		8736	2				
0025	01	367.3	3092.6	030	01.5	0350	0006600	4732	3	3	1	3	3
0025	02	367.3	3092.6	024	00.8	0120	0000200	8400	2				
0025	03	367.3	3092.6	019	01.0	0213	0001280	8400	1				
0027	01	362.2	3074.8	030	06.1	0190	0020000	2340	1	3	3	3	3
0027	99	362.7	3074.8		.	0072		2600	2				
0028	03	347.4	3082.5	055	01.0	0150	0003200	6916	2				
0028	04	347.4	3082.5	064	03.5	0169	0019400	2496	2	3	3	3	3
0028	05	347.4	3082.5	032	00.6	0072	0001100	1248	2				
0028	06	347.4	3082.5	032	01.2	0085	0005100	2496	2				
0028	07	347.4	3082.5	041	01.3	0072	0003400	1248	2				
0028	08	347.4	3082.5	063	00.6	0125	0000800	7280	2				
0028	09	347.4	3082.5	062	00.6	0125	0000800	7280	2				
0028	10	347.4	3082.5	070	00.6	0150	0000802	7280	2				
0028	11	347.4	3082.5	065	00.6	0150	0001200	0156	2				
0028	12	347.4	3082.5	066	00.6	0200	0001200	7644	2				
0028	13	347.4	3082.5	063	01.1	0110	0003500	3536	2				
0028	14	347.4	3082.5	077	01.4	0110	0004300	6916	2				
0028	15	347.4	3082.5	077	01.7	0150	0006080	0156	2				
0028	16	347.4	3082.5	025	00.6	0100	0001200		7	7	7	7	7
0028	17	347.4	3082.5	046	01.2	0072	0002300	8736	2				
0028	21	347.4	3082.5	042	01.1	0350	0004100	6916	2	2	2	3	3
0028	22	347.4	3082.5	042	01.1	0350	0004100	6900	2	2	3	3	3
0028	23	347.4	3082.5	042	01.1	0350	0004100	6900	2	2	3	3	3
0028	24	347.4	3082.5	042	01.1	0350	0004100	6900	2	2	3	3	3
0029	01	363.1	3089.0	200	22.6	0094	0150000	5904	1				
0029	02	363.1	3089.0	066	03.0	0300	0026500	8736			1		
0029	03	363.1	3089.0	090	04.5	0450	0033700	2000	3	3	3	3	3
0029	04	363.1	3089.0	090	04.6	0450	0033700	4641	3	3	3	3	3
0029	05	363.1	3089.0	065	03.3	0270	0033000	8736			1		
0029	06	363.1	3089.0	200	22.6	0094	0150000	8736	1				
0030	01	389.8	3098.9	030	02.0	0450	0003000	4230	3	3	3	3	3
0031	01	359.5	3087.3	145	01.2	0072	0004800	3120	2				
0031	02	359.5	3087.3	148	01.2	0072	0003200	3120	2				
0031	03	359.5	3087.3	066	01.4	0072	0006900	3120	2				
0031	04	359.5	3087.3	066	01.5	0072	0007400	3120	2				

PLANT ID	POINT ID	UTM COORDINATES HORIZ. KM	UTM COORDINATES VERT. KM	STACK DATA HGT(FT)	STACK DATA DIAM(FT)	TEMP(F)	FLOW RATE (CU FT/MIN)	TOTAL HRS.	EST. METHOD PART.	SO2	NOX	HC	CO
0031	05	359.5	3087.3	149	01.2	0072	0002400	3120	2				
0031	06	359.5	3087.3	149	01.2	0072	0002400	3120	2				
0031	07	359.5	3087.3	056	01.2	0072	0006400	3120	2				
0032	01	360.1	3092.1		.	0073		2600	2				
0033	01	361.0	3089.0		.	0072		3744	2				
0033	02	361.0	3089.0		.	0072		3120	2				
0033	99	361.0	3089.0		.	0072		3744	2				
0035	01	389.6	3099.7	020	02.2	0450	0000600	1120	3	3	3	3	3
0036	01	360.0	3105.7	020	00.8	1200	0001000	4368	3				
0036	02	360.0	3105.7	177	01.3	0300	0002000	8736	3	3	3	3	3
0037	01	360.8	3095.8		.	0072		0936	2				
0037	02	360.8	3095.8		.	0072		0936	2				
0037	03	360.8	3095.8		.	0072		0936	2				
0037	04	360.8	3095.8		.	0072		2496	2				
0037	05	360.8	3095.8		.	0072		3744	2				
0037	06	360.8	3095.8		.	0072		1248	2				
0037	07	360.8	3095.8		.	0072		1248	2				
0037	08	360.8	3095.8		.	0072		3120	3	3	3	3	3
0038	01	358.0	3091.0	280	11.3	0265	0356400	2280	2	2	3	3	3
0038	02	358.0	3091.0	280	11.3	0265	0356400	1912	2	2	3	3	3
0038	03	358.0	3091.0	280	12.0	0255	0255000	3484	2	2	3	3	3
0038	04	358.0	3091.0	280	12.0	0255	0255000	2739	2	2	3	3	3
0038	05	358.0	3091.0	280	11.3	0265	0356400	8135	2	2	3	3	3
0038	06	358.0	3091.0	280	09.4	0325	0245000	5358	2	2	3	3	3
0039	01	361.4	3075.7	490	24.0	0269	2561851	5923	2	2	3	3	3
0039	02	361.4	3075.7	490	24.0	0269	2561851	5831	2	2	3	3	3
0039	03	361.4	3075.7	490	24.0	0279	1359100	6310	2	2	3	3	3
0039	04	361.4	3075.7	035	95.7	1010	0527700	0399	3	3	3	3	3
0039	05	361.4	3075.7	075	16.6	0928	1503000	0360	3	3	3	3	3

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PLANT	POINT	UTM COORDINATES		STACK DATA			FLOW RATE	TOTAL	EST. METHOD				
ID	ID	HORIZ. KM	VERT. KM	HGT(FT)	DIAM(FT)	TEMP(F)	(CU FT/MIN)	HRS.	PART.	SO2	NOX	HC	CO
0040	01	360.0	3087.5	306	10.0	0309	0372000	5278	2	2	3	3	3
0040	02	360.0	3087.5	306	10.0	0309	0372000	6420	2	2	3	3	3
0040	03	360.0	3087.5	306	10.6	0266	0521000	5448	2	2	3	3	3
0040	04	360.0	3087.5	306	09.6	0286	0529000	5369	2	2	3	3	3
0040	05	360.0	3087.5	306	14.6	0288	0681000	5886	2	2	3	3	3
0040	06	360.0	3087.5	306	17.6	0292	1120000	6554	2	2	3	3	3
0040	07	360.0	3087.5	035	??.?	1010	0105000	0178					
0041	01	356.4	3091.1	151	04.5	0400	0001254	1560	3				
0041	02	356.4	3091.1	151	04.5	0400	0001260	8736	2	3	3	3	3
0042	01	360.2	3092.2	090	07.0	0160	0075000	8736	1	3	3	3	3
0042	02	360.2	3092.2	090	07.0	0160	0075000	8736	1	3	3	3	3
0042	03	360.2	3092.2	090	07.0	0160	0075000	8736	1	3	3	3	3
0042	04	360.2	3092.2	090	02.0	0600	0004400	5096	2				
0044	01	357.6	3105.4	041	03.0	0072	0000600	2000	2				
0044	02	357.6	3105.4	024	02.4	0072	0000500	2080	2				
0044	03	357.6	3105.4	028	01.8	0072	0000500	2000	2				
0044	99	357.6	3105.4	028	01.8	0072	0000500	2080	4				
0045	01	360.2	3102.2	140	05.0	0423	0076180	8400	1	1	1	3	3
0045	02	360.4	3102.2	140	05.0	0424	0080048	8400	1	1	1	3	3
0046	01	349.7	3084.5	035	02.2	0072	0002000	3500	2				
0048	01	358.0	3092.9	030	.	0072		8736	2				
0049	01	348.9	3100.9	012	01.5	0400	0001500	2500	2	3	3	3	3
0050	01	361.8	3088.3	098	02.0	0250	0014000	6000	1	1	3	3	3
0050	02	361.8	3088.3	040	01.5	0125	0006000	6000	2				
0050	03	361.8	3088.3	025	01.5	0072	0006000		7	7	7	7	7
0050	04	361.8	3088.3	098	02.0	0250	0014000	6000	1	1	3	3	3
0050	05	361.8	3088.3	040	01.5	0125	0006000	6000	2				
0050	06	361.8	3088.3	040	01.5	0125	0006000	6000	2				
0051	01	359.2	3089.6		.	0072		1248	2				
0053	01	.	.		.								
0054	01	359.4	3097.1	032	01.5	1600	0005200	2500	2				
0056	01	362.4	3087.0	080	01.8	0175	0010800	6000	1				
0056	02	362.4	3087.0	030	01.8	0072	0008000	6000	2				
0057	01	363.9	3093.8	097	02.0	0192	0019000	6000	1	1			
0059	01	360.8	3087.3		.	0072		0600	2				
0061	01	365.6	3091.7	031	02.0	1400	0002700	2104	2				
0064	01	359.6	3093.5	039	04.6	0430	0032000	3360	3	3	3	3	3
0065	01	349.8	3098.1		.	0072		2600	2				
0068	01	360.4	3093.8	033	02.0	1400	0006200	0624	3	3	3	3	3
0069	01	368.5	3094.5	016	09.5	0120	0035000	4160	2	2	2	2	2
0070	01	362.8	3098.3	025	02.0	0375	0003500	4160	2	3	3	3	3
0072	01	362.7	3097.5	040	01.3	0240	0001700	8736				2	
0073	01	361.7	3093.3	020	00.8	0096	0001060	1280	1				
0075	01	393.8	3096.3	100	15.9	0144	0023700	5460	1	3	3	3	3
0075	02	393.8	3096.3	080	23.8	0118	0029200	4004	1	3	3	3	3
0075	03	393.8	3096.3	152	26.3	0098		7280	1	3	3	3	3
0075	04	393.8	3096.3	152	26.3	0098	0065000	6916	1	3	3	3	3
0075	05	393.8	3096.3	200	26.3	0096	0112500	7644	1	3	3	3	3
0075	19	393.8	3096.3	060	02.3	0500	0003000	3000	3	3	3	3	3
0075	20	393.8	3096.3	025	01.5	0150	0000900	2600	3	3	3	3	3
0075	98	393.8	3096.3		.	0085		8736	2				
0076	01	372.4	3105.3	033	10.5	0123	0078000	2500	1	3	3	3	3
0077	01	360.3	3093.0	050	02.0	0230	0006000	4160	1				
0078	01	360.2	3093.0		.	0072		2080	4				
0079	01	362.8	3098.4		.	0072		2600	2				
0082	01	358.0	3089.2	030	01.8	0605	0003900	8736	3	3	3	3	3
0082	02	358.0	3089.2	030	01.8	0605	0003900	8736	3	3	3	3	3
0084	01	.	.		.								
0085	01	358.0	3089.0		.	0072		8736				2	
0086	01	365.0	3093.1		.	0072		2600	2				

PLANT	POINT	UTM COORDINATES		STACK DATA			FLOW RATE	TOTAL	EST. METHOD				
ID	ID	HORIZ. KM	VERT. KM	HGT(FT)	DIAM(FT)	TEMP(F)	(CU FT/MIN)	HRS.	PART.	SO2	NOX	HC	CO
0087	01	363.6	3098.3	015	01.5	0400	0001500	2080	2				
0089	01	.	.		.								
0090	01	368.5	3094.5		.	0072		2080	2	2	2	2	2
0091	01	.	.		.								
0092	01	357.8	3089.0		.	0072		0120	2				
0093	03	.	.		.								
0094	01	361.0	3076.2		.	0072		2080	2				
0094	02	361.0	3076.2	025	01.7	0087	0002750	4992	2				
0094	03	361.0	3076.2	025	01.7	0087	0002750	4992	2				
0094	04	361.0	3076.2	030	02.2	0087	0020000	4992	2				
0095	01	360.0	3101.8	057	04.0	0450	0006000	8736	3	3	3	3	3
0095	02	360.0	3101.8	057	04.0	0450	0006000	8736	3	3	3	3	3
0097	01	363.6	3098.1	055	26.8	0139	0009200	2080	2				
0097	02	363.6	3098.1	055	26.8	0127	0002065	2080	2				
0098	01	.	.		.								

YEAR 1979

HILLSBOROUGH COUNTY ENVIRONMENTAL PROTECTION COMMISSION
EMISSIONS INVENTORY REPORT

PLANT	POINT	UTM COORDINATES		STACK DATA			FLOW RATE	TOTAL	EST. METHOD				
ID	ID	HORIZ. KM	VERT. KM	HGT(FT)	DIAM(FT)	TEMP(F)	(CU_FT/MIN)	HRS.	PART.	SO2	NOX	HC	CO
0101	01	389.5	3067.9	125	08.0	0157	0168200	6552	1	1	3	3	3
0101	02	389.5	3067.9	125	08.0	0162	0190800	6188	1	1	3	3	3
0101	03	389.5	3067.9	130	02.8	0101	0016540	5460	1				
0101	04	389.5	3067.9	075	02.8	0125	0021890	6552	1				
0102	01	394.7	3069.6	100	06.0	0149	0045300	4732	1	3	3	3	3
0102	02	394.7	3069.6	023	02.2	0080	0008000	5824	2				
0102	03	394.7	3069.6		.			1560	2				
0103	01	358.2	3092.1	035	01.8	0072	0020000	6240	2				
0103	02	358.2	3092.1	080	02.0	0072	0009000	6240	2				
0105	01	363.7	3093.4	035	03.1	1500	0012100	1560	2				
0107	01	356.5	3107.5	023	00.9	0600	0000150	0312	2				
0108	02	364.2	3092.9	015	04.5	0085	0039000	2080	1				
0108	03	364.2	3092.9	020	04.5	0090	0048526	2080	1				
0108	04	364.2	3092.9	040	03.5	0077	0058900	2080	1				
0114	01	363.6	3098.0		.	0072		0780	2				
0116	01	352.2	3100.7	036	00.9	0085	0000600	7200	3	3	3	3	3
0117	01	362.2	3086.8	055	01.3	0450	0002000	2080	3	3	3	3	3
0117	02	362.2	3086.8	050	04.0	0110	0007500	2080	2				
0118	01	348.2	3082.7		.	0072		0300	2				
0123	01	358.2	3150.0		.	0072		8736				2	
0124	01	392.2	3100.0	013	01.3	0400	0000300	2250	2	3	3	3	3
0130	01	362.8	3097.7		.	0072		2000	2				
0131	01	365.3	3093.6	025	01.0	0071	0002000	0480	4				
0135	01	359.9	3104.8	070	09.1	1200	0001000	2184	4				
0136	01	363.0	3098.1	050	01.0	0200	0003000	8736	1	3	3	3	3
0136	99	363.0	3098.1		.	0072		8400	2				
0137	01	364.9	3093.5	030	01.8	1200	0001500	1250	2				
0141	01	349.4	3081.6	017	01.5	1000	0001000	0450	2				
0141	02	342.5	3081.6	037	01.8	0150	0001500	8736	3	3	3	3	3
0141	03	342.5	3081.6	033	01.5	1000	0001000	1040	2				
0150	01	362.9	3084.6		.	0072		2080	2				
0151	01	353.3	3095.7	027	01.0	1450	0003500	0364	4				
0152	01	372.8	3090.6	018	01.3	0700		2496	4				
0155	01	351.4	3086.5	042	02.0	0450	0003000	8736	3	3	3	3	3
0160	01	362.0	3103.2	040	05.0	0734	0040000	8736	3	3	3	1	3
0162	01	364.2	3092.9	029	01.6	1200	0002000	0624	2				
0163	01	364.0	3096.4	050	02.8	0450	0008200	3120	3	3	3	3	3
0164	01	360.2	3102.4	060	03.8	0185	0023000	1600	2				
0166	01	378.0	3096.6	034	06.7	2350	0002220	2080	3	3	3	3	3

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PLANT  POINT                   EMSISSIONS EST. (TONS/YEAR)            TOTAL          ALLOW. EMISSIONS (TONS/YEAR)
 ID     ID        PART.  F DUST   SO2       NOX      HC      CO       EMS.     PART.     SO2      NOX       HC      CO
-----------------------------------------------------------------------------------------------------------------------

0001   01 N       00005                                             5       000020   999999   99999    99999    9999
                  -----------------------------------------------------
                  5       0       0        0        0       0     * 5

0002   01 P       00001                                             1       000001   999999   99999    99999    9999
                  -----------------------------------------------------
                  1       0       0        0        0       0     * 1

0003   01 N       00001           00001    00001    0001    0001    5       999999   999999   99999    99999    9999
                  -----------------------------------------------------
                  1       0       1        1        1       1     * 5

0005   01 P       00001           00008    00003    0001    0001    14      999999   999999   99999    99999    9999
0005   02 P       00010           00475                             485     000042   001113   99999    99999    9999
0005   03 P       00010           00475                             485     000042   001113   99999    99999    9999
0005   04 P       00002                                             2       000158   999999   99999    99999    9999
0005   05 P       00005                                             5       000142   999999   99999    99999    9999
0005   06 P       00009                                             9                999999   99999    99999    9999
0005   07 P       00017           01311                             1328    000084   002229   99999    99999    9999
0005   08 P       00017           01311                             1328    000084   002229   99999    99999    9999
0005   09 P       00001                                             1       000170   999999   99999    99999    9999
0005   10 P       00011           00022    00005    0001    0001    40      000109   999999   99999    99999    9999
0005   11 P       00026           00027    00007    0001    0001    62      000115   999999   99999    99999    9999
0005   12 P       00007           00027    00007    0001    0001    43      000113   999999   99999    99999    9999
0005   13 P       00012                                             12      000113   999999   99999    99999    9999
0005   14 P       00001                                             1       000098   999999   99999    99999    9999
0005   99 P               00003                                     3       999999   999999   99999    99999    9999
                  -----------------------------------------------------
                  129     3       3656     22       4       4     * 3818

0006   01 N       00001           00001    00012    0001    0001    16      999999   999999   99999    99999    9999
                  -----------------------------------------------------
                  1       0       1        12       1       1     * 16

0008   04 P       00018           00078                             96      000024   000651   99999    99999    9999
0008   05 P       00011           00278                             289     000037   000983   99999    99999    9999
0008   06         00021           00841                             862     000076   001616   99999    99999    9999
0008   07 P       00031           00021    00023    0001    0002    78      000110   999999   99999    99999    9999
0008   10 P       00002                                             2       000172   999999   99999    99999    9999
0008   13 P       00002                                             2       000132   999999   99999    99999    9999
0008   14 P       00011                                             11      000153   999999   99999    99999    9999
0008   19 P       00026           00001    00002    0001    0001    31      000085   999999   99999    99999    9999
0008   20 P       00025           00001    00002    0001    0001    30      000088   999999   99999    99999    9999
0008   21 P       00001                                             1       000136   999999   99999    99999    9999
0008   22 P       00012           00001    00001    0001    0001    16      000083   999999   99999    99999    9999
0008   23 P       00010           00001    00001    0001    0001    14      000081   999999   99999    99999    9999
0008   24 P       00064                                             64      000134   999999   99999    99999    9999
0008   25 P       00003                                             3       000153   999999   99999    99999    9999
0008   26 P       00008                                             8       000153   999999   99999    99999    9999
0008   27 P       00001                                             1       000153   999999   99999    99999    9999
0008   28 P       00005                                             5       000153   999999   99999    99999    9999
0008   29 P       00002                                             2       000153   999999   99999    99999    9999
0008   30 P       00001                                             1       000153   999999   99999    99999    9999
0008   31 P       00021                                             21      000153   999999   99999    99999    9999
0008   32 P       00050           00122    00041    0001    0003    217     000069   999999   99999    99999    9999
0008   33 P       00050           00128    00041    0001    0003    223     000043   999999   99999    99999    9999
0008   34 P       00005           00001    00001    0001    0001    9       000138   999999   99999    99999    9999
0008   35 P       00010                                             10      000054   999999   99999    99999    9999
0008   36 P       00009           00003    00004    0001    0001    18      000055   999999   99999    99999    9999
0008   37 P       00004                                             4       000049   999999   99999    99999    9999
0008   38 P       00009           00003    00004    0001    0001    18      000049   999999   99999    99999    9999
0008   39 P                                                         0                999999   99999    99999    9999
0008   40 P       00024                                             24      000067   999999   99999    99999    9999
0008   41 P       00002           00001    00001            0001    5       000043   999999   99999    99999    9999
0008   42 P       00015           00020    00192    0003    0016    246     999999   999999   99999    99999    9999
0008   43         00001           00001    00001                    3       999999   999999   99999    99999    9999
```

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PLANT  POINT                     EMSISSIONS EST. (TONS/YEAR)                 TOTAL           ALLOW. EMISSIONS (TONS/YEAR)
 ID     ID              PART.  F DUST    SO2      NOX      HC       CO        EMS.      PART.    SO2     NOX      HC      CO

0008    44 P            00001                                                   1      000009  999999   99999   99999    9999
0008    51 P            00001                                                   1      000039  999999   99999   99999    9999
0008    52 P            00001                                                   1      000039  999999   99999   99999    9999
0008    53 P            00001                                                   1      000039  999999   99999   99999    9999
0008    99 P                   02127                                         2127      999999  999999   99999   99999    9999
                          458   2127    1501      314      13       32   *  4445

0009    01 P            00010            00098    00056    0001     0005      170      999999  999999   99999   99999    9999
                           10      0      98       56       1        5   *   170

0011    01 P            00014            00001                                 15      000041  999999   99999   99999    9999
                           14      0       1        0       0        0   *    15

0012    01 P            00027            00001                                 28      000041  999999   99999   99999    9999
                           27      0       1        0       0        0   *    28

0014    01 P            00009                                                   9      000065  999999   99999   99999    9999
0014    02 P            00013                                                  13      000105  999999   99999   99999    9999
0014    03 P            00020                                                  20      000065  999999   99999   99999    9999
```

PLANT	POINT		EMSISSIONS EST. (TONS/YEAR)						TOTAL	ALLOW. EMISSIONS (TONS/YEAR)				
ID	ID	PART.	F DUST	SO2	NOX	HC	CO		EMS.	PART.	SO2	NOX	HC	CO
0018	04 P	00436		00900	00814	0106	0041		2297	000020	999999	99999	99999	9999
0018	05 P	00436		00900	00814	0106	0041		2297	000125	999999	99999	99999	9999
0018	06 P	01293		02816	01206	0130	0051		5496	000139	999999	99999	99999	9999
0018	09 P	00001							1	000018	999999	99999	99999	9999
0018	10 P	00008							8	000110	999999	99999	99999	9999
0018	11 P	00115							115	000126	999999	99999	99999	9999
0018	12 P	00091							91	000188	999999	99999	99999	9999
0018	13 P	00009							9	000150	999999	99999	99999	9999
0018	14 P	00015							15	999999	999999	99999	99999	9999
0018	99 P		00227						227	999999	999999	99999	99999	9999
		2404	227	4616	2834	342	133	*	10556					
0019	01 P	00001							1	000004	999999	99999	99999	9999
0019	02 P	00001							1	000045	999999	99999	99999	9999
0019	03 P	00001							1	000031	999999	99999	99999	9999
		3	0	0	0	0	0	*	3					
0020	01 P	00001		00008	00092	0001	0008		110	000147	999999	99999	99999	9999
0020	03 P	00010		00000	00000	0000	0203		213	000079	999999	99999	99999	9999
0020	04 P	00013		00000	00000	0000			13	000287	999999	99999	99999	9999
0020	98 P		00004						4	999999	999999	99999	99999	9999
0020	99 P		00613						613	999999	999999	99999	99999	9999
		24	617	8	92	1	211	*	953					
0021	01 N	00001		00001					2	999999	999999	99999	99999	9999
		1	0	1	0	0	0	*	2					
0022	01 N	00001		00001		0005			7	999999	999999	99999	99999	9999
		1	0	1	0	5	0	*	7					
0023	01 N	00001		00001	00001	0001	0001		5	000003	999999	99999	99999	9999
		1	0	1	1	1	1	*	5					
0024	01 P	00103		00001	00055	0001	0008		168	000142	999999	99999	99999	9999
0024	02 P	00030							30	000090	999999	99999	99999	9999
0024	03 P	00005							5	000136	999999	99999	99999	9999
0024	99 P		00073						73	999999	999999	99999	99999	9999
		138	73	1	55	1	8	*	276					
0025	01 P	00001		00017	00010				28	999999	999999		99999	9999
0025	02 P	00001							1	000046	999999	99999	99999	9999
0025	03 P	00001							1	000046	999999	99999	99999	9999
		3	0	17	10	0	0	*	30					
0027	01 P	00008		00033	00005	0001	0001		48	000049	999999	99999	99999	9999
0027	99 P		00005						5	999999	999999	99999	99999	9999
		8	5	33	5	1	1	*	53					
0028	03 P	00002							2	000102	999999	99999	99999	9999
0028	04 P	00021			00001				22	000045	999999	99999	99999	9999
0028	05 P	00001							1	000022	999999	99999	99999	9999
0028	06 P	00001							1	000022	999999	99999	99999	9999
0028	07 P	00001							1	000022	999999	99999	99999	9999
0028	08 P	00001							1	000098	999999	99999	99999	9999
0028	09 P	00001							1	000098	999999	99999	99999	9999
0028	10 P	00001							1	000098	999999	99999	99999	9999
0028	11 P	00001							1	000002	999999	99999	99999	9999
0028	12 P	00001							1	000028	999999	99999	99999	9999
0028	13 P	00001							1	000059	999999	99999	99999	9999
0028	14 P	00001							1	000103	999999	99999	99999	9999
0028	15 P	00001							1	000002	999999	99999	99999	9999

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PLANT   POINT                  EMSISSIONS EST. (TONS/YEAR)               TOTAL       ALLOW. EMISSIONS (TONS/YEAR)
 ID      ID        PART.  F DUST    SO2      NOX      HC      CO         EMS.     PART.    SO2      NOX      HC      CO

0028    16 P                                                            0       999999   999999   99999    99999   9999
0028    17 P      00002                                                 2       000018   999999   99999    99999   9999
0028    21 P      00001             00007    00004    0001    0002      15      000104   999999   99999    99999   9999
0028    22 P      00001             00007    00004    0001    0002      15      000104   999999   99999    99999   9999
0028    23 P      00001             00007    00004    0001    0001      14      000104   999999   99999    99999   9999
0028    24 P      00001             00004    00003    0001    0001      10      000018   999999   99999    99999   9999
                  ----------------------------------------------------------
                   40        0       25       16       4       6     *  91

0029    01 P      00056                                                 56      000082   999999   99999    99999   9999
0029    02 P                                 00215                      215     999999   999999   00322    99999   9999
0029    03 P      00002             00017    00008    0001    0001      29      999999   999999   99999    99999   9999
0029    04 P      00008             00091    00042    0001    0004      146     999999   999999   99999    99999   9999
0029    05 P                                 219                        219     999999   999999   00322    99999   9999
0029    06 P      00056                      00219                      275     000082   999999   99999    99999   9999
                  ----------------------------------------------------------
                   122       0       108      703      2       5     *  940

0030    01 N      00001             00006    00004    0001    0000      12      999999   999999   99999    99999   9999
                  ----------------------------------------------------------
                   1         0       6        4        1       0     *  12

0031    01 N      00001                                                 1       000069   999999   99999    99999   9999
0031    02 N      00001                                                 1       000055   999999   99999    99999   9999
0031    03 N      00001                                                 1       000054   999999   99999    99999   9999
0031    04 N      00001                                                 1       000049   999999   99999    99999   9999
0031    05 N      00001                                                 1       000067   999999   99999    99999   9999
0031    06 N      00001                                                 1       000067   999999   99999    99999   9999
0031    07 N      00001                                                 1       000001   999999   99999    99999   9999
                  ----------------------------------------------------------
                   7         0       0        0        0       0     *  7

0032    01 N      00007                                                 7       000044   999999   99999    99999   9999
                  ----------------------------------------------------------
                   7         0       0        0        0       0     *  7

0033    01 P      00028                                                 28      000109   999999   99999    99999   9999
0033    02 P      00007                                                 7       000051   999999   99999    99999   9999
0033    99 P               00023                                        23      999999   999999   99999    99999   9999
                  ----------------------------------------------------------
                   35        23      0        0        0       0     *  58

0035    01 N      00001             00010    00001    0001    0003      16      999999   999999   99999    99999   9999
                  ----------------------------------------------------------
                   1         0       10       1        1       3     *  16

0036    01 N      00001                                                 1       999999   999999   99999    99999   9999
0036    02 N      00001             00001    00001    0001    0001      5       999999   999999   99999    99999   9999
                  ----------------------------------------------------------
                   2         0       1        1        1       1     *  6

0037    01 P      00003                                                 3       000005   999999   99999    99999   9999
0037    02 P      00001                                                 1       000001   999999   99999    99999   9999
0037    03 P      00001                                                 1       000005   999999   99999    99999   9999
0037    04 P      00002                                                 2       000012   999999   99999    99999   9999
0037    05 P      00003                                                 3       000018   999999   99999    99999   9999
0037    06 P      00001                                                 1       000002   999999   99999    99999   9999
0037    07 P      00001                                                 1       000004   999999   99999    99999   9999
0037    08 P                        00001    00001                      2       999999   999999   99999    99999   9999
                  ----------------------------------------------------------
                   12        0       1        1        0       0     *  14

0038    01 P      00013             00278    00116    0001    0006      414     000031   000341   99999    99999   9999
0038    02 P      00018             00229    00113    0001    0005      366     000026   000286   99999    99999   9999
0038    03 P      00037             00530    00258    0003    0012      840     000065   000717   99999    99999   9999
0038    04 P      00018             00442    00227    0002    0011      700     000051   000564   99999    99999   9999
0038    05 P      00167             01457    00806    0008    0038      2476    000221   002430   99999    99999   9999
0038    06 P      00129             01726    01078    0010    0051      2994    000132   001449   99999    99999   9999
                  ----------------------------------------------------------
                   382       0       4662     2598     25      123   *  7790
```

PLANT ID	POINT ID	EMSISSIONS EST. (TONS/YEAR)						TOTAL	ALLOW. EMISSIONS (TONS/YEAR)				
		PART.	F DUST	SO2	NOX	HC	CO	EMS.	PART.	SO2	NOX	HC	CO
0039	01 P	00326		49921	12276	0123	0409	63055	001220	078716	99999	99999	9999
0039	02 P	00414		53565	11241	0112	0375	65707	001216	079026	99999	99999	9999
0039	03 P	00480		28062	12170	0122	0406	41240	001417	092100	99999	99999	9999
0039	04 P	00010		00052	00028	0001	0006	97	999999	999999	99999	99999	9999
0039	05	00006		00030	00017	0000	0004	57	999999	999999	99999	99999	9999
		1236	0	131630	35732	358	1200 *	170156					

```
PLANT  POINT                  EMSISSIONS EST. (TONS/YEAR)               TOTAL          ALLOW. EMISSIONS (TONS/YEAR)
 ID     ID        PART.  F DUST   SO2     NOX    HC    CO       EMS.      PART.   SO2     NOX     HC     CO

0040    01 P      00109          02744   01408  0013  0067      4341     000318  003503  99999   99999   9999
0040    02 P      00133          03441   01719  0016  0082      5391     000387  004260  99999   99999   9999
0040    03 P      00115          03577   02166  0021  0103      5982     000426  004683  99999   99999   9999
0040    04 P      00298          04566   02286  0022  0109      7281     000616  006781  99999   99999   9999
0040    05 P      00027          08764   06867  0067  0229      15954    000725  017388  99999   99999   9999
0040    06 P      00235          22044   12774  0128  0426      35607    000965  023149  99999   99999   9999
0040    07                                                      0
                  917      0     45136   27220  267   1016  *   74556

0041    01 N      00001                                         1        999999  999999  99999   99999   9999
0041    02 N      00001          00009   00004  0001  0001      16       999999  999999  99999   99999   9999
                  2        0     9       4      1     1     *   17

0042    01 P      00215          00089   00107  0053  1243      1707     000131  999999  99999   99999   9999
0042    02 P      00215          00089   00107  0053  1243      1707     000131  999999  99999   99999   9999
0042    03 P      00215          00089   00107  0053  1243      1707     000131  999999  99999   99999   9999
0042    04 P      00001                                         1        999999  999999  99999   99999   9999
                  646      0     267     321    159   3729  *   5122

0044    01 P      00002                                         2        000016  999999  99999   99999   9999
0044    02 P      00001          00000                          1        000009  999999  99999   99999   9999
0044    03 P      00001                                         1        000010  999999  99999   99999   9999
0044    99 P             00001                                  1        999999  999999  99999   99999   9999
                  4        1     0       0      0     0     *   5

0045    01 P      00026          00122   00289  0001  0001      439      000057  999999  99999   99999   9999
0045    02 P      00038          00054   00440  0001  0001      534      000057  999999  99999   99999   9999
                  64       0     176     729    2     2     *   973

0046    01 N      00001                                         1        000012  999999  99999   99999   9999
                  1        0     0       0      0     0     *   1

0048    01 P      00030                                         30       000048  999999  99999   99999   9999
                  30       0     0       0      0     0     *   30

0049    01 N      00002          00013   00003  0001  0001      20       000048  999999  99999   99999   9999
                  2        0     13      3      1     1     *   20

0050    01 P      00002          00450   00003  0001            456      000009  999999  99999   99999   9999
0050    02 P      00001                                         1        000018  999999  99999   99999   9999
0050    03 P      00001                                         1                999999  99999   99999   9999
0050    04 P      00002          00250   00003  0001  0001      257      000009  999999  99999   99999   9999
0050    05 P      00001                                         1        000011  999999  99999   99999   9999
0050    06 P      00001                                         1        000011  999999  99999   99999   9999
                  8        0     700     6      2     1     *   717

0051    01 P      00004                                         4        000032  999999  99999   99999   9999
                  4        0     0       0      0     0     *   4

0053    01        00002          00002   00001  0001  0001      7        999999
                  2        0     2       1      1     1     *   7

0054    01 P      00002                                         2        000004  999999  99999   99999   9999
                  2        0     0       0      0     0     *   2

0056    01 N      00040                                         40       000042  999999  99999   99999   9999
0056    02 N      00001                                         1        000045  999999  99999   99999   9999
                  41       0     0       0      0     0     *   41

0057    01 P      00009          00630                          639      000025  999999  99999   99999   9999
                  9        0     630     0      0     0     *   639
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PLANT  POINT            EMSISSIONS EST. (TONS/YEAR)               TOTAL        ALLOW. EMISSIONS (TONS/YEAR)
 ID     ID      PART.  F DUST   SO2     NOX     HC     CO          EMS.    PART.   SO2     NOX     HC     CO

0059   01 N    00016                                                16     999999  999999  99999   99999  9999
                16       0       0       0       0      0      *    16

0061   01 N    00001                                                1      000003  999999  99999   99999  9999
                1        0       0       0       0      0      *    1

0064   01 N    00001           00001   00011   0001   0001          15     999999  999999  99999   99999  9999
                1        0       1      11       1      1      *    15

0065   01 N    00006                                                6      000044  999999  99999   99999  9999
                6        0       0       0       0      0      *    6

0068   01 P    00001                   00001   0002   0001          5      999999  999999  99999   99999  9999
                1        0       0       1       2      1      *    5

0069   01 N    00001           00001   00002   0001   0001          6      000013  999999  99999   99999  9999
                1        0       1       2       1      1      *    6

0070   01 N    00003           00021   00009   0001   0001          35     999999  999999  99999   99999  9999
                3        0      21       9       1      1      *    35

0072   01 P                                    1026                 1026   999999  999999  99999   99999  9999
                0        0       0       0     1026     0      *    1026

0073   01 P    00001                                                1      000007  999999  99999   99999  9999
                1        0       0       0       0      0      *    1

0075   01 P    00015           00038   00008   0001   0001          63     000085  999999  99999   99999  9999
0075   02 P    00005           00018   00004   0001   0001          29     000029  999999  99999   99999  9999
0075   03 P    00052           00082   00017   0001   0001          153    000094  999999  99999   99999  9999
0075   04 P    00026           00058   00012   0001   0001          98     000081  999999  99999   99999  9999
0075   05 P    00037           00138   00029   0001   0002          207    000100  999999  99999   99999  9999
0075   19 P    00001           00020   00003   0001   0001          26     999999  999999  99999   99999  9999
0075   20 P    00001           00001   00001                        3      999999  999999  99999   99999  9999
0075   98 P            00070                                        70     999999  999999  99999   99999  9999
               137      70     355      74       6      7      *    649

0076   01 P    00016           00017   00013   0001   0001          48     000044  999999  99999   99999  9999
                16       0      17      13       1      1      *    48

0077   01 N    00001                                                1      000005  999999  99999   99999  9999
                1        0       0       0       0      0      *    1

0078   01 N    00001                                                1      000023  999999  99999   99999  9999
                1        0       0       0       0      0      *    1

0079   01 N    00002                                                2      000036  999999  99999   99999  9999
                2        0       0       0       0      0      *    2

0082   01 P    00003           00026   00013   0001   0001          44     999999  999999  99999   99999  9999
0082   02 P    00003           00026   00013   0001   0001          44     999999  999999  99999   99999  9999
                6        0      52      26       2      2      *    88

0084   01      00001                                                1
                1        0       0       0       0      0      *    1

0085   01 N                                    0040                 40     999999  999999  99999   99999  9999
                0        0       0       0      40      0      *    40

0086   01 N    00006                                                6      000045  999999  99999   99999  9999
                6        0       0       0       0      0      *    6
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PLANT  POINT              EMSISSIONS EST. (TONS/YEAR)              TOTAL          ALLOW. EMISSIONS (TONS/YEAR)
 ID     ID       PART.  F DUST   SO2     NOX     HC     CO         EMS.    PART.    SO2     NOX     HC      CO

0087   01 N     00002                                                2     000025  999999  99999   99999   9999
                  2       0       0       0       0      0      *    2

0089   01       00001                                                1
                  1       0       0       0       0      0      *    1

0090   01 N     00001           00001   00001   0001   0001          5     000009  999999  99999   99999   9999
                  1       0       1       1       1      1      *    5

0091   01                                                            0
                  0       0       0       0       0      0      *    0

0092   01 N     00002                                                2     999999  999999  99999   99999   9999
                  2       0       0       0       0      0      *    2

0093   03                                                            0
                  0       0       0       0       0      0      *    0

0094   01 P     00001                                                1     000038  999999  99999   99999   9999
0094   02 P     00001                                                1     000130  999999  99999   99999   9999
0094   03 P     00001                                                1     000130  999999  99999   99999   9999
0094   04 P     00001                                                1     000130  999999  99999   99999   9999
                  4       0       0       0       0      0      *    4

0095   01 N     00001           00001   00016   0001   0001         20     999999  999999  99999   99999   9999
0095   02 N     00001           00001   00016   0000   0001         19     999999  999999  99999   99999   9999
                  2       0       2      32       1      2      *   39

0097   01 N     00005                                                5     000030  999999  99999   99999   9999
0097   02 N     00005                                                5     000032  999999  99999   99999   9999
                 10       0       0       0       0      0      *   10

0098   01                                                            0
                  0       0       0       0       0      0      *    0
```

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PLANT  POINT                    EMSISSIONS EST. (TONS/YEAR)                 TOTAL          ALLOW. EMISSIONS (TONS/YEAR)
 1D     ID         PART.  F DUST    SO2     NOX     HC     CO          EMS.    PART.    SO2      NOX      HC       CO

0101    01 P       00024           00491   00133   0002   0011          661    000156   999999   99999    99999    9999
0101    02 P       00030           00547   00133   0002   0011          723    000155   999999   99999    99999    9999
0101    03 P       00001                                                1      000137   999999   99999    99999    9999
0101    04 P       00012                                                12     000187   999999   99999    99999    9999
                    67       0      1038    266      4      22     *   1397

0102    01 P       00045           00112   00061   0001   0005          224    000102   999999   99999    99999    9999
0102    02 P       00005                                                5      000100   999999   99999    99999    9999
0102    03 P       00004                                                4      000124   999999   99999    99999    9999
                    54       0      112     61       1      5      *   233

0103    01 P       00001                                                1      000114   999999   99999    99999    9999
0103    02 P       00001                                                1      000102   999999   99999    99999    9999
                    2        0      0       0        0      0      *   2

0105    01 P       00001                                                1      000003   999999   99999    99999    9999
                    1        0      0       0        0      0      *   1

0107    01 N       00001                                                1      999999   999999   99999    99999    9999
                    1        0      0       0        0      0      *   1

0108    02 P       00003                                                3      000038   999999   99999    99999    9999
0108    03 P       00002                                                2      000038   999999   99999    99999    9999
0108    04 P       00013                                                13     000038   999999   99999    99999    9999
                    18       0      0       0        0      0      *   18

0114    01 N       00002                                                2      000024   999999   99999    99999    9999
                    2        0      0       0        0      0      *   2

0116    01 N                               00001          0001          2      999999   999999   99999    99999    9999
                    0        0      0       1        0      1      *   2

0117    01 N       00001                   00001   0001   0001          4      999999   999999   99999    99999    9999
0117    02 N       00010                                                10     999999   999999   99999    99999    9999
                    11       0      0       1        1      1      *   14

0118    01 N       00001                                                1      000034   999999   99999    99999    9999
                    1        0      0       0        0      0      *   1

0123    01 N                               0664    0779                 1443   999999   999999   99999    99999    9999
                    0        0      0       664      779    0      *   1443

0124    01 N       00001           00001   00001   0000   0001          4      999999   999999   99999    99999    9999
                    1        0      1       1        0      1      *   4

0130    01 N       00001                                                1      000006   999999   99999    99999    9999
                    1        0      0       0        0      0      *   1

0131    01 N       00001                                                1      000007   999999   99999    99999    9999
                    1        0      0       0        0      0      *   1

0135    01 N       00001                                                1      999999   999999   99999    99999    9999
                    1        0      0       0        0      0      *   1

0136    01 P       00002           00002   00001   0001   0001          7      000035   999999   99999    99999    9999
0136    99 N              00003                                         3      999999   999999   99999    99999    9999
                    2        3      2       1        1      1      *   10

0137    01 N       00001                                                1      999999   999999   99999    99999    9999
                    1        0      0       0        0      0      *   1
```

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PLANT  POINT              EMSISSIONS EST. (TONS/YEAR)                TOTAL         ALLOW. EMISSIONS (TONS/YEAR)
 ID     ID        PART.  F DUST   SO2      NOX     HC      CO         EMS.    PART.    SO2     NOX      HC      CO
________________________________________________________________________________________________________________

0141   01 N      00001                                                 1     999999  999999  99999   99999   9999
0141   02 N      00001           00001    00002   0001    0001         6     999999  999999  99999   99999   9999
0141   03 N      00001                                                 1     999999  999999  99999   99999   9999
                 ______________________________________________________
                   3       0       1        2       1       1      *   8

0150   01 N      00001                                                 1     000048  999999  99999   99999   9999
                 ______________________________________________________
                   1       0       0        0       0       0      *   1

0151   01 N      00001                                                 1     999999  999999  99999   99999   9999
                 ______________________________________________________
                   1       0       0        0       0       0      *   1

0152   01 N      00001                                                 1     999999  999999  99999   99999   9999
                 ______________________________________________________
                   1       0       0        0       0       0      *   1

0155   01 N      00002           00016    00008   0001    0001        28     999999  999999  99999   99999   9999
                 ______________________________________________________
                   2       0      16        8       1       1      *  28

0160   01 N      00001           00001    00008   0018    0001        29     000025  999999  99999   99999   9999
                 ______________________________________________________
                   1       0       1        8      18       1      *  29

0162   01 N      00001                                                 1     999999  999999  99999   99999   9999
                 ______________________________________________________
                   1       0       0        0       0       0      *   1

0163   01 N      00001                    00016   0001    0003        21     999999  999999  99999   99999   9999
                 ______________________________________________________
                   1       0       0       16       1       3      *  21

0164   01 N      00003                                                 3     000004  999999  99999   99999   9999
                 ______________________________________________________
                   3       0       0        0       0       0      *   3

0166   01        00001                            0001                 2     999999  999999  99999   99999   9999
                 ______________________________________________________
                   1       0       0        0       1       0      *   2
```

PLANT ID	POINT ID	MAX DESIGN RATE TPH	% SULFUR CONTENT	% ASH CONTENT	HEAT CONTENT 10**6 BTU/SCC	COMMENTS
0001	01	0002.500	.	.		LEAD FURN.-2
0002	01	0001.500	.	.		ELECT. FURN
0003	01	0000.154	0.23	.	0136	#2 FUEL OIL
0005	01	0000.234	0.20	.	0140	ST BOIL #2OIL
0005	02	0030.920	.	.		A-SULFACID PL
0005	03	0030.920	.	.		B-SULFACID PL
0005	04	0125.520	.	.		A-PHOSACID PL
0005	05	0064.640	.	.		ROP+TSP PLT
0005	06	0060.000	.	.		HGTSP PRODUCT
0005	07	0049.180	.	.		C-SULFACID PL
0005	08	0049.180	.	.		D-SULFACID PL
0005	09	0201.600	.	.		B-PHOSACID PL
0005	10	0050.000	.	.		GRAN DAP-A PL
		0000.084	1.60	.	0150	#5 FUEL OIL
0005	11	0050.000	.	.		GRAN DAP
		0000.141	1.60	.	0149	#5 FUEL OIL
0005	12	0050.000	.	.		GRAN TSP-X TR
		0000.141	1.60	.	0149	#5 FUEL OIL
0005	13	0050.000	.	.		GRAN TSP"Y"
		0000.133	1.60	.	0149	#5 FUEL OIL
0005	14	0250.000	.	.		GTSP+DAP ST-P
0005	99	0500.000	.	.		PHOSROCK PRD
0006	01	0000.200	0.81	.	0150	#6 OIL
		0000.032	.	.	1023	NAT GAS
0008	04	0018.800	.	.		CAP 7SULFACID
0008	05	0021.100	.	.		CAP 8SULFACID
0008	06	0038.140	.	.		CAP 9SULFACID
0008	07	0036.900	.	.		GTSP-TONS PRD
		0000.220	2.24	.	0148	#6 FUEL OIL
0008	10	0168.000	.	.		RMS-6 THRU 10
0008	13	0059.400	.	.		KVS 12BALL ML
0008	14	0106.500	.	.		PA#2-PHOSACID
0008	19	0019.600	.	.		DM#1 AMM.PHOS
		0000.011	0.40	.	0138	#2 FUEL OIL
0008	20	0019.800	.	.		DM#2-AMM.PHOS
0008	21	0038.500	.	.		DMCN-N-AMM-CL
0008	22	0018.000	.	.		DM#3 AMM.PHOS
0008	23	0018.200	.	.		DM#4 GRAN SCR
0008	24	0036.000	.	.		DMCS-S-AMM.CL
0008	25	0106.500	.	.		AS2NBF-TR/STR
0008	26	0106.500	.	.		AS2SBF-TR/STR
0008	27	0149.600	.	.		AS3BEF-TR/STR
0008	28	0149.600	.	.		AS3NBF-TR/STR
0008	29	0149.600	.	.		AS3CBF-TR/STR
0008	30	0149.600	.	.		AS3SBF-TR/STR
0008	31	0149.600	.	.		PA#3 PHOSACID
0008	32	0020.900	.	.		CON 7-UNT SCR
		0000.200	2.24	.	0148	#6 OIL
0008	33	0020.900	.	.		CON 8
		0000.200	2.24	.	0148	#6 OIL
0008	34	0050.000	.	.		RM5 BPL ROCK
		0000.002	0.40	.	0138	#2 OIL
0008	35	0044.900	.	.		CTMB 3
0008	36	0046.000	.	.		CTMD-3ROP DRY
		0000.060	2.24	.	0148	#6 OIL
0008	37	0044.900	.	.		CTMB 4
0008	38	0044.900	.	.		CTMD 4
		0000.060	.	.	0148	#6 FUEL OIL
0008	39	0000.000	.	.		NSP-DOWN 78
0008	40	0086.000	.	.		TSU 4
0008	41	0006.000	.	.		SSF+SSFBF-NA

```
PLANT  POINT      MAX DESIGN      % SULFUR    % ASH      HEAT CONTENT
 ID     ID        RATE TPH         CONTENT    CONTENT   10**6 BTU/SCC    COMMENTS

0008    42        0016.000            .          .                        ANHYD.AM-PROD
                  0001.349           0.40        .            0138        #2 OIL
                  0000.215            .          .            1025        NAT GAS
0008    43        0000.885           0.40        .            0138        AUX.BOIL#2OIL
0008    44        0013.500            .          .                        MI-MON-AM.PHS
0008    51        0800.000            .          .            PHOS
0008    52        0800.000            .          .                        DBFS TR/SHIP
0008    53        0800.000            .          .                        DBFE TR/SHIP
0008    99        0800.000            .          .                        ROCK HND F-DU
0009    01        0000.248           0.98        .            0150        #6 OIL-BOILER
0011    01        0175.000            .          .                        ASPHALT CONC
0012    01        0175.000            .          .                        ASPHALT CONC
0014    01        3000.000            .          .                        SYS.1B SH+REC
0014    02        1500.000            .          .                        SYS.2 TR/STR
0014    03        3000.000            .          .                        SYS.1-A ROCK
```

PLANT ID	POINT ID	MAX DESIGN RATE TPH	% SULFUR CONTENT	% ASH CONTENT	HEAT CONTENT 10**6 BTU/SCC	COMMENTS
0018	04	0063.060	.	.		KILM #4
		0006.420	2.14	10.8	0025	BITUM COAL
		0001.092	2.20	.	0150	#6 OIL
0018	05	0063.750	.	.		KILM #5
		0007.110	2.14	12.9	0025	BITUM COAL
		0001.193	2.20	.	0150	#6 FUEL OIL
0018	06	0148.870	.	.		KILN #6
		0014.560	2.14	12.9	0025	BITUM COAL
		0002.445	2.20	.	0150	#6 FUEL OIL
0018	09	0030.000	.	.		CLINK COOL #4
0018	10	0030.000	.	.		CLINK COOL #5
0018	11	0081.400	.	.		CLINK COOL #6
0018	12	0200.000	.	.		4 FIN GR MILL
0018	13	0378.000	.	.		CONV & STORE
0018	14	1318.000	.	.		CEM STORE&SHI
0018	99	.	.	.		FUG PART
0019	01	0004.000	.	.		CORN CRACKER
0019	02	0018.000	.	.		MILL-CORN GRI
0019	03	0010.000	.	.		PELLET COOLER
0020	01	0065.000	.	.		REHEAT FURN
		0000.114	.	.	1045	NAT GAS
		0000.089	0.25	.	0141	#2 OIL STD BY
0020	03	0015.150	.	.		#3 EL ARC FUR
0020	04	0020.050	.	.		#4 EL ARC FUR
0020	98	0001.500	.	.		FUG PART
0020	99	0014.000	.	.		FUG DUST SEC
0021	01	0000.454	0.50	.	0132	OX.PLT 7 BURN
0022	01	0000.015	.	.	1000	NAT.GAS-P-FUL
		0000.309	0.50	.	0140	#2 FUEL STD B
0023	01	0000.152	.	.		TIN MELTING
		0000.007	0.70	.	0150	#5 FUEL OIL
		0000.005	.	.	1026	NAT.GAS
0024	01	0390.000	.	.		PHOS.ROCK DRY
		0000.930	2.00	.	0143	#5 OIL
0024	02	1100.000	.	.		RAIL CAR UNLD
0024	03	2200.000	.	.		SHIP LOADING
0024	99	2200.000	.	.		F.D.MTRL.HAND
0025	01	0008.780	.	.		NITR ACID PLT
		0000.021	1.25	.		#6 OIL
0025	02	0006.180	.	.		NEUT-T PROD.
0025	03	0006.183	.	.		CONCENTRATOR
0027	01	0250.000	.	.		COAL SLAG D&S
		0000.200	0.18	.	0140	#2 DIESEL
0027	99	0250.000	.	.		SLAG-HND+SHIP
0028	03	0032.400	.	.		BOARD END TRM
0028	04	0093.000	.	.		ROCK DRYER
		0000.229	0.30	.	0140	#2 OIL
0028	05	0093.000	.	.		CRUSH.DRY+TRN
0028	06	0093.000	.	.		ROCK BLDG.CNV
0028	07	0093.000	.	.		ROCK FEED
0028	08	0025.500	.	.		STUCCO-SILO
0028	09	0025.500	.	.		S-26 STUC CON
0028	10	0025.500	.	.		S-25 STUC CON
0028	11	0025.500	.	.		S-18 STUC CON
0028	12	0025.500	.	.		S-10 STUC CON
0028	13	0062.200	.	.		STOR.BINS
0028	14	0031.100	.	.		RAYMOND MILL
0028	15	0030.000	.	.		MIX+PCK+WT.HP
0028	16	0000.000	.	.		OP TERM
0028	17	0001.260	.	.		SCOR&CHAMFER
0028	21	0032.000	.	.		#1 CALCYDINE
		0000.263	0.30	.	0140	#6 OIL

PLANT ID	POINT ID	MAX DESIGN RATE TPH	% SULFUR CONTENT	% ASH CONTENT	HEAT CONTENT 10**6 BTU/SCC	COMMENTS
0028	22	0032.000	.	.		#2 CALCYDINE
		0000.263	0.30	00.0	0140	#6 OIL
0028	23	0032.000	.	.		#3 CALCYDINE
		0000.263	0.30	.	0140	#6 OIL
0028	24	0032.000	.	.		#4 CALCYDINE
		0000.263	0.30	.	0140	#6 OIL
0029	01	0027.083	.	.		#1 PRILL TOWE
0029	02	0015.834	.	.		1 NITRIACID
0029	03	0000.150	0.83	.	0155	A STEAM GEN
0029	04	0000.323	0.83	.	0155	B STEAM GEN
0029	05	0015.834	.	.		#2 NITRIACID
0029	06	0027.083	.	.		#2 PRILL TOWE
0030	01	0000.140	0.79	.	0150	#6 OIL
0031	01	0360.000	.	.		CEM.STORAGE
0031	02	0090.000	.	.		WHITE UNLOAD
0031	03	0080.000	.	.		CEM PACK 2 BH
0031	04	0040.000	.	.		CEM PACK MAS
0031	05	0300.000	.	.		BULK TRK LOAD
0031	06	0300.000	.	.		BULK TRK LOAD
0031	07	0020.000	.	.		WHITE CEM PCK
0032	01	0069.935	.	.		R/M CONC CY
0033	01	3000.000	.	.		PHOS.RCK HD/S
0033	02	3000.000	.	.		ROCK TR/STR
0033	99	3000.000	.	.		F-PART.ML/HD
0035	01	0000.095	1.70	.	0150	BOIL-#6 OIL
0036	01	0000.040	.	.		TYPE 4 INCIN.
0036	02	0000.072	0.09	.	0138	2BOIL #2 OIL
0037	01	0005.000	.	.		OAT CLEANER
0037	02	0000.250	.	.		OAT CLN+GRIN
0037	03	0005.000	.	.		CORN CHOP SEP
0037	04	0005.000	.	.		COT SEED HULL
0037	05	0005.000	.	.		PELLET COOLER
0037	06	0001.000	.	.		MINERAL MIXER
0037	07	0003.000	.	.		ROLLER COOLER
0037	08	0000.006	0.20	.	0135	BOIL 18 #2 OI
0038	01	0001.810	0.95	.	0150	#1-#6 FUEL OI
0038	02	0001.810	0.95	.	0150	#2-#6 FUEL OI
0038	03	0002.495	0.95	.	0150	#3-#6 FUEL OI
0038	04	0002.495	0.95	.	0150	#4-#6 FUEL OI
0038	05	0003.620	0.95	.	0150	#5-#6 FUEL OI
0038	06	0005.292	0.95	.	0150	#6-#6 FUEL OI
0039	01	0181.500	2.80	11.5	0023	#1-BITUM COAL
0039	02	0182.100	2.60	11.3	0023	#2 BITUM COAL
0039	03	0190.300	2.18	10.3	0023	#3 BITUM COAL
0039	04	0006.600	0.22	.	0146	#2 G-TURBINE
0039	05	0008.500	0.22	.	0146	#1+3 G TUBR

PLANT ID	POINT ID	MAX DESIGN RATE TPH	% SULFUR CONTENT	% ASH CONTENT	HEAT CONTENT 10**6 BTU/SCC	COMMENTS
0040	01	0008.044	0.96	.	0150	#1-#6 OIL
0040	02	0008.044	0.96	.	0150	#2-#6 OIL
0040	03	0010.846	0.96	.	0150	#3-#6 OIL
0040	04	0012.900	0.96	.	0150	#4-#6 OIL
0040	05	0093.400	1.11	10.2	0024	#5-BITUM.COAL
0040	06	0151.400	1.17	10.5	0024	#6-BITUM.COAL
0040	07	0001.850	0.32	.	0020	GAS TURB. #2
0041	01	0000.100	.	.		1&4 WASTE
0041	02	0000.085	0.60	.	0154	BOILER#6 OIL
0042	01	0010.420	.	.		#1 TONS WASTE
0042	02	0010.420	.	.		#2 TONS WASTE
0042	03	0010.420	.	.		#3 TONS WASTE
0042	04	0000.400	.	.		PATHO INCIN
0044	01	0010.000	.	.		PLAN MIL-T PD
0044	02	0004.500	.	.		RE-SAW
0044	03	0004.200	.	.		STPMILL&GREEN
0044	99	0036.000	.	.		FUG.DUST MTRL
0045	01	0011.190	.	.		#1 MELT FURN
		0000.250	0.30	.	0140	NAT GAS
0045	02	0010.700	.	.		#2 MELT FURN
		0000.300	0.30	.	0137	#2 OIL
0046	01	0002.900	.	.		CER TILE MFG
0048	01	0600.000	.	.		PHOS.ROCK HND
0049	01	0001.706	.	.		2 BH ASH+CEM
		0000.047	2.10	.	0142	#5 FUEL OIL
0050	01	0001.350	.	.		#1 LEAD FURN
0050	02	0002.200	.	.		4 MELT.KETTLE
0050	03	0000.000	.	.		DELETED
0050	04	0001.350	.	.		#2 LEAD FURN
		0000.018	.	.	1000	NAT GAS
		0000.068	0.15	00.5	0026	COKE
0050	05	0001.000	.	.		OXIDE(LEAD)PL
0050	06	0001.000	.	.		OXIDE(LEAD)PL
0051	01	1200.000	.	.		GTSP+DAP HD/S
0053	01	.	.	.		
0054	01	0000.717	.	.		ALUM.FURN.PRD
0056	01	0006.720	.	.		ASP SATURATOR
0056	02	0008.610	.	.		ROOF MACHINE
0057	01	0002.610	.	.		TONS-MTRL CHD
0059	01	0438.600	.	.		POTASH LD&UNL
0061	01	0000.624	.	.		INS.BURNOUT
0064	01	0000.090	.	.	1000	NAT GAS
		0000.300	0.90	.	0150	BUNK C-STD-BY
0065	01	0064.650	.	.		R-M CONC CY
0068	01	0000.500	.	.		METAL RECLE
0069	01	0002.330	.	.		GALV STEEL PR
		0000.010	.	.	1000	NAT GAS
0070	01	0000.070	0.93	00.0	0150	#6 OIL BOILER
0072	01	0002.900	.	.		2OVEN+1SPRAY
0073	01	0006.000	.	.		SULPHUR GRIND
0075	01	0043.000	.	.		FEED PREP
		0000.240	1.90	.	0138	#5 OIL
0075	02	0009.000	.	.		DICALCIUM PHO
		0000.075	1.85	.	0138	#5 OIL
0075	03	0024.400	.	.		1+2 REACT6PAR
		0000.500	1.85	.	0138	#5 OIL
0075	04	0020.250	.	.		DEFLU#3-4&5
		0000.675	1.85	.	0138	#5 OIL
0075	05	0024.400	.	.		DEFLU #6+7
		0000.700	1.85	.	0138	#5 OIL
0075	19	0000.082	1.85	.	0138	#5 FUEL OIL

PLANT ID	POINT ID	MAX DESIGN RATE TPH	% SULFUR CONTENT	% ASH CONTENT	HEAT CONTENT 10**6 BTU/SCC	COMMENTS
0075	20	0000.050	1.85	.		#5 FUEL OIL
0075	98	0115.050	.	.		STORE-FUGDUST
0076	01	0150.000	.	.		ASPHALT CONC
		0000.400	0.31	.	0142	WASTE OIL
0077	01	0000.050	.	.		VERMICULATE
0078	01	0019.000	.	.		BULK HANDLING
0079	01	0029.200	.	.		READY-MIX CON
0082	01	0000.124	0.85	.	0150	#6 OIL BOIL
0082	02	0000.124	0.85	.	0150	#6 OIL BOIL
0084	01	.	.	.		
0085	01	0050.000	.	.		PETROL STORE
0086	01	0075.870	.	.		R/M CONC-CY
0087	01	0008.750	.	.		R/M CONC-CY
0089	01	.	.	.		
0090	01	0004.320	.	.		GALV KETTLES
		0000.022	.	.	1000	NAT GAS
0091	01	.	.	.		
0092	01	0200.000	.	.		SLUDGE LD&UN
0093	03	.	.	.		
0094	01	0100.000	.	.		UNLD/HND FERT
0094	02	1000.000	.	.		GRAN.FERT.SHP
0094	03	1000.000	.	.		GRAN.FERT.SHP
0094	04	1000.000	.	.		GRAN.FERT.SHP
0095	01	0000.059	.	.	1050	NAT GAS BOILE
		0000.419	2.20	.	0140	#6 OIL
0095	02	0000.059	.	.	1050	NAT GAS
		0000.419	2.20	.	0140	#6 OIL
0097	01	0030.000	.	.		ROTARY DRYER
0097	02	0040.000	.	.		SCRE&PACKING
0098	01	.	.	.		

PLANT ID	POINT ID	MAX DESIGN RATE TPH	% SULFUR CONTENT	% ASH CONTENT	HEAT CONTENT 10**6 BTU/SCC	COMMENTS
0101	01	0550.000	.	.		#1DRY PHOS RK
		0001.876	0.93	.	0154	#6 OIL
0101	02	0550.000	.	.		#2DRY PHOS RK
		0001.876	0.93	.	0154	#6 OIL
0101	03	0900.000	.	.		ROCK STOR BIN
0101	04	1920.000	.	.		DRY ROCK SHIP
0102	01	0300.000	.	.		RCK DRY TN/HR
		0000.750	0.70	.	0150	#6 OIL
0102	02	0267.000	.	.		PHOS.ROCK STR
0102	03	1000.000	.	.		PHOS.RCK SHIP
0103	01	0109.375	.	.		GRAIN HAND&SH
0103	02	0054.700	.	.		GRAIN HAND
0105	01	0001.000	.	.		COPPER PD.INC
0107	01	0000.075	.	.		TYPE I INCIN
0108	02	0110.000	.	.		AUTO SHREDDER
0108	03	0110.000	.	.		SHK SEPARATOR
0108	04	0110.000	.	.		MAG SEPARATOR
0114	01	0100.000	.	.		CEM+ROCK+SAND
0116	01	0000.003	.	.	1050	2BOIL-NAT GAS
0117	01	0000.030	.	.	1000	STM150HP BOIL
0117	02	0000.030	.	.		DRYER NAT GAS
0118	01	0073.500	.	.		CONC-RM-SILO
0123	01	0001.217	.	.		GALLONS PUMP
0124	01	0007.300	.	.		R/M CONC.BLCK
		0000.007	0.18	.	0135	#2 OIL-BOILER
0130	01	0002.000	.	.		AGRI-DIS-GRAN
0131	01	0006.000	.	.		GRANULAR PEST
0135	01	0000.050	.	.		PATHO INCIN
0136	01	0003.700	.	.		VERMICULITE
		0000.034	0.50	.	0130	#2 FUEL OIL
0136	99	0003.700	.	.		PUG PAR-ORE H
0137	01	0000.500	.	.		PATHO.INCIN
0141	01	0000.050	.	.		TYPE IV INCIN
0141	02	0000.050	0.12	.	1382	2BOIL #2 FUEL
		0000.002	.	.	1050	1BOIL NAT.GAS
0141	03	0000.025	.	.		TYPE O INCIN
0150	01	0148.000	.	.		Q'LIME HND&SP
0151	01	0000.050	.	.		PATHO INCIN
0152	01	0000.050	.	.		PATHO INCIN
		0000.000	.	.	3045	NAT GAS
0155	01	0000.089	.	.		#6OIL FIRE BO
0160	01	0002.130	.	.		CAN PROD
		0000.070	.	.	1000	NAT GAS
0162	01	0000.150	.	.		TYPE O-4 INC
0163	01	0000.200	.	.	1050	NAT GAS
0164	01	0001.500	.	.		GRAN DRYING
		0000.009	.	.	1000	NAT GAS BOIL
0166	01	0000.200	.	.	TYPE	

APPENDIX B:

PINELLAS COUNTY--EMISSIONS INVENTORY FOR PERMITTED SOURCES

1981

BOARD OF COUNTY COMMISSIONERS
PINELLAS COUNTY, FLORIDA
315 COURT STREET
CLEARWATER, FLORIDA 33516

COMMISSIONERS
BRUCE TYNDALL, CHAIRMAN
CHARLES E. RAINEY, VICE-CHAIRMAN
GABRIEL CAZARES
JOHN CHESNUT, JR.
BARBARA SHEEN TODD

RECEIVED
HILLSBOROUGH COUNTY
DIVISION OF PUBLIC UTILITIES & SAFETY

MAY 11 1981

PROGRAMS AND FISCAL
MANAGEMENT

May 8, 1981

Mr. Joseph Murdock
Division of Public Utilities and Safety
Hillsborough County
P.O. Box 1110
Tampa, Florida 33601

Dear Mr. Murdock:

We are enclosing a copy of the Emissions Inventory for Permitted Sources which you requested.

If there is any other information we can provide, please don't hesitate to contact us at (813)448-2521.

Sincerely,

Peter A Hessling

Peter A. Hessling
Environmental Engineer
Division of Air and Water Quality

PAH/jh
Enclosures

Florida Power
813-866-4281
Gary Sinz
or
Ted Bronetty

PINELLAS COUNTY

EMISSIONS INVENTORY FOR

PERMITTED SOURCES

1980

The 1980 Emissions Inventory contains information from 63 facilities with a total of 129 permits to operate and 2 permits to construct.

The following are grand totals for reported and calculated emissions for all permitted sources within the County during 1980:

	REPORTED (Tons/Year)	CALCULATED (Tons/Year)
PARTICULATES	1,283.32	1,956.50
SULFUR OXIDES	32,990.78	33,652.55

The calculated emissions are greater than the reported data because several sources do not report emissions while others report incomplete data.

Florida Power Corporation and Stauffer Chemical Company are by far the largest emitters of particulates and sulfur oxides in Pinellas County.

In regard to total suspended particulates,

Florida Power Corp. accounts for	57.37%
Stauffer Chemical Company accounts for	35.50%
All other permitted sources account for	7.13%

In regard to sulfur oxides emissions,

Florida Power Corp. accounts for	97.88%
Stauffer Chemical Company accounts for	2.08%
All other permitted sources account for	0.04%

By grouping the rest of the permitted sources according to their type, they contribute as follows:

-Concrete plants account for 2.67% of TSP and .02% of SO_x.
-Asphalt plants account for 2.70% of TSP.
-Boilers/Food Processing account for 0.62% of TSP.
-Incinerators account for 0.40% of TSP.
-All other sources account for 0.74% of TSP and 0.02% of SO_x.

Table 1 shows the main emitting sources (bubble concept), and their contribution in percent of total emissions.

As can be seen from data depicted in table 2, the information reported for the calendar year 1980 show an increase of 4.17% and 3.83% in particulates and sulfur oxides emissions respectively, when compared against 1979 data. Increases of 8% and 11% were observed for TSP and SO_x data reported in 1979 with respect to corresponding data for 1978.

Tables 3A and 3B depict the emission behavior of the two largest emitters. Florida Power had the biggest emissions during 1978; then it abated its output during 1979 and increased it again during 1980. The differences observed in the calculated data for Stauffer Chemical Company are basically due to the fact that this company has consistently reported incomplete information in their annual operations reports.

TABLE 1

MAIN EMISSION SOURCES (BUBBLE CONCEPT)

SOURCE	PARTICULATES (TONS/YEAR)	% OF TOTAL EMISSION	SO_x (TONS/YEAR)	% OF TOTAL EMISSION
Florida Power Corp. Bartow Plant	843.99	43.1	25,223.97	74.95
Florida Power Corp. Higgins Plant	252.57	12.91	7,517.55	22.33
Stauffer Chemical Company	695.55	35.5	700.31	2.08
Florida Power Corp. Bayboro Plant	26.93	1.37	203.61	0.60
W. L. Cobb Construction	32.21	1.6	.06	Negligible
H. P. Hood, Inc.	11.87	0.6	.00	"
Golden Triangle Asphalt Co.	10.42	0.5	.04	"
Pinellas Concrete Products	5.97	0.3	.00	"
General Materials Largo Plant	5.92	0.3	2.06	"
Suncoast Paving, Inc.	5.69	0.29	.00	"
Clearwater Concrete	5.44	0.27	.00	"
Dana Industries	5.34	0.27	.00	"
General Materials St. Petersburg Plant	5.32	0.27	.00	"
City of Largo Sludge Dryer	5.03	0.25	.00	"

TABLE 2

PINELLAS COUNTY

EMISSION INVENTORIES (TONS/YEAR)

COMPARISON TABLE

Calendar Year	1978	1979	1980
Particulates Reported	1,138.93	1,231.86	1,283.32
Particulates Calculated	1,155.19	1,308.64	1,956.50
Sulfur Oxides Reported	28,612.11	31,773.91	32,990.78
Sulfur Oxides Calculated	27,813.39	31,859.57	33,652.55

[illegible]

Bartow [illegible]

[illegible]

[illegible] 16 [illegible] 46 60 [illegible] 413 [illegible]

813-937-4113

[illegible]

TABLE 3A

CALCULATED EMISSIONS (TON/YEAR)

FLORIDA POWER

	PARTICULATES	SULFUR OXIDES
1978	1,285.18	35,404.24
1979	1,101.63	31,020.50
1980	1,967.48	32,945.13

TABLE 3B

CALCULATED EMISSIONS (TON/YEAR)

STAUFFER CHEMICAL CO.

	PARTICULATES	SULFUR OXIDES
1978	38.60	56.60
1979	65.65	740.62
1980	695.55	700.31

Stack Test
** AP-42
*** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

FACILITY NAME ADDRESS	OBSER-VATIONS	DER PERMIT NO.	PERMIT EXPIRATION DATE	PARTICULATE (TONS/YEAR)		SO_x (TONS/YEAR)		INSPECTION DATES			SOURC TYP
				REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	
Acre Iron & Metal (J & F Scrap) 9386 67 St. N. Pinellas Park 33665		A052-26499	3/14/85	0.56*	0.56*	.002*	.002*	11/21/80	11/15/81	V.E.	Smelti. Furnac
Bay Area Facility, Inc. 5862 Ulmerton Road Clearwater, FL 33520	Has used Propane & Nat. Gas	A052-3112	4/18/82	0.0	0.18**	0.0	—	12/16/80	4/18/81	V.E.	Path. Incin.
Baynard Thompson 4-73 Funeral Home 301 Corey Avenue St. Petersburg Beach 33736	Annual oper. report has not been rec'd as of 4/6/81	A052-17968	5/9/84		0.06**	—	—	—	5/21/81	V.E.	Path. Incin.
Best Concrete Products, Inc. 12207 Starkey Road Largo, FL 33540	*** Ep=IPW(.02) (.01) 99% Eff. 1872Tons/yr CEM	A052-23294	7/15/82	0.0	0.37***	—	—	—	8/23/81	V.E.	Cemen Sil

* Stack Test
** AP-42
*** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

FACILITY NAME ADDRESS	OBSER-VATIONS	DER PERMIT NO.	PERMIT EXPIRATION DATE	PARTICULATE (TONS/YEAR)		SO$_x$ (TONS/YEAR)		INSPECTION DATES			SOURCE TYPE
				REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	
Clearwater Concrete Ind. 1700 N. Hercules Clearwater, FL 33515		A052-15818	3/6/84	0.08	0.08**	0.003	0.003**	10/24/80	11/28/81	V.E.	Block Plant Boiler
	*** (IPW)(.02)(.01)=Ep.	A052-15819	3/6/84	0.15	1.52***	—	—	10/24/80	11/30/81	V.E.	Cement Silo Plant #
	*** (IPW) (.02) (.01)=Ep.	A052-15820	3/6/84	0.11***	1.07***	—	—	10/24/80	11/30/81	V.E.	Fly Ash Silo Plant #
	Eff=99%***	A052-15821	3/6/84	0.15***	1.52***	—	—	10/24/80	11/29/81	V.E.	C. Silo Plant #
	Ep=(IPW)*** (.02)(.01)	A052-15824	3/6/84	0.13***	1.25***	—	—	10/24/80	11/29/81	V.E.	Cement Silo Concrete Block
SUB TOTAL				0.62	5.44	.003	.003				

* Stack Test
** AP-42
** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

FACILITY NAME ADDRESS	OBSER-VATIONS	DER PERMIT NO.	PERMIT EXPIRATION DATE	PARTICULATE (TONS/YEAR)		SO$_x$ (TONS/YEAR)		INSPECTION DATES			SOURC TYPE
				REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	
W. L. Cobb Construction Co. 1700 Starkey Road Largo, FL 33541		A052-5749	10/4/82	32.21*	32.21*	0.06*	0.06**	10/24/80	10/4/81	Stack TSP	Asphal Plant
Concrete Pavers, Inc. 28 Street S. & 11 Avenue St. Petersburg, FL	*** Ep=IPW(.02) (.01)	A052-28795	5/13/82	0.0	1.68***	—	—	3/12/80	3/12/81	V.E.	Cement Storage Silo
Concrete Services, Inc. CR 82, Tarpon Springs FL Mailing Address: P.O.Box 630 Clearwater, FL 33517	*** Ep=IPW(.02) (.01)	A052-18312	5/21/84	0.0	1.60***	—	—	12/19/80	6/15/81	V.E.	Cement Silo
		A052-18314	5/21/84	0.0	0.06***	—	—	12/19/80	6/15/81	V.E.	Fly As Silo
SUB TOTAL				0.0	1.66						
Concrete Services, Inc. Ulmerton Road & SR-688 Largo; FL Mailimg Address: P.O.Box 630 Clearwater, FL 33517	*** Materials Balance	A052-18310	5/15/84	—	.06	2.2***	1.62**	11/17/80	4/20/81	V.E.	100 HP Boiler
		A052-18311	5/15/84	0.0	0.28**	—	—	11/17/80	6/8/81	V.E.	Block Plant Mixer
	Ep=IPW(.02) (.01)***	A052-18315	5/9/84	0.0	1.60***	—	—	11/17/80	6/8/81	V.E.	Cement Silo
SUB TOTAL				0.0	1.94	2.20	1.62				

* Stack Test
** AP-42
*** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

FACILITY NAME ADDRESS	OBSERVATIONS	DER PERMIT NO.	PERMIT EXPIRATION DATE	PARTICULATE (TONS/YEAR)		SO_x (TONS/YEAR)		INSPECTION DATES			SOURCE TYPE
				REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	
Concrete Services 1700 22 Street North St. Petersburg, FL	*** Ep=IPW(.02) (.01)	A052-18306	5/15/84	0.0	2.00***	—	—	1/23/81	4/28/81	V.E.	Cement Silo
	*** (99% Eff.	A052-18313	5/15/84	0.0	0.15***	—	—	1/23/81	9/14/81	V.E.	Fly Ash Silo
SUB TOTAL				0.0	2.15						
Concrete Services 1600 N. Hercules Ave. Clearwater, FL	*** Ep=IPW(.02) (.01)	A052-18308	5/21/84	0.0	0.40***	—	—	10/24/80	6/19/81	V.E.	Fly Ash Silo
	*** Ep=IPW(.02) (.01)	A052-18309	5/21/84	0.0	5.00***	—	—	10/24/80	6/15/81	V.E.	Cement Silo
SUB TOTAL				0.0	5.40						
Dana Industries 9400 Ulmerton Road Largo, FL 33540	Ep=IPW(.02) (.01)***	A052-6501	4/21/83	0.624	1.30***	—	—	—	4/21/82	V.E.	Fly Ash Silo 400 Barrel
	Ep=IPW(.02) (.01)***	A052-6502	4/25/83	0.065	0.13	—	—	—	3/24/82	V.E.	Cement Silo 600 Barrel
	Ep=IPW(.02) (.01)***	A052-6503	4/26/83	1.95	3.90***	—	—	—	9/16/81	V.E.	Cement Stg. Silo
		A052-6504	4/26/83	0.009	0.009**	0.0	0.0**	—	9/16/81	V.E.	100 H.P. Boiler
SUB TOTAL				2.65	5.34	0.0	0.0				

* Stack Test
** AP-42
*** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

FACILITY NAME ADDRESS	OBSERVATIONS	DER PERMIT NO.	PERMIT EXPIRATION DATE	PARTICULATE (TONS/YEAR)		SO_x (TONS/YEAR)		INSPECTION DATES			SOURCE TYPE
				REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	
Directors Services, Inc. 3121 44 Ave. N. St. Pete., FL 33714		A052-5595	8/9/82	—	0.24**	—	—	—	8/12/81	V.E.	Path. Incin.
		A052-5596	8/9/82	—	0.24**	—	—	—	8/12/81	V.E.	Path. Incin.
SUB TOTAL					0.48						
Diversa-Pak, Inc. 4242 - 31 St. N. St. Pete., FL 33714	*** Material Balance	A052-33965	8/28/85	0.4***	.40	.03***	.03	8/15/80	9/81	V.O.C.	Paper Coating VOC
Farmbest Foods 4711 34 St. N. St. Pete., FL 33733	Permit iss'd 9/8/77. No Ann. Oper. Rpt. found from 79-81 on file.	A052-5643	8/24/82	Did not report	0.12**	Did not report	—	11/14/80	6/24/81	V.E.	150 HP Boiler

* Stack Test
** AP-42
*** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

FACILITY NAME ADDRESS	OBSER-VATIONS	DER PERMIT NO.	PERMIT EXPIRATION DATE	PARTICULATE (TONS/YEAR)		SO_x (TONS/YEAR)		INSPECTION DATES			SOURCE TYPE
				REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	
Florida Power Corp. Weedon Island St. Pete., FL											
Bartow No. 1	Test every 6 mo.	A052-6206	2/28/83	223.06*	223.06*	6592.18*	6592.18*	2/26/81	5/18/81	Stack Test TSP, HC, SO_x NO_x V.E.	Steam Generator
Bartow No. 2	Test every 12 mo.	A052-23168	10/23/84	201.88*	201.88*	7048.30*	7048.30*	2/26/81	8/17/81	Stack Test TSP, SO_x NO_x V.E.	Steam Generator
Bartow No. 3		A052-6280	6/22/83	382.19*	382.19*	11306.70*	11306.70*	2/25/81	11/1/81	Stack Test TSP SO_x V.E	Steam Generator
Bartow-Anclote Pipeline Heater	*** Mat. Bal. Fuel Anal. No. 2-.26%S	A052-15188	2/15/84	0.76***	0.76**	13.98***	13.98**	2/26/81	2/25/82	V.E.	Boiler
Bartow Peaker No.1	*** Mat. Bal. Fuel Anal.	A052-22551	9/11/84	10.16***	10.16***	73.97***	73.97***	2/26/81	8/13/81	V.E.	Comb. Turl. Gen.
Bartow Peaker No. 2	*** Mat. Bal. Fuel Anal.	A052-22553	9/11/84	9.48***	9.48***	69.02***	69.02***	2/26/81	8/13/81	V.E.	Comb. Turb. Gen.
Bartow Peaker No. 3	*** Mat. Bal. Fuel Anal.	A052-22554	9/11/84	12.61***	12.61	91.81***	91.81***	2/26/81	8/13/81	V.E.	Comb. Turb Gen.
Bartow Peaker No. 4	*** Mat. Bal. Fuel Anal.	A052-22555	9/11/84	3.85***	3.85***	28.01***	28.01***	2/26/81	8/13/81	V.E.	Comb. Turb. Gen.
SUB TOTAL				843.99	843.99	25,223.97	25,223.97				

* Stack Test
** AP-42
*** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

FACILITY NAME ADDRESS	OBSERVATIONS	DER PERMIT NO.	PERMIT EXPIRATION DATE	PARTICULATE (TONS/YEAR)		SO_x (TONS/YEAR)		INSPECTION DATES			SOURCE TYPE
				REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	
Florida Power Corp. 13 Ave. 2 St. South St. Pete., FL											
Bayboro Peaker No. 1	*** Mat. Bal. Fuel Anal.	A052-22556	9/11/84	4.95***	4.95***	37.42***	37.42***	—	8/21/81	V.E.	Comb. Turb. Gen.
Bayboro Peaker No. 2	*** Mat. Bal. Fuel Anal.	A052-22557	9/11/84	5.71***	5.71***	43.14***	43.14***	—	8/21/81	V.E.	Comb. Turb. Gen.
Bayboro Peaker No. 3	*** Mat. Bal. Fuel Anal.	A052-22558	9/11/84	8.09***	8.09***	61.18***	61.18***	—	8/21/81	V.E.	Gas Turb. Gen.
Bayboro Peaker No. 4	*** Mat. Bal. Fuel Anal.	A052-22559	9/11/84	8.18***	8.18***	61.87***	61.87***	—	8/21/81	V.E.	Gas Turb. Gen.
SUB TOTAL				26.93	26.93	203.61	203.61				

* Stack Test
** AP-42
*** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

FACILITY NAME ADDRESS	OBSERVATIONS	DER PERMIT NO.	PERMIT EXPIRATION DATE	PARTICULATE (TONS/YEAR)		SO_x (TONS/YEAR)		INSPECTION DATES			SOURCE TYPE
				REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	
Florida Power Corp. Shore Drive Oldsmar, FL											
Higgins No. 1	517 M BTU/hr	A052-20186	7/16/84	70.37*	70.37*	2,141.77*	2,141.77*	10/20/80	6/15/81	Stack Test TSP, SO_x, V.E. Fuel Anal.	Steam Generator
Higgins No. 2	520 M BTU/hr 6 mo. interv. test	A052-6207	2/30/83	94.17*	94.17*	2,637.67*	2,637.67*	—	4/26/81	Stack Test TSP, SO_x, V.E. NO_x, HC	Steam Generator
Higgins No. 3	375 M BTU/hr 12 mo. interv. test	A052-6593	5/15/83	79.46*	79.46*	2,697.54*	2,697.54*	3/3/81	11/15/81	Stack Test TSP, SO_x, V.E. Fuel Anal.	Steam Generating Boiler
Higgins Peaker No. 1	*** Mat. Bal. Fuel Anal.	A052-5702	9/21/82	2.54***	2.54***	11.76***	11.76***	—	9/21/81	V.E.	Gas Turb. Generator
Higgins Peaker No. 2	" "	A052-5703	9/21/82	1.79***	1.79***	7.86***	7.86***	—	9/21/81	V.E.	Gas Turb. Generator
Higgins Peaker No. 3	" "	A052-5704	9/21/82	2.03***	2.03***	10.00***	10.00***	—	9/23/81	V.E.	Gas Turb. Generator
Higgins Peaker No. 4	" "	A052-5705	9/21/82	2.21***	2.21***	10.95***	10.95***	—	9/21/81	V.E.	Gas Turb. Generator
SUB TOTAL				252.57	252.57	7,517.55	7,517.55				

* Stack Test
** AP-42
*** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

FACILITY NAME ADDRESS	OBSERVATIONS	DER PERMIT NO.	PERMIT EXPIRATION DATE	PARTICULATE (TONS/YEAR)		SO_x (TONS/YEAR)		INSPECTION DATES			SOURCE TYPE
				REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	
Florida Rock Ind. 122 Ave. & 46 St. N. Pinellas Park, FL	*** Ep=IPW(.02) (.01) 99% Eff.	A052-31021	4/21/82	0.237	0.992***	—	—	—	4/21/81	V.E.	Cement Silo
Florida Rock Ind. 13175 95 St. Largo, FL	" "	A052-41462	4/20/86	0.700	2.927***	—	—	4/10/81	3/25/82	V.E.	Cement Silo
General Materials 2063 20 Ave., S.E. Largo, FL	*** Ep=IPW(.02) (.01) 99% Eff	A052-2560	2/10/82	2.65***	2.65***	—	—	11/12/80	1/10/82	V.E.	Cement Silo
	*** 2% Dust 98% Eff.	A052-3150	2/10/82	2.46***	2.46***	—	—	11/12/80	1/10/82	V.E.	Fly Ash Silo
	Ep=IPW(.02) (.01) 99% Eff.	A052-3151	2/10/82	0.68***	0.68***	—	—	11/12/80	1/10/82	V.E.	Cement Silo
	Not used during 1980	A052-3152	2/10/82	0.00	0.00	—	—	11/12/80	1/10/82	V.E.	Fly Ash Silo
	25.51x10^3gal #5 2.08%S	A052-3153	2/10/82	0.298**	0.127**	2.061**	4.16*	11/12/80	1/21/82	V.E.	2 Boilers 80 HP 100 HP
SUB TOTAL				6.09	5.92	2.06	4.16				

* Stack Test
** AP-42
*** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

FACILITY NAME ADDRESS	OBSERVATIONS	DER PERMIT-NO.	PERMIT EXPIRATION DATE	PARTICULATE (TONS/YEAR)		SO_x (TONS/YEAR)		INSPECTION DATES			SOURCE TYPE
				REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	
General Materials 601 24 St. S. St. Pete., FL	*** 99% Eff.	A052-3154	3/3/82	1.38	1.38***	—	—	1/26/81	1/28/82	V.E.	Cement Silo
	*** 99% Eff.	A052-3155	3/3/82	1.38	1.38***	—	—	1/26/81	1/24/82	V.E.	Cement Silo
	*** 99% Eff	A052-3156	3/3/82	2.56	2.56***	—	—	1/26/81	1/24/82	V.E.	Fly Ash Silo
SUB TOTAL				5.32	5.32						
Golden Triangle Asphalt 12955 40 St. N. St. Pete., FL		A052-24788	1/7/85	10.42*	10.42*	0.04*	0.04*	10/27/80	10/4/81	Stack Test TSP	Asphalt Batch Plant
Green Mounds Pet Cemetery 1889 U.S. Hwy. 19 S. St. Pete., FL		A052-3131	6/21/81	—	0.60**	—	—	—	6/21/80	V.E.	Path. Incin.
Gateway Community Hosp. (formerly Hubert Rutland Hospital) 5115 58 Ave. N. St. Pete., FL 33714		A052-27161	2/1/85	1.27	1.25**	0.008	—	10/20/80	10/30/81	V.E.	Path. Incin.
Gulf Machinery Co. 3149 SR 590 Safety Harbor, FL		A052-6978	9/6/83	Did not report	0.54**	Did not report	0.84**	9/11/80	10/25/81	V.E.	Iron melting furnace

* Stack Test
** AP-42
*** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

ACILITY NAME ADDRESS	OBSER-VATIONS	DER PERMIT NO.	PERMIT EXPIRATION DATE	PARTICULATE (TONS/YEAR)		SO_x (TONS/YEAR)		INSPECTION DATES			SOURCE TYPE
				REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	
. P. Hood, Inc. 27 San Christopher Dr unedin, FL		A052-36125	12/30/85	11.8*	11.8*	—	—	1/16/81	2/19/82	Stack Test TSP	Feed mill dryer & cooler /WHE
	2 boilers not in use	A052-5808	10/26/82	0.49	0.07**	—	—	1/16/81	8/26/81	V.E.	4 Pro. Steam Boilers
UB TOTAL				12.29	11.87						
oneywell, Inc. 13350 US Hwy 19 St. Pete., FL		A052-5518	7/13/82	—	—	—	—	9/17/80	7/18/81	Beryllium V.E.	Plt. #4 Brylm. Dust Filt.
		A052-5519	7/13/82	—	—	—	—	9/17/80	7/18/81	V.E. Beryllium	Plt. #1 Brylm. Dust Filt.
	Electro Plating Vapors	A052-6988	8/24/83	—	—	—	—	9/17/80	8/28/81	Hydrofluoric & Chromic acids-vapors emissions	Metal Finish Plt. #4
	1.4 lb/ton refuse +1.7 16/10^3 gal propane	A052-2059	4/25/82	.005	.022**	—	—	9/17/80	2/25/81	V.E.	Type 0 Incin. C.Board/ Plastic
		A052-17008	3/26/84	.003	.003**	—	—	9/17/80	1/19/81	V.E.	Type 5 W. Incin. (Liq)
		A052-34156	12/1/85	—	—	—	—	—	3/1/82	VOC Report	17open top Vap. degrease
SUB TOTAL				.008	.025 -						

* Stack Test
** AP-42
*** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

FACILITY NAME ADDRESS	OBSERVATIONS	DER PERMIT NO.	PERMIT EXPIRATION DATE	PARTICULATE (TONS/YEAR)		SO_x TONS/YEAR		INSPECTION DATES			SOURCE TYPE
				REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	
Industrial Concrete Ind., Douglas Rd. Oldsmar Plant	Ep=IPW(.02) (.01) 99% Eff. ***	A052-24169	12/6/84	0.04	*** 0.423	—	—	9/18/80	8/31/81	V.E.	Cement Silo
751 16 Ave. S.E. Largo Plant	" "	A052-24170	12/6/84	0.02	*** 0.225	—	—	11/12/80	8/8/81	V.E.	Cement Silo
751 16 Ave. S.E. Largo Plant	" "	A052-24171	12/6/84	0.01	*** 0.101	—	—	11/12/80	9/14/81	V.E.	Cement Silo
751 16 Ave., S.E. Largo Plant	" "	A052-24174	12/6/84	0.04	*** 0.371	—	—	11/12/80	9/7/81	V.E.	Cement Silo
SUB TOTAL				.11	1.120						
Int. Assoc. Mortuary Serv. 4617 73 Ave. Pinellas Park 33565		AC52-33120	4/30/81	0.005	** 0.002	—	—	1/12/81	2/9/82	V.E.	Path. Incin.
City of Largo 5100 150 Ave. N. Clearwater, FL	2.80lb/hr x 3597 hr / 2000 Emission***	A052-30168	7/15/85	5.03*	5.036***	—	—	1/27/81	12/4/81	Stack test TSP VE	Sludge Dryer
Life Sciences, Inc. 2950 72 St. N. St. Pete., FL 33710		A052-3158	6/7/81	0.180	0.448**	—	—	—	6/7/80	V.E.	Path. Incin.
Marlof, Inc. 15500 49 St. N. Clearwater, FL	Ep=IPW(.02) (.01) 99% Eff.	A052-6173	3/2/83	0.0	0.308***	—	—	1/23/81	1/12/82	V.E.	Cement Silo

* Stack Test
** AP-42
*** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

FACILITY NAME ADDRESS	OBSERVATIONS	DER PERMIT NO.	PERMIT EXPIRATION DATE	PARTICULATE (TONS/YEAR)		SO_x TONS/YEAR		INSPECTION DATES			SOURCE TYPE
				REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	
Mease Hospital & Clinic 833 Milwaukee Ave. Dunedin, FL		A052-16577	3/21/84	0.15	0.166**	0.006	0.006**	2/12/81	1/5/82	V.E.	Path. Incin. I,II,III,IV
Moorefield Paving 1550 Starkey Road Largo, FL 33540		A052-19880	7/18/84	4.49*	4.49*	0.02*	0.02*	4/7/81	4/24/82	Stack Test TSP	Asphalt Plant
Moss Funeral Home, Inc. 802 N. Ft. Harrison Clearwater		A052-24061	12/4/84	0.214	0.208**	—	—	9/11/80	9/13/81	V.E.	Path. Incin.
National Cremation Society 13655 Belcher Road Largo, FL		A052-29986	6/25/85	Did not report	0.50**	—	—	4/22/81	4/8/82	V.E.	Path. Incin.

* Stack Test
** AP-42
*** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

				PARTICULATE (TONS/YEAR)		SO_x TONS/YEAR		INSPECTION DATES			
FACILITY NAME ADDRESS	OBSERVATIONS	DER PERMIT NO.	PERMIT EXPIRATION DATE	REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	SOURCE TYPE
PBC Industries, Inc.	*** 99% Eff.	A052-3159	6/7/82	0.02	0.148***	—	—	—	6/7/81	V.E.	Cement Silo
	" "	A052-3160	6/8/82	0.32	3.184***	—	—	—	6/8/81	V.E.	Cement Silo
4250 52nd Street N. St. Petersburg, FL	" "	A052-3161	6/8/82	0.06	0.634***	—	—	—	6/8/81	V.E.	Fly Ash Silo
	" "	A052-3162	6/8/82	0.08	0.795***	—	—	—	6/8/81	V.E.	Cement Silo
	" "	A052-3163	6/8/82	0.02	0.151***	—	—	—	6/8/81	V.E.	Fly Ash Silo
SUB TOTAL				0.50	4.912						
Pinellas Concrete Products 4100 Park St. N. St. Pete., FL	Ep=IPW(.02)(.01) 99% Eff.	A052-23356	11/27/84	0.60	5.970***	—	—	11/21/80	8/14/81	V.E.	Concrete Batch & Blk. Plant
Pinellas Concrete Products 602 E. Jeffords Clearwater, FL	" "	A052-16826	3/21/84	0.16	1.637***	—	—	11/14/80	1/11/82	V.E.	Cement Silo
	" "	A052-24827	3/21/84	0.04	0.425***	—	—	11/14/80	10/3/81	V.E.	Fly Ash Sil
SUB TOTAL				0.80	2.057						

* Stack Test
** AP-42
*** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

FACILITY NAME ADDRESS	OBSERVATIONS	DER PERMIT NO.	PERMIT EXPIRATION DATE	PARTICULATE (TONS/YEAR)		SO_x TONS/YEAR		INSPECTION DATES			SOURCE TYPE
				REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	
Pinellas Concrete Products Anclote Rd. & SCL RR Tarpon Springs, FL	Ep=IPW(.02)(.01) 99% Eff.	A052-24825	11/30/84	0.05	0.488***	—	—	12/1/80	10/3/81	V.E.	Fly Ash Silo
	" "	A052-24823	11/30/84	0.08	0.837***	—	—	12/1/80	10/3/81	V.E.	Block Plant Silo-Cement Bin
	" "	A052-24826	11/30/84	0.22	2.174***	—	—	12/1/80	10/3/81	V.E.	Cement Silo
SUB TOTAL				0.35	3.499						
Pinellas Concrete Products 170 Pine Avenue Oldsmar, FL	Did not operate	A052-41691	4/21/86	—	—	—	—	—	3/26/82	V.E.	Cement Silo
	Did not operate	A052-41690	4/21/86	—	—	—	—	—	3/26/82	V.E.	Fly Ash Silo

* Stack Test
** AP-42
*** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

FACILITY NAME ADDRESS	OBSERVATIONS	DER PERMIT NO.	PERMIT EXPIRATION DATE	PARTICULATE (TONS/YEAR)		SO_x TONS/YEAR		INSPECTION DATES			SOURCE TYPE
				REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	
Pinellas County Dog Shelter 5020 150 Ave. N. Clearwater, FL 33520		A052-3165	7/5/82	0.024	0.348**	—	—	9/9/80	7/15/81	V.E.	Path. Incin.
Pinellas Industries Inc. 2195 Lake Ave.,Largo		A052-16021	3/8/84	Did not report	.10**	—	—	—	12/7/81	V.E.	Pipe plant cement silo
		A052-16022	3/8/84	Did not report	.14**	—	—	—	12/8/81	V.E.	Block Plant Cement silo
		A052-16023	3/8/84	Did not report	.07**	—	—	—	12/9/81	V.E.	Block Plant Cement silo
		A052-16024	3/8/84	Did not report	.04**	Did not report	0.002**	—	12/6/81	V.E.	Boiler
		A052-16025	3/8/84	Did not report	.12**	—	—	—	12/8/81	V.E.	Fly ash silo
		A052-16028	3/8/84	Did not report	.70**	—	—	—	12/8/81	V.E.	Cement silo
SUB.TOTAL					1.17		0.002				
Plaza Fifth Ave. Apts. 441 33 St. N. St. Pete., FL		A052-32474	8/12/85	—	0.04**	—	—	—	8/1/81	V.E.	Type II Incin.
		A052-32476	5/12/85	—	0.04**	—	—	—	8/1/81	V.E.	Type II Incin.
SUB TOTAL					0.08						

* Stack Test
** AP-42
*** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

FACILITY NAME ADDRESS	OBSERVATIONS	DER PERMIT NO.	PERMIT EXPIRATION DATE	PARTICULATE (TONS/YEAR)		SO_x TONS/YEAR		INSPECTION DATES			SOURCE TYPE
				REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	
Prevatt Funeral Home 6100 Park Blvd. Pinellas Park, FL 33565		A052-17725	5/15/84	0.085	0.061	—	—	11/14/80	8/31/81	V.E.	Path. Incin
Redd Citrus Specialties 1711 South 10 St. Safety Harbor,FL33572	TSP=15lb/10^3 gal;SO_x =142 (.20)lb/10^3 gal	A052-18997	6/11/84	0.11***	0.11***	0.21**	0.21**	—	3/22/81	V.E.	50 HP Boiler
Sanitary Dash Mfg. Co. 2800 Oakmont Ave. Tarpon Springs, FL	Chromic acid mist	A052-13447	10/25/83	0	0	0	0	—	9/11/81	V.E.	Wet scrubber Chrome plating
SPCA of Clearwater SR 590, Clearwater		A052-40321	3/12/86	—	0.381	—	—	1/22/81	3/12/82	V.E.	Path. Incin
SPCA of St. Petersburg 9099 130 Ave. N. Largo, FL 33543		A052-28253	5/6/85	Did not report	.33**	Did not report	.08**	3/10/81	2/12/82	V.E.	Path. Incin
St. Anthony's Hospital 601 12 St. N. St. Pete., FL 33705	out of commission	A052-5748	10/4/82	—	—	—	—	—	10/4/81	V.E.	Path. Incin
St. John's Catholic Church 445 82 Ave. St. Pete. Beach 33706		A052-15737	3/6/84	0.19**	0.19**	0.01**	0.01**	—	11/20/81	V.E.	Type I Incin.

* Stack Test
** AP-42
*** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

FACILITY NAME ADDRESS	OBSERVATIONS	DER PERMIT NO.	PERMIT EXPIRATION DATE	PARTICULATE (TONS/YEAR)		SO_x TONS/YEAR		INSPECTION DATES			SOURCE TYPE
				REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	
Stauffer Chemical Co. Anclote Road Tarpon Springs, 33589	Estimated from past informat. ***	A052-20247	7/1/84	—	5.08***	—	—	—	8/6/81	V.E.	Transfer section PH furnace.
	Not in use	A052-4514	9/1/82	—	—	—	—	—	—		2 cyclones wet scrubber
	0.4 Fluoride	A052-4512	9/1/82	3.2*	3.2*	—	—	9/10/80	9/14/81	Stack test Fluoride	wet scrubber (turbulaire)
	*** Based on % of SO_x in sands & oil	A052-21738	8/1/84	57.8*	57.8*	—	648.25***	—	9/10/81	Stack test TSP SO_x Fluoride	gas scrubber nod. kiln
	V.E. every 6 months	A052-25134	3/1/85	—	9.114	—	—	—	10/23/81	V.E. 6 months	2 fabric filters for 2 silos
		A052-4513	9/9/82	1.5*	1.5*	—	—	—	9/14/81	Stack test TSP	cyclone collector
	No sampling required	A052-17569	4/1/84	—	—	—	—	—	9/26/81	V.E.	spray tower fiber mist elim.
	No info in oper. rpt.	A052-30673	9/1/85	—	—	—	—	8/15/80	8/15/81	V.E.	Sludge roaster
		A052-29626	5/1/85	—	3.53**	41.00	52.064**	—	3/31/81	V.E.	Boiler
	IPW vs avg. emissions (lb/hr)***	A052-20246	7/1/84	—	31.21***	—	—	—	2/1/82	V.E.	Rotoclone dust collector
		A052-32909	9/1/85	2.2*	2.2*	—	—	1/21/81	10/9/81	Stack test TSP V.E.	tap hole scrubber PH furnace
	5.6 lb/ton of IPW **	A052-29625	5/1/85	—	581.92**	—	—	4/18/80	11/15/81	V.E. 6 months	elec. arc furnace
SUB TOTAL				64.7	695.55	41.00	700.31				

* Stack Test
** AP-42
*** Other

EMISSIONS INVENTORY

PERMITTED SOURCES

FACILITY NAME ADDRESS	OBSERVATIONS	DER PERMIT NO.	PERMIT EXPIRATION DATE	PARTICULATE (TONS/YEAR)		SOx TONS/YEAR		INSPECTION DATES			SOURCE TYPE
				REPORTED	CALCULATED	REPORTED	CALCULATED	PREVIOUS	TEST DUE	TYPE	
Tarpon Springs General Hospital 1395 S. Pinellas Ave. Tarpon Springs, Fl 33589		A052-18914	5/10/84	0.679**	0.374**	—	—	—	5/16/80	V.E.	Path. Incin I-IV
	No oper.rpt. available	A052-32476	5/12/85	Did not report		Did not report					Type II Incin.
Times Publishing Co. 1301 31 St. N. St. Pete., FL	Check permit needed: 1 Boiler 1 Baghouse	A052-35289	12/15/85	Did not report		Did not report				VOC	Graphic Arts system 5 presses web-offset
Veterans Administration Hospital Bay Pines Blvd, Bay Pines	Common Stack	AC52-15122	3/1/82	under construction							3 Gas Boilers
		AC52-15123	3/1/82	under	construction						Path. Incin.
West Coast Crematory 13715 49 St. Clearwater, FL 33520	incomplete operation report ***	A052-17071	2/21/84	0.69	0.69***	—	—	1/26/81	10/13/81	V.E.	Type 1 & IV Incin.
	" "	A052-17070	2/21/84	0.69	0.69***	—	—	1/26/81	10/13/81	V.E.	Type 1 & IV Incin.
SUB TOTAL				1.38	1.38						
Wilhelm Thurston Funeral Home 145 8 Street North St. Pete., FL 33701	incomplete operation report	A052-5556	7/21/82	0.78	0.78	—	—	—	8/2/80	V.E.	Type 1 & IV Incin.

APPENDIX C:

AIR QUALITY MONITORING DATA

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO_2
METHOD: Coulometric
SITE ADDRESS: Davis Island Coastguard
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1hr.
UNITS OF OBS.: PPB

1	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	10	4360	035	G	02	1	81	05
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
42401	14	08	0
23 24 25 26 27	28 29	30 31	32

DAY	ST HR	RDG 1	RDG 2	RDG 3	RDG 4	RDG 5	RDG 6	RDG 7	RDG 8	RDG 9	RDG 10	RDG 11	RDG 12
19 20	21 22	33 34 35 36	37 38 39 40	41 42 43 44	45 46 47 48	49 50 51 52	53 54 55 56	57 58 59 60	61 62 63 64	65 66 67 68	69 70 71 72	73 74 75 76	77 78 79 80
16	12	20	5	2	2	2	2	2	0	2	2	0	2
17	00	8	5	8	28	25	25	10	8	12	22	12	25
17	12	32	5	10	5	2	2	2	0	5	2	2	2
18	00	2	2	5	5	5	5	5		35	35	50	50
18	12	18	10	8	10	8	8	10	18	5	2	0	8
19	00	10	10	8	5	2	2	2	2				
19	12		0	0	0	2	0	2	2	2	2	2	2
20	00	2	2	0	0	0	0	0	0	0	0	0	0
20	12	0	0	0	0	0	0	0	0	2	0	2	0
21	00	0	0	0	0	0	2	2	2	8	5	2	0
21	12	2	0	0	0	0	0	0	0	0	0	90	120
22	00	70	30	15	8	8	18	10	20				
22	12		18	18	2	5	5	5	8	8	8	5	10
23	00	10	8	10	30	15	18	68	45	10	5	5	10
23	12	8	5	5	2	5	5	0	0	2	5	2	2
24	00	2	2	2	2	5	8	8	8	10	5	20	18
24	12	5	10	5	2	5	5	8	5	2	2	8	5
25	00	2	5	10	2	2	2	2	8	2	2		
~~25~~	~~12~~												
~~26~~	~~00~~												
~~26~~	~~12~~												
~~27~~	~~00~~												
~~27~~	~~12~~												
~~28~~	~~00~~												
~~28~~	~~12~~												
~~29~~	~~00~~												
~~29~~	~~12~~												
~~30~~	~~00~~												
~~30~~	~~12~~												
~~31~~	~~00~~												
~~31~~	~~12~~												

75.5%

DEPARTMENT OF ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO_2
METHOD: Coulometric
SITE ADDRESS: Davis Island Coastguard
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1hr.
UNITS OF OBS.: PPB

1	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	1 0	4 3 6 0	0 3 5	G	0 2	1	8 1	0 5
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
4 2 4 0 1	1 4	0 8	0
23 24 25 26 27	28 29	30 31	32

DAY 19 20	ST-HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
01	00	0	0	0	0	0	0	0	0	18	12	10	8
01	12	8	0	0	0	0	0	0	0	0	0	0	0
02	00	0	0	0	0	0	0	0	2	2	5	10	12
02	12	2	2	2	0	2	2	2	2	8	15	52	35
03	00	48	65	68	45	45	8	15	52	28	8	5	15
03	12	10	10	15	5	8	2	8	10	2	8	12	10
04	00	10	18	15	8	2	2	10	8	12	5	5	5
04	12	8	5	5	2	2	10	2	2	2	2	10	15
05	00	12	12	22	30	10	22	18	5				20
05	12	2	2	2	10	12	2	5	2	2	0	5	8
06	00	12	5	5	2	2	2	2	8		75	8	22
06	12	10	2	0	0	0	0	0	0	0	2	2	2
07	00	2	5	2	2	2	2	2	5	2	2	2	5
07	12	2	0	0	0	0	0	0	2	2	2	5	2
08	00	2	0	0	0	0	0	0	0		8	2	2
08	12	0	2	0	0	0	0	0	0	8	2	8	5
09	00	2	2	2	2	5	2	2	5	8	30	12	5
09	12	2	0	0	0	5	12	0	0	0	0	2	10
10	00	10	12	15	20	30	30	10	10	10	5	0	0
10	12	0	0	2	5	0	0	2	10	20	10	0	0
11	00	0	0	0	0	0	0	0	0	5	0	0	0
11	12	0	0	0	0	0	0	0	0	0	0	0	0
12	00	0	0	0	2	2	2	2	2				
12	12		2	2	8	2	5	5	2	0	0	0	0
13	00	0	2	2	5	0	0	5	15		2	5	15
13	12	18	5	2	0	0	30	2	0	2	2	8	5
14	00	8	5	0	2	5	10	5	5		12	5	0
14	12	0	8	15	0	0	2	0	10	2	0	2	2
15	00	0	0	2	0	0	0	0	0		2	2	2
15	12	2	2	0	2	2	2	2	2	2	2	0	0
16	00	0	0	0	2	2	2	2	5	5	28	30	52

DER form PERM 12-8 (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO2
METHOD: Coulometric
SITE ADDRESS: Davis Island Coastguard
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1 hr.
UNITS OF OBS.: PPB

1	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	1 0	4 3 6 0	0 3 5	G	0 2	1	8 1	0 4
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
4 2 4 0 1	1 4	0 8	0
23 24 25 26 27	28 29	30 31	32

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
16	12	30	50	55	75	52	50	12	5	2	2	5	20
17	00	20	30	30	32	20	25	30	15	8	8	8	5
17	12	8	8	5	8	8	2	2	5	5	5	5	2
18	00	2	2	2	2	5	10	10	12	12	10	8	8
18	12	5	5	2	15	18	2	2	2	2	5	25	10
19	00	5	2	2	2	2	2	2	5	5	2	25	32
19	12	25	15	12	8	5	5	2	2	0	0	2	2
20	00	5	2	2	2	2	2	0	2	2	0		5
20	12	15	12	8	2	2	2	2	0	0	0	2	0
21	00	0	0	2	2	2	2	2	2	5	5	2	0
21	12	0	0	0	0	0	0	2	0	0	0	0	0
22	00	0	0	2	2	5	8	8	20	28	22	28	12
22	12	5	2	2	2	2	2	5	0	0	0	0	0
23	00	8	12	18	25	12	10	15	15	18	2		12
23	12	2	2	8	15	2	0	2	0	0	0	2	2
24	00	2	2	2	2	2	5	2	2	2	15	2	2
24	12	2	2	2	2	2	2	2	2	2	2	2	2
25	00	2	2	2	2	2	2	5	5	8	2	2	8
25	12	5	8	2	2	2	2	2	2	2	5	5	5
26	00	5	18	22	30	15	12	8	20	12	12	15	18
26	12	15	20	25	22	10	22	32	12	5	8	8	8
27	00	15	12	8	10	15	10	18	10				8
27	12	2	5	5	5	8	5	2	22	15	15	12	12
28	00	15	12	22	12	15	12	12	15	15	18	10	5
28	12	5	12	18	10	10	18	5	5	2	0	5	5
29	00	12	12	10	8	5	5	5	5	10	20	5	2
29	12	0	2	2	5	2	2	2	0	0	0	0	0
30	00	0	0	0	0	0	0	8	5	2	2	12	18
30	12	5	8	2	0	0	0	0	0	0	0	0	0
31	00												
31	12												

97.8%

DEPARTMENT OF ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO2
METHOD: Coulometric
SITE ADDRESS: Davis Island Coastguard-Tampa
CITY NAME:
PROJECT: Source
TIME INTERVAL OF OBS.: 1hr.
UNITS OF OBS.: PPB

1	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH	PARAMETER CODE	METHOD	UNITS	DP
1	10	4360	035	G	02	1	81	04	42401	14	08	0
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18	23 24 25 26 27	28 29	30 31	32

DAY	ST HR	RDG 1	RDG 2	RDG 3	RDG 4	RDG 5	RDG 6	RDG 7	RDG 8	RDG 9	RDG 10	RDG 11	RDG 12
19 20	21 22	33 34 35 36	37 38 39 40	41 42 43 44	45 46 47 48	49 50 51 52	53 54 55 56	57 58 59 60	61 62 63 64	65 66 67 68	69 70 71 72	73 74 75 76	77 78 79 80
01	00	8	5	2	0	0	0	0	0	0	0	0	0
01	12	0	0	8	5	32	18	5	2	2	2	0	0
02	00	0	2	0	0	0	0	0	0	5	45	35	22
02	12	8	8	12	2	2	5	2	8	8	10	8	18
03	00	18	20	18	12	8	8	8	20	12		8	5
03	12	5	2	5	2	12	8	8	8	15	8	8	10
04	00	12	5	5	5	5	2	5	2	8	10	10	8
04	12	8	5	5	12	12	5	5	2	2	2	2	5
05	00	2	2	2	5	2	5	5	5	28	18	5	2
05	12	2	2	2	2	2	2	18	25	10	5	2	2
06	00	2	2	2	2	2	2	2	2	2			
06	12	10	2	5	12	20	18	18	40	80	40	42	68
07	00	55	40	115	155	65	8	8	30	105	20	22	10
07	12	30	18	32	10	10	15	10	8	18	75	15	15
08	00	25	40	58	38	18	12	25	45	10	5	5	8
08	12	2	5	8	8	15	25	12	52	78	85	50	65
09	00	42	55	18	20	10	20	30	18	15		5	5
09	12	5	8	8	5	0	0	0	0	0	0	8	2
10	00	2	5	30	38	28	28	8	22	20		2	0
10	12	0	2	2	2	2	2	2	2	2	5	8	2
11	00	2	8	55	35	55	20	5	8	10	12	15	2
11	12	2	2	0	0	0	0	0	0	0	2	5	5
12	00	8	5	8	10	10	10	8	10	12	12	5	18
12	12	25	12	10	28	8	15	5	2	2	2	2	15
13	00	22	10	8	18	10	15	10	12	20			
13	12	5	10	10	8	8	5	2	8	5	2	2	8
14	00	15	15	10	10	8	18	15	20	20	8	25	10
14	12	2	5	2	5	18	15	8	2	5	8	8	8
15	00	10	12	22	15	15	8	5	8	8		10	15
15	12	22	25	15	10	12	2	5	2	5	8	18	28
16	00	30	12	10	15	20	25	12	20	55		35	35

DEPARTMENT OF ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO_2
METHOD: Coulometric
SITE ADDRESS: Davis Island Coastguard
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1hr.
UNITS OF OBS.: PPB

1	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	10	4360	035	G	02	1	81	03
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
42401	14	08	0
23 24 25 26 27	28 29	30 31	32

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
16	12												
17	00												
17	12												
18	00												
18	12						0	0	2	2	0	0	0
19	00	0	0	0	0	0	0	2	5	2		2	5
19	12	2	2	0	0	0	2	5	5	2	0	2	0
20	00	0	0	0	0	0	0	0	2	0	0	2	0
20	12	0	0	0	0	0	0	0	0	0	0	0	2
21	00	2	0	0	5	2	5	10	12	8	8	32	20
21	12	25	38	40	8	5	20	18	0	0	0	0	2
22	00	0	0	8	15	10	8	8	10	0	2	0	10
22	12	5	2	2	0	0	0	0	0	0	0	0	0
23	00	0	5	2	0	0	0	0	0	0		5	0
23	12	0	0	0	0	0	8	0	2	2	2	2	2
24	00	2	5	5	5	5	5	5	2	2		2	2
24	12	0	0	0	0	0	0	0	0	0	0	2	5
25	00	2	0	0	0	0	0	0	5	5		5	2
25	12	0	0	5	5	2	5	10	0	0	0	15	2
26	00	15	18	12	35	35	50	35	45	25		0	0
26	12	5	0	2	12	0	5	5	8	2	20	15	0
27	00	0	0	0	0	0	0	2	15	20	8		0
27	12	0	2	22	40	18	12	10	2	0	0	0	0
28	00	0	2	0	2	5	8	5	8	12	18	15	2
28	12	2	0	0	0	0	0	0	0	2	2	0	5
29	00	15	20	18	10	10	10	10	5	2	15	15	10
29	12	5	2	0	2	2	2	2	2	2	5	8	8
30	00	12	10	8	2	2	2	15	55	60			
30	12			2	2	2	2	2	2	2	0	0	0
31	00	0	0	2	2	0	0	0	0	0	2	0	2
31	12	0	0	0	8	22	12	2	0	0	2	2	5

75.8%

DER form PERM 12-8 (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: HILLSBOROUGH COUNTY ENVIRONMENTAL PROTECTION COMM.

PARAMETER OBSERVED: SO_2

METHOD: Coulometric

SITE ADDRESS / CITY NAME: Davis Island Coastguard - Tampa

PROJECT: Source

TIME INTERVAL OF OBS.: 1hr.

UNITS OF OBS.: PPB

1	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	10	4360	035	G	02	1	81	03

PARAMETER CODE	METHOD	UNITS	DP
42401	14	08	0

DAY 19 20	ST 21	HR 22	RDG 1 33–36	RDG 2 37–40	RDG 3 41–44	RDG 4 45–48	RDG 5 49–52	RDG 6 53–56	RDG 7 57–60	RDG 8 61–64	RDG 9 65–68	RDG 10 69–72	RDG 11 73–76	RDG 12 77–80
01	0	0	22	20	18	15	15	15	15	15	18	18	18	18
01	1	2	18	18	18	20	20	18	15	12	10	10	10	8
02	0	0	8	5	5	5	2	2	2	2	2		5	0
02	1	2	0	0	0	5	2	0	0	0	2	0	2	0
03	0	0	0	2	2	0	0	0	0	2	12		38	20
03	1	2	20	15	10	8	10	28	15	10	10	10	15	15
04	0	0	15	20	25	30	28	28	25	15	15			5
04	1	2	18	5	2	0	0	0	0	0	0	0	0	0
05	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05	1	2	2	8	8	8	8	8	8	8	8	8	8	8
06	0	0	12	8	8	5	5	5	5	8	8	10	12	10
06	1	2	10	10	12	20	15	15	10	18	10	10	10	8
07	0	0	8	8	8	5	5	5	5	5	35	32	10	10
07	1	2	8	8	10	10	10	12	12	18	18	15	15	12
08	0	0	15	15	15	15	18	25	18	18	22	33	30	22
08	1	2	18	10	10	8	8	8	8	10	10	12	10	12
09	0	0	12	28	15	10	10	12	12	15	25		20	10
09	1	2	12	10	2	0	0	0	0	2	0	2	2	8
10	0	0	2	0	2	2	2	5	2	5	5		2	2
10	1	2	2	10	5	5	8	8	8	10	10	10	8	8
11	0	0	10	12	10	8	5	5	2	5	8			8
11	1	2	8	10	15	8	10	10	8	8	5	2	5	2
12	0	0												
12	1	2												
13	0	0												
13	1	2												
14	0	0												
14	1	2												
15	0	0												
15	1	2												
16	0	0												

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY	PARAMETER OBSERVED	METHOD
Hillsborough County EPC	SO2	Coulometric

SITE ADDRESS	CITY NAME	PROJECT	TIME INTERVAL OF OBS.	UNITS OF OBS.
Davis Island Coastguard -	Tampa	Source	1hr.	PPB

1	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	10	4360	035	G	02	1	81	02
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
42401	14	08	0
23 24 25 26 27	28 29	30 31	32

DAY	ST	HR	RDG 1	RDG 2	RDG 3	RDG 4	RDG 5	RDG 6	RDG 7	RDG 8	RDG 9	RDG 10	RDG 11	RDG 12
19 20	21	22	33 34 35 36	37 38 39 40	41 42 43 44	45 46 47 48	49 50 51 52	53 54 55 56	57 58 59 60	61 62 63 64	65 66 67 68	69 70 71 72	73 74 75 76	77 78 79 80
16	1	2	8	8	10	8	8	10	5	2	2	2	2	2
17	0	0	2	2	2	2	2	2	8	10	5		5	5
17	1	2	2	2	2	2	5	2	2	2	2	5	5	5
18	0	0	5	12	18	20	15	12	18	18				10
18	1	2	8	5	5	2	2	20	10	5	5	5	2	2
19	0	0	2	2	5	10	12	8	10	8	15		5	10
19	1	2	12	8	5	5	5	22	18	12	5	5	5	8
20	0	0	8	8	10	12	15	10	8	8	8	8	8	8
20	1	2	5	5	5	5	5	2	2	2	2	2	2	2
21	0	0	8	8	5	5	5	8	8	8	8	10	12	15
21	1	2	10	10	8	8	30	25	28	15	12	12	10	10
22	0	0	10	10	8	8	8	5	5	5	8	10	10	12
22	1	2	12	10	10	5	5	5	5	5	5	5	5	5
23	0	0	2	2	2	2	2	2	5	5	5	2	2	2
23	1	2	2	5	8	8	8	5	2	2	2	5	2	2
24	0	0	18	8	2	2	0	0	2	8	12		0	0
24	1	2	2	2	2	5	10	8	8	8	8	10	10	8
25	0	0	5	5	5	2	2	2	2	5	5			
25	1	2												
26	0	0												
26	1	2		20	30	40	30	20	8	5	5	2	0	0
27	0	0	0	0	5	0	0	0	0	5	12	10	12	25
27	1	2	10	10	5	5	20	12	20	10	8	8	10	12
28	0	0	12	18	10	5	15	30	18	15	25	32	25	35
28	1	2	15	15	15	18	15	30	15	15	15	20	22	22
29	0	0												
29	1	2												
30	0	0												
30	1	2												
31	0	0												
31	1	2												

93.2%

[illegible]

DEPARTMENT OF ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO_2
METHOD: Coulometric
SITE ADDRESS: Davis Island Coastguard - Tampa
CITY NAME:
PROJECT: Source
TIME INTERVAL OF OBS.: 1hr.
UNITS OF OBS.: PPB

1	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	10	4360	035	G	02	1	81	02

PARAMETER CODE	METHOD	UNITS	DP
42401	14	08	0

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
01	00	8	12	35	32	20	18	15	12	12	15	55	25
01	12	10	8	15	20	5	5	5	5	5	2	2	2
02	00	2	18	8	2	2	0	0	0	0	0		2
02	12	2	2	2	2	2	2	5	8	2	2	2	8
03	00	5	2	2	2	0	0	2	2	5		2	2
03	12	5	5	5	8	5	5	5	8	8	5	5	5
04	00	10	5	5	15	20	18	12	12	12			
04	12	2	0	0	8	2	2	8	8	8	2	2	5
05	00	5	5	5	0	0	5	12	15	20	2	5	30
05	12		25	18	12	18	12	22	75	70	22	12	15
06	00	65	62	62	28	35	45	15	45	30	25	15	8
06	12	18	5	8	8	2	2	8	10	12	8	5	8
07	00	10	8	8	0	0	0	0	0	0	0	0	0
07	12	0	0	0	0	0	0	0	0	0	0	0	0
08	00	0	0	0	0	0	0	0	5	5	0	0	0
08	12	0	0	0	0	0	0	2	0	0	0	0	0
09	00	0	0	0	2	0	5	8	8	20		18	8
09	12	10	8	8	8	5	5	5	8	8	8	10	5
10	00	10	22	25	32	20	10	20	25	85	42	15	
10	12	10	8	5	2	0	0	0	0	2	0	0	0
11	00	0	2	50	40	10	2	2	2	2	2		
11	12		5	5	5	2	0	0	0	0	0	0	2
12	00	2	0	0	0	0	2	2	-2	5	8	8	20
12	12	22	35	22	30	28	50	20	12	10	22	15	12
13	00	8	18	15	5	5	2	2	15	10	10	5	5
13	12	25	22	50	35	35	12	2	0	0	0	0	0
14	00	0	0	0	0	0	0	5	2	2	0	2	8
14	12	8	38	40	30	28	15	8	5	10	8	5	2
15	00	0	0	0	2	10	2	0	0	5	20	28	55
15	12	50	25	8	5	5	8	5	20	8	8	45	90
16	00	25	62	10	12	60	20	20	8	5		8	10

DER form PERM 12 - 8 (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO_2
METHOD: Coulometric
SITE ADDRESS: Davis Island Coastguard- Tampa
CITY NAME:
PROJECT: Source
TIME INTERVAL OF OBS.: 1hr.
UNITS OF OBS.: PPB

1	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	1 0	4 3 6 0	0 3 5	G	0 2	1	8 1	0 1
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
4 2 4 0 1	1 4	0 8	0
23 24 25 26 27	28 29	30 31	32

DAY	ST HR	RDG 1	RDG 2	RDG 3	RDG 4	RDG 5	RDG 6	RDG 7	RDG 8	RDG 9	RDG 10	RDG 11	RDG 12
19 20	21 22	33 34 35 36	37 38 39 40	41 42 43 44	45 46 47 48	49 50 51 52	53 54 55 56	57 58 59 60	61 62 63 64	65 66 67 68	69 70 71 72	73 74 75 76	77 78 79 80
16	12	60		8	5	5	5	5	2	5	2	5	5
17	00	8	5	8	8	10	10	10	10	10	10	10	10
17	12	10	8	5	5	8	8	8	8	8	10	8	8
18	00	8	8	8	8	10	15	15	12	15	15	15	8
18	12	8	12	12	22	35	30	18	5	10	5	12	5
19	00	2	2	5	5	5	8	8	8	5	5		8
19	12	10	20	18	8	10	8	5	8	8	8	10	10
20	00	8	8	12	12	8	10	10	10	15		15	15
20	12	15	20	12	25	8	5	5	2	2	2	2	2
21	00	0	0	0	0	0	0	2	5	2			
21	12		5	5	2	5	2	2	2	0	2	2	5
22	00	5	5	2	2	2	2	2	2	5	2	5	5
22	12	5	10	10	10	18	12	5	5	5	5	5	5
23	00	5	5	5	2	5	5	5	5	8	8	8	5
23	12	5	8	8	8	18	12	18	18	10	10	5	10
24	00	10	8	10	5	5	5	5	5	5	5	5	5
24	12	5	5	2	2	5	5	5	5	5	8	5	5
25	00	5	2	2	8	8	2	2	2	8	15	5	5
25	12	5	10	10	10	8	10	5	10	10	10	8	8
26	00	8	5	5	5	2	2	5	8	10		45	40
26	12	22	18	10	10	10	10	12	10	5	2	5	5
27	00	15	25	5	2	5	12	8	10	2		2	5
27	12	2	0	2	8	0	0	0	0	0	0	2	2
28	00	2	2	2	0	0	0	0	2	5			2
28	12	2	2	0	0	0	0	0	0	0	0	2	2
29	00	0	0	2	2	2	5	8	15	55	80		55
29	12	12	12	25	25	20	15	18	20	18	25	30	18
30	00	22	40	25	22	25	25	22	22	38	35	20	12
30	12	8	8	5	5	5	8	15	12	10	10	10	10
31	00	8	10	10	10	25	30	35	45	75	40	52	55
31	12	20	15	12	12	10	8	8	8	8	8	8	8

82.5%

DER form PERM 12-8 (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO2
METHOD: Coulometric
SITE ADDRESS: Davis Island Coastguard
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1hr.
UNITS OF OBS.: PPB

	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	1 0	4 3 6 0	0 3 5	G	0 2	1	8 1	0 1
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
4 2 4 0 1	1 4	6 8	0
23 24 25 26 27	28 29	30 31	32

DAY: 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
01	00												
01	12												
02	00												
02	12												
03	00												
03	12												
04	00												
04	12												
05	00												5
05	12	12	10	12	8	10	12	10	15	25	18	10	10
06	00	10	5	5	8	8	10	12	10	20		15	20
06	12	10	45	20	8	8	20	22	15	15	10	10	15
07	00	12	12	8	8	5	2	2	2	2			
07	12	2	5	8	10	2	0	0	0	0	0	0	0
08	00	0	0	0	0	0	0	2	5	2		8	8
08	12	8	8	8	8	32	20	12	10	10	10	8	5
09	00	5	5	22	8	8	5	5	5	5	5	5	2
09	12	2	2	2	10	8	5	2	2	2	2	2	2
10	00	2	2	0	0	0	2	5	5	10	8	5	2
10	12	2	2	2	18	18	5	2	2	5	2	2	2
11	00	2	2	2	2	2	2	2	2	2	2	5	5
11	12	5	5	8	2	5	5	5	2	5	5	5	8
12	00	8	5	2	8	2	2	5	5	8	8	10	
12	12	12	15	5	5	8	8	5	8	5	5	2	0
13	00	0	0	0	2	0	2	8	10	10		8	8
13	12	10	8	8	8	32	32	8	10	10	10	12	20
14	00	15	15	22	25	35	52	22	22	42			
14	12	85	30	30	15	20	18	25	8	5	5	8	10
15	00	25	15	15	18	12	12	12	10	8		10	8
15	12	5	5	2	2	2	2	2	2	5	2	2	8
16	00	10	12	8	5	5	10	12	20	12	40	35	35

DER form PERM 12 - 8 (Feb 1970)

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC

PARAMETER OBSERVED: SO_2

METHOD: Coulometric

SITE ADDRESS: Davis Island Coastguard

CITY NAME: Tampa

PROJECT: Source

TIME INTERVAL OF OBS.: 1hr.

UNITS OF OBS.: PPB

1 (1)

STATE (2 3): 1 0

AREA (4 5 6 7): 4 3 6 0

SITE (8 9 10): 0 3 5

AGENCY (11): G

PROJECT (12 13): 0 2

TIME (14): 1

YEAR (15 16): 8 0

MONTH (17 18): 1 2

PARAMETER CODE (23 24 25 26 27): 4 2 4 0 1

METHOD (28 29): 1 4

UNITS (30 31): 0 8

DP (32): 0

DAY	ST	HR	RDG 1	RDG 2	RDG 3	RDG 4	RDG 5	RDG 6	RDG 7	RDG 8	RDG 9	RDG 10	RDG 11	RDG 12
19 20	21	22	33 34 35 36	37 38 39 40	41 42 43 44	45 46 47 48	49 50 51 52	53 54 55 56	57 58 59 60	61 62 63 64	65 66 67 68	69 70 71 72	73 74 75 76	77 78 79 80
16	1	2												
17	0	0												
17	1	2												
18	0	0												
18	1	2												
19	0	0												
19	1	2												
20	0	0												
20	1	2												
21	0	0												
21	1	2												
22	0	0												
22	1	2												
23	0	0												
23	1	2												
24	0	0												
24	1	2												
25	0	0												
25	1	2												
26	0	0												
26	1	2												
27	0	0												
27	1	2												
28	0	0												
28	1	2												
29	0	0												
29	1	2												
30	0	0												
30	1	2												
31	0	0												
31	1	2												

DER form PERM 12-8 (Feb 1976)

4682

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: HILLSBOROUGH COUNTY EPC
PARAMETER OBSERVED: SO_2
METHOD: Coulometric
SITE ADDRESS: Davis Island Coastguard
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1hr
UNITS OF OBS.: PPB

1	STATE (2-3)	AREA (4-7)	SITE (8-10)	AGENCY (11)	PROJECT (12-13)	TIME (14)	YEAR (15-16)	MONTH (17-18)
1	10	4360	035	G	02	1	80	12

PARAMETER CODE (23-27)	METHOD (28-29)	UNITS (30-31)	DP (32)
42401	14	08	0

DAY 19-20	ST HR 21-22	RDG 1 33-36	RDG 2 37-40	RDG 3 41-44	RDG 4 45-48	RDG 5 49-52	RDG 6 53-56	RDG 7 57-60	RDG 8 61-64	RDG 9 65-68	RDG 10 69-72	RDG 11 73-76	RDG 12 77-80
01	00	45	30	60	8	5	5	5	32	20	50		5
01	12	18	15	5	2	2	2	5	8	5	2	2	2
02	00	15	12	12	12	5	2	12	12	20		15	8
02	12	2	2	2	0	0	0	2	2	2	5	2	0
03	00	0	0	0	0	0	0	0	0	0			5
03	12	5	5	2	2	5	20	8	25	25	20	5	2
04	00	2	2	2	2	2	2	2	2	2			
04	12	20	5	10	55	25	10	2	0	2	0	0	0
05	00	0	0	0	0	0	0	0	0	0	10	25	25
05	12	15	8	2	0	0	0	2	15	60	22	35	28
06	00	12	5	12	22	10	15	8	5	10	15	32	25
06	12	10	5	5	8	2	0	18	38	8	40	55	50
07	00	40	5	5	2	10	28	10	5	5	18	30	30
07	12	25	20	20	30	25	25	8	25	45	30	8	5
08	00	5	2	2	30	8	8	30	55	55		12	5
08	12	5	18	5	5	0	0	5	20	8	8	15	8
09	00	5	5	5	5	8	10	5	2	0		2	2
09	12	2	0	0	0	0	0	0	0	0	28	12	8
10	00	8	8	2	0	0	0	0	0	0			
10	12	2	0	0	0	0	0	0	0	0	0	0	0
11	00	0	0	0	0	0	0	0	0	0			0
11	12	0	0			8	8	15	10	10	10	10	10
12	00	12	12	12	12	12	12	10	10	10	12	12	15
12	12	10	10	8	10	12	18	10	10	35	40	12	12
13	00	35	35	18	40	35	30	18	18	35	25	25	20
13	12	32	15	8	8	25	8	8	8	8	8	8	5
14	00	5	2	2	2	2	2	2	2	2	2	2	2
14	12	2	2	2	5	12	12	10	10	8	5	5	5
15	00	2	5	22	15	25	12	5	15	18		10	12
15	12	8	5	5	9	8	5	5	5	5	5	8	5
16	00	2	2	2	2	2							

DER form PERM 12-8 (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough Co. EPC
PARAMETER OBSERVED: SO_2
METHOD: Coulometric
SITE ADDRESS: Davis Island Coastguard -
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1 hr.
UNITS OF OBS.: PPB

	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	1 0	4 3 6 0	0 3 5	G	0 2	1	8 0	1 1
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
4 2 4 0 1	1 4	0 8	0
23 24 25 26 27	28 29	30 31	32

DAY (19 20)	ST HR (21 22)	RDG 1 (33–36)	RDG 2 (37–40)	RDG 3 (41–44)	RDG 4 (45–48)	RDG 5 (49–52)	RDG 6 (53–56)	RDG 7 (57–60)	RDG 8 (61–64)	RDG 9 (65–68)	RDG 10 (69–72)	RDG 11 (73–76)	RDG 12 (77–80)
16	12	2	2	2	2	2	5	5	8	2	2	2	2
17	00	2	0	0	5	0	0	0	0	0	0		15
17	12	2	2	0	0	10	0	0	0	0	0	0	0
18	00	0	0	0	0	0	0	0	0	0		0	0
18	12	0	0	0	0	0	2	0	2	5	2	0	0
19	00	0	0	0	0	0	0	0	0	0			
19	12	5	5	5	15	8	5	10	10	10	10	10	8
20	00	5	5	5	2	2	2	2	2	2		2	2
20	12	2	2	2	2	5	5	2	2	2	2	2	2
21	00	2	2	2	2	2	2	8	8	8	18	15	5
21	12	5	5	5	5	8	8	10	10	12	12	12	10
22	00	10	12	10	12	15	20	20	25	25	32	58	18
22	12	10	8	8	8	8	5	5	10	30	22	8	8
23	00	5	8	30	28	20	20	35	20	22	30	8	10
23	12	8	5	5	5	5	5	5	5	10	15	10	35
24	00	22	18	15	10	2	0	0	0	0	2		0
24	12	0	0	0	2	2	8	8	5	2	12	10	20
25	00	8	2	0	0	5	8	10	10	15	12	1	8
25	12	8	2	2	2	0	0	2	5	15	12	12	25
26	00	58	38	18	18	30	45	62	58	60	48	1	
26	12	8	5	2	2	0	0	0	0	0	0	0	0
27	00	0	0	0	0	0	0	0	0	0	0	0	0
27	12	0	0	0	0	0	0	0	0	0	0	0	0
28	00	0	0	0	0	0	0	0	0	0	0	0	0
28	12	0	0	0	0	0	2	5	5	10	8	8	2
29	00	2	2	5	5	2	2	10	10	10	2	2	2
29	12	2	2	2	2	2	2	2	2	5	5	8	8
30	00	8	10	10	8	5	2	2	5	5	15	28	12
30	12	5	5	10	5	5	5	5	8	8	8	5	45
~~31~~	~~00~~												
~~31~~	~~12~~												

96.9%

DER form PERM 12 - 8 (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY	PARAMETER OBSERVED	METHOD
Hillsborough Co. EPC	SO2	Coulometric

SITE ADDRESS	CITY NAME	PROJECT	TIME INTERVAL OF OBS.	UNITS OF OBS.
Davis Island Coastguard	Tampa	Source	1 hr.	PPB

1	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	1 0	4 3 6 0	0 3 5	G	0 2	1	8 0	1 1
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
4 2 4 0 1	1 4	0 8	0
23 24 25 26 27	28 29	30 31	32

DAY	ST HR	RDG 1	RDG 2	RDG 3	RDG 4	RDG 5	RDG 6	RDG 7	RDG 8	RDG 9	RDG 10	RDG 11	RDG 12
19 20	21 22	33 34 35 36	37 38 39 40	41 42 43 44	45 46 47 48	49 50 51 52	53 54 55 56	57 58 59 60	61 62 63 64	65 66 67 68	69 70 71 72	73 74 75 76	77 78 79 80
01	00	2	2	2	2	2	2	2	2	2	2	2	8
01	12	5	5	2	2	2	2	2	5	5	5	5	5
02	00	5	8	5	2	5	8	5	15	35	25	20	10
02	12	8	12	25	15	10	5	10	15	10	15	32	35
03	00	25	25	12	5	18	30	25	40	15	10		5
03	12	5	5	5	5	8	12	12	5	12	10	22	18
04	00	12	10	10	12	18	12	12	12	12		8	5
04	12	0	0	0	0	5	2	0	0	0	0	0	0
05	00	0	0	0	0	0	0	0	0	0			
05	12	5	5	5	5	5	2	2	2	2	2	0	2
06	00	2	0	0	0	0	0	0	0	2	2		2
06	12	2	2	2	5	10	5	5	5	5	8	8	10
07	00	18	5	10	20	28	5	5	8	12	22	45	75
07	12	95	30	40	20	20	22	30	12	8	8	8	8
08	00	12	12	12	8	8	10	15	12	22	55	50	25
08	12	10	15	5	2	5	8	10	5	8	2	5	8
09	00	8	5	5	5	10	15	15	10	18	10	8	15
09	12	8	5	5	5	2	2	5	8	10	5	10	12
10	00	10	12	12	10	12	10	10	20	22	12		30
10	12	28	25	30	25	20	12	10	25	22	18	18	22
11	00	32	20	40	22	20	28	32	30	58	32	38	52
11	12	30	30	42	38	48	52	25	25	45	35	15	10
12	00	30	25	10	10	5	5	12	18	40	85		
12	12		8	8	40	8	5	2	2	35	60	15	10
13	00	8	12	12	10	5	8	10	18	65	20		35
13	12	38	38	20	35	20	10	10	12	5	20	40	8
14	00	8	25	12	15	15	22	22	15	20	18		15
14	12	10	5	2	2	0	0	0	0	2	2	2	2
15	00	2	0	15	2	0	0	0	0	0	0	0	0
15	12	0	0	0	0	0	0	0	0	0	0	0	0
16	00	0	0	0	0	0	0	0	0	0	0	0	2

DER form PERM 12 - 8 (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough Co. EPC
PARAMETER OBSERVED: SO2
METHOD: Coulometric
SITE ADDRESS: Davis Island Coastguard
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1 hour
UNITS OF OBS.: PPB

(1): 1
STATE (2-3): 1 0
AREA (4-7): 4 3 6 0
SITE (8-10): 0 3 5
AGENCY (11): G
PROJECT (12-13): 0 2
TIME (14): 1
YEAR (15-16): 8 0
MONTH (17-18): 1 0
PARAMETER CODE (23-27): 4 2 4 0 1
METHOD (28-29): 1 4
UNITS (30-31): 0 8
DP (32): 0

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
16	12	8	5	2	5	10	30	48	12	5	0	12	20
17	00	8	8	18	10	15	12	10	10	2	0	0	0
17	12	0	0	0	2	0	0	0	2	5	2	8	5
18	00	0	0	0	2	20	10	0	0	0	5	55	48
18	12	65	10	8	12	5	2	2	2	2	5	2	2
19	00	0	2	5	2	0	0	0	0	0	0	0	0
19	12	0	2	2	2	2	0	0	0	0	0	0	0
20	00	0	0	0	0	0	0	0	0	0		0	0
20	12	0	0	0	0	0	0	0	0	0	0	0	0
21	00	0	0	0	0	0	0	2	45			10	15
21	12	12	15	12	12	10	10	8	8	5	2	2	2
22	00	2	2	2	2	0	0	0	2				18
22	12	8	5	5	5	5	2	5	10	5	5	10	2
23	00	5	12	8	8	2	2	5	5			2	5
23	12	0	0	0	0	0	0	0	0	2	2	2	0
24	00	0	0	0	0	0	0	0	8	5	10	5	12
24	12	5	2	2	0	0	0	0	0	0	0	0	0
25	00	0	0	0	0	0	0	0	0	0	0	0	2
25	12	0	0	0	0	0	0	0	0	0	2	2	2
26	00	2	0	0	0	0	0	0	2	5	8	18	25
26	12	20	10	12	15	30	15	25	30	25	35	15	8
27	00	30	25	75	75	80	70	60	35	10	10		18
27	12	12	25	12	2	0	0	0	2	2	10	20	42
28	00	48	42	40	38	28	12	2	0	0		0	0
28	12	0	0	0	0	0	0	0	0	0	2	2	5
29	00	10	5	5	2	2	2	5	5	8			10
29	12	25	35	20	15	5	2	0	0	18	12	22	15
30	00	10	5	8	2	2	0	0	0	0		2	0
30	12	0	0	0	0	0	0	0	0	0	0	0	0
31	00	0	0	0	0	0	0	0	0	0	0	0	0
31	12	0	0	5	2	5	2	2	2	[illegible]	[illegible]	[illegible]	[illegible]

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY	PARAMETER OBSERVED	METHOD
Hillsborough Co. EPC	SO_2	Coulometric

SITE ADDRESS	CITY NAME	PROJECT	TIME INTERVAL OF OBS.	UNITS OF OBS.
Davis Island Coastguard	Tampa	Source	1 hour	PPB

1	STATE 2 3	AREA 4 5 6 7	SITE 8 9 10	AGENCY 11	PROJECT 12 13	TIME 14	YEAR 15 16	MONTH 17 18
1	1 0	4 3 6 0	0 3 5	G	0 2	1	8 0	1 0

PARAMETER CODE 23 24 25 26 27	METHOD 28 29	UNITS 30 31	DP 32
4 2 4 0 1	1 4	0 8	0

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
01	00	0	0	0	0	0	0	0	0				8
01	12	2	2	2	18	5	0	0	0	0	0	0	0
02	00	0	2	2	0	0	0	0	0		20	15	8
02	12	0	0	0	0	0	0	2	2	2	2	2	2
03	00	5	8	8	10	40	15	20	60	32	28	8	5
03	12	2	2	0	0	0	0	0	0	0	0	0	0
04	00	0	0	2	8	12	25	30	40	20	20	35	20
04	12	15	5	2	5	10	5	2	2	2	2	2	2
05	00	0	0	0	2	2	2	2	5	12	38	0	0
05	12	0	0	0	0	0	0	0	2	2	2	2	2
06	00	20	18	12	12	15	32	30	22		10	22	20
06	12	20	8	20	18	28	18	35	25	32	38	30	8
07	00	0	0	0	0	0	0	0	0		18	22	35
07	12	20	8	18	25	50	40	25	10	2	0	0	0
08	00	0	0	0	0	0	0	0	0				18
08	12	20	8	10	25	30	30	8	25	60	30	18	10
09	00	2	0	0	0	0	0	0	0		0	2	2
09	12	2	0	5	0	0	0	0	0	8	22	10	10
10	00	2	0	0	0	0	0	0	2	2	0	2	5
10	12	5	2	8	8	8	5	5	5	2	2	2	2
11	00	2	2	2	0	0	0	0	0	10	8	10	2
11	12	2	5	5	8	0	25	40	5	2	2	0	0
12	00	0	0	0	0	0	0	0	0	0	2	2	0
12	12	0	0	0	0	2	2	0	0	0	0	0	0
13	00	0	0	0	0	0	0	0	0		5	25	20
13	12	10	5	10	15	10	8	5	5	2	2	5	8
14	00	8	15	30	8	5	5	5	15		50	8	10
14	12	2	2	2	0	5	12	12	10	8	10	5	0
15	00	2	18	25	20	32	30	25	55				12
15	12	18	10	12	8	5	5	10	8	30	40	10	15
16	00	35	40	40	25	18	12	15	85	18		8	20

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough Co. EPC
PARAMETER OBSERVED: SO_2
METHOD: Coulometric
SITE ADDRESS: Davis Island Coastguard
CITY NAME: Tampa
PROJECT: source
TIME INTERVAL OF OBS.: 1 hour
UNITS OF OBS.: PPB

	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	1 0	4 3 6 0	0 3 5	G	0 2	1	8 0	0 9
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
4 2 4 0 1	1 4	0 8	0
23 24 25 26 27	28 29	30 31	32

DAY	ST HR	RDG 1	RDG 2	RDG 3	RDG 4	RDG 5	RDG 6	RDG 7	RDC 8	RDG 9	RDG 10	RDG 11	RDG 12
19 20	21 22	33 34 35 36	37 38 39 40	41 42 43 44	45 46 47 48	49 50 51 52	53 54 55 56	57 58 59 60	61 62 63 64	65 66 67 68	69 70 71 72	73 74 75 76	77 78 79 80
16	12	12	35	5	5	5	5	2	5	8	10	18	8
17	00	0	2	0	0	0	0	0	0				0
17	12	0	0	0	0	0	0	2	2	25	8	8	8
18	00	15	10	8	5	0	0	0	0		20	85	90
18	12	15	45	40	18	12	5	5	2	5	8	15	18
19	00	50	40	30	25	12	32	45	35	20	10	8	5
19	12	5	2	2	8	20	20	10	10	5	8	8	2
20	00	2	5	8	8	15	20	30	30	18	22	10	12
20	12	20	15	25	8	8	2	5	8	5	25	45	10
21	00	8	5	5	12	10	10	18	30	55	50	5	10
21	12	8	8	20	10	5	8	10	18	8	5	8	2
22	00	15	20	15	10	5	8	10	8		5	15	5
22	12	2	2	5	5	10	8	8	5	0	0	0	0
23	00	2	65	15	5	8	5	2	0		5	2	2
23	12	5	2	2	2	12	5	2	10	10	15	18	10
24	00	8	8	8	20	22	18	25	18				5
24	12	10	32	38	40	10	2	5	10	5	5	2	12
25	00	22	12	8	12	12	15	12	22		12	10	75
25	12	75	10	30	8	8	10	2	2	2	2	25	70
26	00	15	8	20	22	15	42	22	22	15	20	5	2
26	12	0	2	8	5	5	5	20	8	8	20	25	15
27	00	12	10	12	12	12	10	5	10	25	20	55	55
27	12	110	45	10	5	10	18	5	5	18	5	5	10
28	00	10	25	12	18	15	25	35	20	15	5	15	5
28	12	2	2	2	5	5	8	2	2	2	2	2	15
29	00	8	10	10	8	2	0	0	0		2	0	2
29	12	8	10	2	2	2	10	2	0	0	0	0	0
30	00	0	0	0	0	5	10	8	8		0	0	0
30	12	2	0	2	0	0	0	2	0	0	0	0	0
~~31~~	~~00~~												

DEPARTMENT OF ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough Co. EPC
PARAMETER OBSERVED: SO_2
METHOD: Coulometric
SITE ADDRESS: Davis Island Coastguard
CITY NAME: Tampa
PROJECT: source
TIME INTERVAL OF OBS.: 1 hour
UNITS OF OBS.: PPB

1	STATE 2 3	AREA 4 5 6 7	SITE 8 9 10	AGENCY 11	PROJECT 12 13	TIME 14	YEAR 15 16	MONTH 17 18
1	10	4360	035	G	02	1	80	09

PARAMETER CODE 23 24 25 26 27	METHOD 28 29	UNITS 30 31	DP 32
42401	14	08	0

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
01	00	2	8	8	8	8	12	18	20	12	5	8	2
01	12	0	2	0	0	5	10	12	8	5	5	12	12
02	00	18	8	8	25	45	25	18	8		8	10	10
02	12	5	10	5	10	5	30	10	12	20	15	25	10
03	00	50	75	10	2	35	30	10	8				0
03	12	5	20	20	58	8	5	5	8	12	15	40	52
04	00	15	22	15	2	2	2	22	28	5		2	2
04	12	0	0	0	0	0	0	5	5	32	38	18	28
05	00	22	25	22	5	8	2	2	5	5	0	0	0
05	12	0	0	0	0	0	2	0	0	0	0	0	5
06	00	5	12	5	8	0	2	0	0	0	0	0	0
06	12	0	2	2	2	0	0	8	2	2	2	5	10
07	00	8	8	8	5	5	0	2	18	8	28	210	240
07	12	118	40	5	2	0	0	0	0	0	0	0	5
08	00	5	5	8	5	10	20	20	22		10	8	5
08	12	2	5	2	8	5	2	2	0	0	0	2	8
09	00	8	5	2	2	2	2	5	5		5	0	2
09	12	0	0	0	0	2	0	0	28	5	10	18	5
10	00	12	5	5	22	2	2	2	2				0
10	12	0	0	0	5	5	18	0	0	0	0	0	0
11	00	18	8	15	8	0	0	0	20	18		20	8
11	12	5	2	5	0	0	0	0	0	0	0	0	5
12	00	20	2	0	2	10	8	5	12	30	25	8	10
12	12	2	2	0	2	2	25	20	12	20	2	0	25
13	00	12	5	15	8	2	5	0	0	8	15	2	90
13	12	25	18	45	8	15	40	25	20	8	8	2	2
14	00	8	18	15	10	10	12	12	15	10	8	12	70
14	12	45	40	20	8	5	12	5	12	15	30	20	20
15	00	10	8	5	8	2	2	2	5		20	10	8
15	12	8	12	10	5	0	0	2	2	2	5	10	15
16	00	5	0	0	0	0	2	10	5		95	80	12

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY	PARAMETER OBSERVED	METHOD
Hillsborough County EPC	SO2	Coulometric

SITE ADDRESS	CITY NAME	PROJECT	TIME INTERVAL OF OBS.	UNITS OF OBS.
Davis Island Coastguard	Tampa	Source	1 hour	PPB

	STATE / AREA / SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	1 0 4 3 6 0 0 3 5	G	0 2	1	8 0	0 8
1	2 3 4 5 6 7 8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
4 2 4 0 1	1 4	0 8	0
23 24 25 26 27	28 29	30 31	32

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
16	12	2	2	5	5	2	5	0	0	2	2	0	0
17	00	0	0	0	0	0	0	0	2	2	2	0	5
17	12	30	18	2	0	5	8	15	2	0	0	5	10
18	00	8	8	2	8	8	5	8	8		25	20	0
18	12	0	2	0	0	2	35	8	8	10	8	10	12
19	00	10	20	5	2	5	10	10	30		10	0	0
19	12	0	0	0	2	5	5	5	2	2	0	0	0
20	00	0	2	18	18	15	15	65	30				8
20	12	10	8	8	10	8	8	2	0	0	2	0	0
21	00	0	0	0	0	10	2	0	0		0	0	0
21	12	0	0	2	8	5	5	0	20	10	12	5	75
22	00	20	10	5	5	5	12	12	10	5	2	2	2
22	12	5	10	8	50	2	0	0	12	8	45	20	10
23	00	5	0	2	85	35	18	20	10	12	20	60	80
23	12	42	60	12	5	25	22	15	5	5	10	2	5
24	00	5	10	15	18	5	2	2	2	2	25	15	12
24	12	8	15	0	2	2	10	2	5	8	10	5	15
25	00	5	5	2	5	0	0	0	0		0	2	2
25	12	0	5	5	5	10	2	5	2	8	10	8	12
26	00	8	10	18	25	12	15	5	5		15	12	8
26	12	8	5	0	8	10	5	5	5	2	0	0	10
27	00	15	20	22	12	8	15	18	20				35
27	12	10	2	2	5	5	2	5	8	10	2	10	10
28	00	8	10	20	25	20	18	12	8		35	25	45
28	12	70	52	25	10	8	0	2	2	2	2	15	10
29	00	2	5	20	20	10	10	8	8	8	0	12	15
29	12	15	0	2	5	2	5	10	2	2	20	15	8
30	00	15	8	12	8	8	12	12	15	40	20	0	0
30	12	0	0	5	5	2	5	0	5	2	12	5	5
31	00	8	10	2	0	2	2	0	2	0	0	0	0
31	12	2	0	0	0	2	5	35	12	2	0	0	0

96.9%

DER form PERM 12 - 8 (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

AGENCY	PARAMETER OBSERVED	METHOD
Hillsborough County EPC	SO_2	Coulometric

SITE ADDRESS	CITY NAME	PROJECT	TIME INTERVAL OF OBS.	UNITS OF OBS.
Davis Island Coastguard	Tampa	Source	1 hour	PPB

	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	1 0	4 3 6 0	0 3 5	G	0 2	1	8 0	0 8
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
4 2 4 0 1	1 4	0 8	0
23 24 25 26 27	28 29	30 31	32

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
01	00	5	5	5	0	0	0	0	0	0	20	102	65
01	12	25	18	5	5	5	0	2	5	10	5	5	8
02	00	2	0	0	2	5	2	2	5	5	10	2	0
02	12	2	2	2	2	0	0	5	8	10	5	10	2
03	00	0	0	0	0	0	0	0	0	0	0	0	0
03	12	0	2	0	5	2	12	0	0	0	0	0	0
04	00	2	8	2	5	2	5	5	10		20	18	0
04	12	0	2	0	0	2	0	0	0	5	2	2	12
05	00	5	8	12	22	20	15	10	2		2	5	0
05	12	2	0	2	8	10	30	15	55	2	0	2	2
06	00	2	0	0	5	8	5	2	10			5	0
06	12	2	0	5	45	35	55	8	2	2	2	0	0
07	00	2	8	8	20	20	35	35	25		2	2	2
07	12	2	5	8	2	2	5	5	5	12	35	28	8
08	00	2	0	0	0	0	0	2	8	10	12	12	5
08	12	15	12	8	10	20	15	2	0	5	10	18	15
09	00	8	20	15	12	10	5	5	5	10	12	8	2
09	12	2	5	5	5	8	5	10	8	0	0	8	10
10	00	12	10	10	15	10	10	8	22	30	15	5	0
10	12	0	2	10	2	0	20	25	2	2	2	10	15
11	00	22	12	10	0	5	12	10	15		8	0	0
11	12	0	0	2	2	18	10	5	2	2	2	8	5
12	00	8	10	18	8	2	0	2	2		2	0	35
12	12	2	0	0	0	2	5	20	22	25	10	2	0
13	00	5	5	2	0	0	0	0	0		25	75	5
13	12	0	0	0	0	0	0	0	0	0	0	10	5
14	00	0	0	0	0	0	0	0				15	45
14	12	8	0	0	10	15	10	0	0	2	12	5	12
15	00	5	10	12	12	12	25	20	18	35	15	15	10
15	12	0	10	5	18	5	0	15	2	2	2	2	2
16	00	2	5	5	5	10	8	8	8	18	10	0	2

DER form PERM 12 - 8 (Feb 1970)

DEPARTMENT OF ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO2
METHOD: Coulometric
SITE ADDRESS: Davis Island Coastguard
CITY NAME: Tampa.
PROJECT: Source
TIME INTERVAL OF OBS.: 1 Hour
UNITS OF OBS.: PPB

1 (1)
STATE: 1 0 (2 3)
AREA: 4 3 6 0 (4 5 6 7)
SITE: 0 3 5 (8 9 10)
AGENCY: G (11)
PROJECT: 0 2 (12 13)
TIME: 1 (14)
YEAR: 8 0 (15 16)
MONTH: 0 7 (17 18)
PARAMETER CODE: 4 2 4 0 1 (23 24 25 26 27)
METHOD: 1 4 (28 29)
UNITS: 0 8 (30 31)
DP: 0 (32)

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
01	00	0	0	0	0	0	0	0	0	0		0	0
01	12	0	0	0	0	0	7	5	3	0	0	0	0
02	00	0	0	5	5	5	5	13	30				12
02	12	10	7	5	8	8	15	5	2	2	2	8	12
03	00	15	15	8	8	5	8	8	5	5		0	5
03	12	8	18	22	8	2	2	0	2	5	5	5	2
04	00	2	2	2	2	5	8	10	5	8	15	18	10
04	12	10	8	12	5	5	5	5	5	5	15	10	12
05	00	10	5	5	5	5	5	5	5	5	5	5	15
05	12	22	20	18	15	8	22	8	5	8	8	8	5
06	00	5	5	5	5	5	5	2	0	0	0	0	0
06	12	2	0	0	0	0	0	0	0	0	0	0	0
07	00	0	0	0	0	0	0	0	0		5	5	5
07	12	2	2	0	0	0	5	5	2	5	0	0	0
08	00	0	0	0	0	0	5	2	2		5	5	70
08	12	55	18	18	15	8	5	8	8	5	8	5	8
09	00	8	10	10	5	8	8	12	20			2	5
09	12	2	5	32	18	20	15	5	0	0	2	2	2
10	00	2	2	0	5	2	2	2	0		0	0	0
10	12	0	0	0	0	0	0	2	2	0	0	0	0
11	00	0	0	0	0	0	0	0	0	0	0	0	0
11	12	0	5	5	5	5	5	5	2	2	2	2	0
12	00	0	0	0	0	0	0	0	0	0	0	0	0
12	12	0	0	0	0	0	0	0	0	0	0	0	0
13	00	0	0	0	0	0	0	0	0	0	0	0	0
13	12	0	0	0	0	0	0	0	0	0	0	0	0
14	00	0	0	0	0	0	0	0	0		0	0	0
14	12	0	0	0	0	0	0	0	0	0	0	0	0
15	00	0	0	0	0	0	0	0	5		0	0	0
15	12	0	0	2	8	12	5	2	5	8	0	0	0
16	00	2	5	8	2	2	5	10	8				0

DER form PERM 12 - 8 (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO2
METHOD: Coulometric
SITE ADDRESS: Davis Island Coastguard
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1 Hour
UNITS OF OBS.: PPB

1 (1)
STATE – AREA – SITE (2–10): 1 0 4 3 6 0 0 3 5
AGENCY (11): G
PROJECT (12 13): 0 2
TIME (14): 1
YEAR (15 16): 8 0
MONTH (17 18): 0 7
PARAMETER CODE (23–27): 4 2 4 0 1
METHOD (28 29): 1 4
UNITS (30 31): 0 8
DP (32): 0

DAY (19 20)	ST HR (21 22)	RDG 1 (33–36)	RDG 2 (37–40)	RDG 3 (41–44)	RDG 4 (45–48)	RDG 5 (49–52)	RDG 6 (53–56)	RDG 7 (57–60)	RDG 8 (61–64)	RDG 9 (65–68)	RDG 10 (69–72)	RDG 11 (73–76)	RDG 12 (77–80)
16	12	0	0	2	2	5	2	0	8	10	5	8	8
17	00	2	0	10	2	2	2	12	12	20			30
17	12	70	2	2	0	10	8	0	0	2	5	2	0
18	00	2	0	0	0	0	0	2	2	2	20	40	0
18	12	0	0	0	0	0	0	0	0	0	0	0	0
19	00	0	2	8	0	18	5	10	8	5	12	38	2
19	12	2	2	0	2	2	2	2	2	2	2	5	2
20	00	8	22	8	2	2	2	2	15	10	2	30	2
20	12	15	5	2	5	10	10	2	5	25	8	22	12
21	00	8	15	12	15	12	10	38	10		5	5	8
21	12	10	12	18	8	2	2	5	10	10	10	15	5
22	00	10	5	25	45	25	0	20	15		0	0	2
22	12	2	0	0	2	2	2	15	2	12	12	20	30
23	00	12	30	18	8	5	2	0	8				5
23	12	0	0	0	0	0	0	0	0	0	8	2	0
24	00	0	2	0	0	0	0	0	0	0		0	0
24	12	0	2	2	2	2	5	10	2	2	2	2	10
25	00	20	38	12	20	32	22	20	10	25	5	0	0
25	12	0	0	0	0	0	0	2	0	0	0	0	0
26	00	0	2	5	8	10	10	0	0	0	0	0	0
26	12	8	0	0	0	0	0	0	0	0	0	0	0
27	00	2	2	2	2	5	8	2	5	10	10	5	0
27	12	0	0	0	0	0	0	0	0	0	0	0	0
28	00	0	0	0	0	0	0	0	0		2	8	5
28	12	15	20	0	0	0	0	0	2	8	10	12	2
29	00	0	0	0	0	0	0	0	0		0	0	0
29	12	0	0	0	0	0	0	0	2	0	0	0	0
30	00	0	0	0	0	0	0	0	2				0
30	12	0	0	0	0	0	8	0	0	5	5	5	40
31	00	22	28	32	30	22	18	18	10		55	20	8
31	12	0	15	0	0	2	2	2	8	8	8	8	0

91.2%

DER form PERM 12-8 (Feb 1978)

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO2
METHOD: Coulometric
SITE ADDRESS: Davis Island Coastguard
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1 Hour
UNITS OF OBS.: PPB

1 (1)
STATE / AREA / SITE: 1 0 4 3 6 0 0 3 5 (2 3 4 5 6 7 8 9 10)
AGENCY: G (11)
PROJECT: 0 2 (12 13)
TIME: 1 (14)
YEAR: 8 0 (15 16)
MONTH: 0 6 (17 18)
PARAMETER CODE: 4 2 4 0 1 (23 24 25 26 27)
METHOD: 1 4 (28 29)
UNITS: 0 8 (30 31)
DP: 0 (32)

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
16	12	35	20	25	10	5	3	3	3	3	3	3	3
17	00	3	3	5	10	13	40	10	15		5	3	5
17	12	3	3	3	5	10	7	15	18	3	3	3	0
18	00	0	0	3	5	3	3	3	3			3	0
18	12	0	0	0	0	0	0	0	0	0	0	0	0
19	00	0	0	0	0	0	0	0	0	0		0	0
19	12	0	0	0	0	0	0	0	0	0	0	0	0
20	00	0	0	0	0	0	0	0	0	0		0	0
20	12	0	0	0	0	0	0	0	0	0	0	0	0
21	00	0	0	0	0	0	0	0	0	0	3	3	0
21	12	0	0	0	0	0	0	0	0	0	0	0	0
22	00	0	0	0	0	0	0	0	0	0	13	5	0
22	12	0	0	3	3	0	0	0	0	0	0	0	0
23	00	0	0	0	0	0	0	0	0		0	0	0
23	12	0	0	0	0	0	0	0	0	0	0	0	0
24	00	0	0	0	0	0	0	0	0	0		0	0
24	12	0	0	0	0	0	0	0	0	0	0	0	0
25	00	0	0	0	0	0	0	0	0			3	0
25	12	0	0	0	0	0	0	0	0	0	0	0	0
26	00	0	0	0	0	3	10	10	7		3	3	5
26	12	5	3	0	0	0	0	0	0	0	0	0	0
27	00	0	5	40	3	0	0	0	0		3	0	0
27	12	0	0	0	0	0	0	0	0	0	0	0	0
28	00	0	0	0	0	0	0	0	0	0	0	0	0
28	12	0	0	0	0	3	0	0	0	0	0	0	0
29	00	0	0	0	0	0	3	3	0	0	0	0	0
29	12	0	5	5	3	0	0	0	0	0	0	0	0
30	00	0	0	0	0	0	0	0	0		0	0	0
30	12	0	3	12	7	3	0	0	0	0	0	0	0
31	00												
31	12												

96.2%

DER form PERM 12 - 8 (Feb 1978)

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY	PARAMETER OBSERVED	METHOD
Hillsborough County EPC	SO_2	Coulometric

SITE ADDRESS	CITY NAME	PROJECT	TIME INTERVAL OF OBS.	UNITS OF OBS.
Davis Island Coastguard	Tampa	Source	1 Hour	PPB

	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	10	4360	035	G	02	1	80	06
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
42401	14	08	0
23 24 25 26 27	28 29	30 31	32

DAY	ST	HR	RDG 1	RDG 2	RDG 3	RDG 4	RDG 5	RDG 6	RDG 7	RDG 8	RDG 9	RDG 10	RDG 11	RDG 12
19 20	21	22	33 34 35 36	37 38 39 40	41 42 43 44	45 46 47 48	49 50 51 52	53 54 55 56	57 58 59 60	61 62 63 64	65 66 67 68	69 70 71 72	73 74 75 76	77 78 79 80
01	0	0	3	3	3	13	20	20	25	10	0	3	5	10
01	1	2	15	30	25	10	20	10	20	10	10	7	5	7
02	0	0	33	30	10	35	45	25	45	75		5	3	5
02	1	2	5	5	7	20	5	3	3	7	7	10	7	5
03	0	0	3	3	3	5	13	13	10	5		3	3	3
03	1	2	3	3	3	5	5	3	3	0	0	0	3	3
04	0	0	3	7	13	7	5	3	13	3				0
04	1	2	3	3	5	5	3	3	3	3	3	3	3	0
05	0	0	0	0	0	0	3	3	3	0		3	5	10
05	1	2	13	5	5	7	7	5	5	0	0	0	0	0
06	0	0	0	3	3	3	3	0	0	0		0	0	0
06	1	2	0	0	3	5	7	3	0	3	3	15	18	7
07	0	0	35	20	35	13	10	10	7	7	35	30	13	10
07	1	2	10	10	10	13	15	10	15	7	7	5	5	5
08	0	0	5	5	5	3	3	3	3	3	3	3	5	5
08	1	2	7	5	5	3	5	5	5	5	3	3	3	3
09	0	0	0	0	0	0	0	0	0	0		0	0	0
09	1	2	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0		5	5	3
10	1	2	7	5	5	3	0	0	0	0	3	0	5	5
11	0	0	3	0	0	0	0	0	0	0				3
11	1	2	5	60	10	7	10	3	0	0	0	0	0	3
12	0	0	3	3	3	3	3	10	5	23		10	7	23
12	1	2	13	10	10	10	15	15	13	5	5	10	7	5
13	0	0	5	5	5	3	3	3	3	13		0	0	0
13	1	2	0	30	40	13	7	7	13	30	30	48	38	20
14	0	0	10	7	5	5	5	25	28	23	45	45	50	43
14	1	2	43	30	33	23	35	70	53	15	13	35	30	55
15	0	0	25	28	23	15	13	18	23	15	20	10	7	5
15	1	2	5	3	5	7	5	5	5	7	18	7	7	7
16	0	0	10	10	10	7	7	15	28	13		10	3	10

DER form PERM 12 - 8 (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

1	STATE 1 0	AREA 4 3 6 0	SITE 0 3 5	AGENCY G	PROJECT 0 2	TIME 1	YEAR 8 0	MONTH 0 5	PARAMETER CODE 4 2 4 0 1	METHOD 1 4	UNITS 0 8	DP 0
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18	23 24 25 26 27	28 29	30 31	32

AGENCY: Hillsborough County EPC

PARAMETER OBSERVED: SO2

METHOD: Coulometric

SITE ADDRESS: Davis Island Coastguard

CITY NAME: Tampa

PROJECT: Source

TIME INTERVAL OF OBS.: 1 Hour

UNITS OF OBS.: PPB

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
01	00	0	0	5	5	0	0	3	3			3	3
01	12	3	3	3	10	5	3	3	3	3	3	3	3
02	00	3	13	7	5	13	18	15	13		15	12	5
02	12	5	10	30	13	20	25	13	5	5	3	5	5
03	00	5	5	5	5	5	5	5	5	7	10	7	13
03	12	5	35	50	18	15	18	10	5	5	3	0	0
04	00	0	0	0	0	0	0	0	3	5	3	0	0
04	12	3	0	0	0	0	0	0	0	0	0	0	0
05	00	0	0	0	0	0	0	0	0		3	0	3
05	12	5	10	7	3	7	3	3	3	3	3	3	3
06	00	3	5	20	5	3	3	3	3		12	18	5
06	12	5	5	5	5	5	5	5	5	3	0	0	0
07	00	0	0	0	0	0	0	0	0				3
07	12	5	3	0	0	0	0	0	0	0	0	0	0
08	00	0	0	0	0	0	3	5	5		3	3	0
08	12	0	0	0	0	0	0	0	0	0	0	0	0
09	00	0	0	0	0	0	0	0	0		0	0	0
09	12	0	0	0	0	0	3	5	5	10	7	3	5
10	00	3	0	0	0	0	0	0	5	20	13	7	5
10	12	5	3	3	7	7	3	3	0	0	3	10	10
11	00	10	10	15	13	15	13	15	18	7	5	5	5
11	12	15	7	20	15	15	7	5	3	3	10	5	3
12	00	3	3	7	18	45	13	23	13		7	7	7
12	12	10	5	5	5	7	13	7	10	5	5	5	7
13	00	5	5	10	15	28	15	18	10		40	60	35
13	12	30	38	50	15	5	13	7	5	5	3	0	3
14	00	7	7	10	5	13	20	15	23			5	7
14	12	5	5	5	7	7	7	5	7	10	12	10	7
15	00	7	5	3	7	15	7	7	3		15	23	10
15	12	3	3	3	3	3	3	3	0	0	3	10	5
16	00	10	10	13	10	13	7	10	18	25		3	5

DER form PERM 12 - 8 (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY	PARAMETER OBSERVED	METHOD
Hillsborough County EPC	SO2	Coulometric

SITE ADDRESS	CITY NAME	PROJECT	TIME INTERVAL OF OBS.	UNITS OF OBS.
Davis Island Coastguard	Tampa	Source	1 Hour	PPB

1	STATE 2 3	AREA 4 5 6 7	SITE 8 9 10	AGENCY 11	PROJECT 12 13	TIME 14	YEAR 15 16	MONTH 17 18
1	10	4360	035	G	02	1	80	05

PARAMETER CODE 23 24 25 26 27	METHOD 28 29	UNITS 30 31	DP 32
42401	14	08	0

DAY 19 20	ST 21	HR 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
16	1	2	5	3	3	3	3	0	0	0	0	3	3	3
17	0	0	3	3	3	3	3	3	3	0	3	3	0	0
17	1	2	3	38	18	3	3	0	3	3	0	0	3	3
18	0	0	3	3	3	3	0	0	0	0	0	15	25	25
18	1	2	28	18	13	5	7	10	7	5	5	3	3	0
19	0	0	0	3	3	3	3	3	10	5		10	5	3
19	1	2	3	3	35	13	10	3	0	0	0	0	3	5
20	0	0	5	3	5	5	3	0	0	0		0	0	0
20	1	2	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0				90
21	1	2	265	105	45	15	5	5	5	10	15	10	13	7
22	0	0	3	0	0	15	13	10	10	15		10	13	10
22	1	2	7	3	3	3	3	3	3	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0		3	0
23	1	2	0	0	0	7	5	5	3	3	5	3	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	1	2	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	1	2	0	0	0	0	0	0	0	0	3	5	3	3
26	0	0	0	0	0	0	0	0	3	3	0	0	0	0
26	1	2	5	3	0	0	0	0	0	0	0	3	7	10
27	0	0	13	10	5	5	7	10	10	90		25	25	20
27	1	2	35	38	33	40	45	43	43	10	5	25	5	18
28	0	0	28	58	38	23	20	23	15	5			3	10
28	1	2	15	20	10	7	10	13	5	7	10	7	7	5
29	0	0	3	7	10	20	20	25	28	15		3	3	3
29	1	2	0	3	0	5	5	3	5	10	10	13	18	10
30	0	0	20	20	28	20	25	35	25	7		0	0	3
30	1	2	10	10	5	5	3	3	25	3	0	0	0	0
31	0	0	25	33	30	23	10	13	13	35	20	10	5	7
31	1	2	20	30	25	28	25	45	28	5	3	5	5	10

96.4%

DER form PERM 12 - 8 (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO2
METHOD: Pulse Fluorescence
SITE ADDRESS: Hooker's Pt. -
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1hr.
UNITS OF OBS.: PPB

	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	10	4360	051	G	02	1	81	05
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
42401	20	08	0
23 24 25 26 27	28 29	30 31	32

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
1[illegible]	12												
1[illegible]	00												
17	12				12	5	0	0	0	0	2	2	2
18	00	5	5	5	2	2	0	0	0	15	18	20	48
18	12	20	5	2	5	18	22	8	5	2	2	2	2
19	00	2	5	5	5	2	2	5	5	5	2	2	2
19	12	2	2	2	2	2	2	2	2	2	2	2	2
20	00	2	0	0	2	2	2	2	2	2	2	2	2
20	12	2	2	2	2	2	2	2	2	8	2	5	5
21	00	2	2	2	2	2	2	2	5	15	10	5	5
21	12	5	5	5	5	5	12	5	2	2	5	5	5
22	00	8	12	8	5	2	5	5	5	8	8	8	5
22	12	5	2	2	2	2	2	2	2	18	8	2	8
23	00	5	2	5	5	5	5	5	10	10	10	12	18
23	12	10	5	2	8	2	2	2	2	2	5	5	2
24	00	2	2	5	8	5	5	8	15	20	5	20	15
24	12	8	8	10	5	2	2	10	8	2	8	10	28
25	00	8	5	5	5	2	0	0	2	2	2	0	0
25	12	10	2	2	8	2	2	5	0	8	8	10	20
26	00	28	8	12	10	25	25	22	25	10	8	5	2
26	12	0	0	5	10	12	10	2	0	0	2	2	2
27	00	5	5	5	2	10	5	20	8	5		0	0
27	12	0	0	0	0	0	0	0	0	2	2	2	2
28	00	2	2	0	0	0	0	0	0	2	2	0	2
28	12	2	0	0	2	2	2	2	0	0	0	0	0
29	00	0	0	0	0	0	0	0	0	2	2	2	2
29	12	2	0	0	2	2	2	2	2	0	0	0	2
30	00	2	2	2	2	2	2	2	2	5	18	12	15
30	12	10	20	15	5	5	5	5	5	5	2	2	5
31	00	8	2	2	2	2	0	0	0	2	8	9	5
31	12	2	0	0	0	0	2	5	2	10	2	2	8

DER form PERM 13-8 (Feb 1976)

53.2%

AGENCY	PARAMETER OBSERVED	METHOD
HILLSBOROUGH COUNTY ENVIRONMENTAL PROTECTION COMM.	SO_2	Pulse Fluorescence

SITE ADDRESS	CITY NAME	PROJECT	TIME INTERVAL OF OBS.	UNITS OF OBS.
Hooker's Pt. -	Tampa	Source	1hr.	PPB

	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	1 0	4 3 6 0	0 5 7	G	0 2	1	8 1	0 5
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
4 2 4 0 1	2 0	0 8	0
23 24 25 26 27	28 29	30 31	32

DAY	ST	HR	RDG 1	RDG 2	RDG 3	RDG 4	RDG 5	RDG 6	RDG 7	RDG 8	RDG 9	RDG 10	RDG 11	RDG 12
19 20	21	22	33 34 35 36	37 38 39 40	41 42 43 44	45 46 47 48	49 50 51 52	53 54 55 56	57 58 59 60	61 62 63 64	65 66 67 68	69 70 71 72	73 74 75 76	77 78 79 80
01	0	0												
01	1	2												
02	0	0												
02	1	2												
03	0	0												
03	1	2												
04	0	0												
04	1	2												
05	0	0												
05	1	2												
06	0	0												
06	1	2												
07	0	0												
07	1	2												
08	0	0												
08	1	2												
09	0	0												
09	1	2												
10	0	0												
10	1	2												
11	0	0												
11	1	2												
12	0	0												
12	1	2			8	15	8	8	5	2	2	0	0	0
13	0	0	2	5	0	8	50	42	12	10	10	5	10	32
13	1	2	22	12	10		5	42	10	5	8	8	12	15
14	0	0	5	2	2	2	2	5	5	5	10	8	2	2
14	1	2	2			5	0	0	0	5	5			
15	0	0												
15	1	2												
16	0	0												

DER form PERM 12 - 8 (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

1	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH	PARAMETER CODE	METHOD	UNITS	DP
1	1 0	4 3 6 0	0 5 1	G	0 2	1	8 1	0 4	4 2 4 0 1	2 0	0 8	0

AGENCY: HILLSBOROUGH COUNTY ENVIRONMENTAL PROTECTION COMM.

PARAMETER OBSERVED: SO_2

METHOD: PULSE FLUORESCENCE

SITE ADDRESS: HOOKER'S POINT

CITY NAME: TAMPA

PROJECT: SOURCE

TIME INTERVAL OF OBS.: 1 HR.

UNITS OF OBS.: PPB.

DAY 19 20	ST HR 21 22	RDG 1 33–36	RDG 2 37–40	RDG 3 41–44	RDG 4 45–48	RDG 5 49–52	RDG 6 53–56	RDG 7 57–60	RDG 8 61–64	RDG 9 65–68	RDG 10 69–72	RDG 11 73–76	RDG 12 77–80
16	12	5	2	5	5	5	5	2	2	2	2	2	2
17	00	2	5	5	10	8	5	2	8	8	8	8	10
17	12	5	2	2	2	2	2	2	5	5	2	2	2
18	00	2	2	2	0	0	0	2	5	8	8	5	5
18	12	2	2	2	15	20	8	2	2	2	2	2	2
19	00	2	5	2	2	2	2	2	5	8	2	40	35
19	12	22	18	12	8	2	5	5	2	0	0	0	0
20	00	2	2	2	2	0	0	0	0	0	0	0	5
20	12	2	15	15	2	2	0	0	0	0	0	0	0
21	00	0	0	0	2	2	2	0	0	5	2	2	2
21	12	0	0	5	2	2	2	2	2	0	0	0	0
22	00	0	2	2	2	5	8	5	18	15	60	30	5
22	12	8	5	2	2	8	5	8	2	2	2	45	22
23	00	10	8	5	10	12	10	10	20	22	10	45	12
23	12	8	5	5	15	8	5	2	5	5	2	2	2
24	00	2	2	2	0	0	0	0	0	2	10	5	5
24	12	10		0	0	0	0	0	0	0	0	0	0
25	00	0	2	2	2	110	38	40	42	22	18	10	18
25	12	10	5	2	2	0	0	0	2	2	5	8	15
26	00	62	15	5	2	5	5	5	8	10	5	5	8
26	12	5	5	2	2	2	2	5	2	5	2	2	2
27	00	2	2	2	2	8	5	5	5	5	5		8
~~27~~	~~12~~	~~12~~	~~5~~	~~5~~	~~5~~	~~5~~	~~5~~	~~5~~	~~8~~	~~8~~	~~12~~	~~5~~	~~15~~
~~28~~	~~00~~	~~12~~	~~10~~	~~20~~	~~12~~	~~8~~	~~0~~	~~10~~	~~12~~	~~15~~	~~18~~	~~0~~	~~10~~
~~28~~	~~12~~	~~10~~	~~20~~	~~25~~	~~12~~	~~10~~	~~18~~	~~8~~	~~8~~	~~5~~	~~10~~	~~8~~	~~5~~
~~29~~	~~00~~	~~5~~	~~5~~	~~5~~	~~5~~	~~5~~	~~2~~	~~2~~	~~5~~	~~8~~	~~12~~	~~5~~	[illegible]
~~29~~	~~12~~	~~0~~	~~0~~	~~2~~	~~2~~	~~2~~	~~2~~	~~2~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~
~~30~~	~~00~~	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	~~2~~	~~8~~	~~2~~	~~2~~	[illegible]	[illegible]
~~30~~	~~12~~	~~2~~	~~2~~	~~5~~	~~0~~	~~0~~	[illegible]	[illegible]	[illegible]	~~0~~	~~0~~	~~0~~	~~0~~
~~31~~	~~00~~												
~~31~~	~~12~~												

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: HILLSBOROUGH COUNTY ENVIRONMENTAL PROTECTION COMM.
PARAMETER OBSERVED: SO_2
METHOD: PULSE FLUORESCENCE
SITE ADDRESS: HOOKER'S POINT
CITY NAME: TAMPA
PROJECT: SOURCE
TIME INTERVAL OF OBS.: 1 HR.
UNITS OF OBS.: PPB

1: 1
STATE (2 3): 1 0
AREA (4 5 6 7): 4 3 6 0
SITE (8 9 10): 0 5 1
AGENCY (11): G
PROJECT (12 13): 0 2
TIME (14): 1
YEAR (15 16): 8 1
MONTH (17 18): 0 4
PARAMETER CODE (23 24 25 26 27): 4 2 4 0 1
METHOD (28 29): 2 0
UNITS (30 31): 0 8
DP (32): 0

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
01	00	5	5	2	2	2	0	0	0	0	2	2	0
01	12	0	0	2	10	10	2	0	0	0	5	8	2
02	00	0	0	0	0	0	0	2	8	8	5	2	2
02	12	5	2	2	2	2	10	5	8	45	15	70	20
03	00	8	2	2	0	2	2	2	5	8	8	10	8
03	12	8	8	15	12	25	22	18	10	20	12	12	12
04	00	22	8	5	5	2	2	0	0	10	35	35	18
04	12	20	22	5	5	12	5	12	2	2	0	2	5
05	00	2	0	0	2	0	0	0	0	5	12	2	2
05	12	2	0	0	0	0	0	0	0		5	2	0
06	00	0	0	0	12	52	90	105	55	40	45	15	8
06	12	2	2	8	0	0	0	0	5	10	8	5	2
07	00	0	0	0	0	0	2	0	2	2	2	2	0
07	12	0	0	0	0	0	0	0	0	0	2	0	2
08	00	2	2	0	0	0	0	0	2	5	2	2	2
08	12	2	2	2	2	2	2	2	2	0	0	0	0
09	00	0	0	0	0	0	0	2	5	8	8	5	8
09	12	8	8	10	10	5	5	5	5	2	8	10	10
10	00	8	5	12	15	18	25	12	10	12	8	5	5
10	12	5	8	12	10	12	22	15	8	8	10	18	20
11	00	10	8	12	20	20	18	10	8	10	25	22	5
11	12	5	5	2	2	2	2	2	2	2	2	2	2
12	00	2	2	2	2	2	2	2	5	8	8	5	10
12	12	10	8	8	5	5	12	8	5	2	8	2	5
13	00	5	5	8	28	10	5	2	2	8		5	5
13	12	5	5	2	0	0	0	2	2	2	8	35	10
14	00	10	8	8	5	5	2	5	5	10			5
14	12	5	5	2	5	18	20	12	8	5	8	12	8
15	00	5	5	10	10	5	5	2	5	8	8	5	5
15	12	5	5	8	8	8	8	5	5	5	2	2	2
16	00	5	5	5	5	8	8	5	5	8	8	5	5

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO2
METHOD: Pulse Fluorescence
SITE ADDRESS: Hooker's Pt. –
CITY NAME: Tampa
PROJECT: Source.
TIME INTERVAL OF OBS.: 1hr.
UNITS OF OBS.: PPB

1 (1)
STATE (2 3): 1 0
AREA (4 5 6 7): 4 3 6 0
SITE (8 9 10): 0 5 1
AGENCY (11): G
PROJECT (12 13): 0 2
TIME (14): 1
YEAR (15 16): 8 1
MONTH (17 18): 0 3
PARAMETER CODE (23 24 25 26 27): 4 2 4 0 1
METHOD (28 29): 2 0
UNITS (30 31): 0 8
DP (32): 0

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
16	12	0	0	0	0	0	0	0	0	0	0	0	0
17	00	0	2	5	25	32	45	35	25			10	10
17	12	5	2	2	2	18	10	5	2	2	2	8	25
18	00	25	2	5	2	0	0	0	0	0	0	0	0
18	12	0	0	0	0	0	0	0	0	0	0	0	0
19	00												2
19	12	2	2	0	0	0	2	5	5	2	0	0	0
20	00	0	0	0	0	0	0	18	12	2	2	2	0
20	12	5	10	2	2	2	0	0	0	0	0	2	10
21	00	2	0	2	2	5	5	2	2	5	8	18	12
21	12	18	30	12	8	12	12	10	2	2	2	2	2
22	00	2	2	2	2	2	8	10	5	5	2	2	0
22	12	2	2	2	2	2	0	0	0	0	0	0	0
23	00	0	0	2	2	0	0	0	2	2	2	5	2
23	12	2	2	2	2	0	8	2	2	2	2	2	2
24	00	2	2	2	2	2	2	2	2	10	15	18	10
24	12	2	2	2	15	2	2	2	2	2	2	2	2
25	00	2	5	8	5	2	2	2	2	15	15	8	2
25	12	5	5	8	8	5	5	12	2	5	15	2	5
26	00	5	20	22	22	12	15	20	15	15	18	8	
~~26~~	~~12~~												
~~27~~	~~00~~												
~~27~~	~~12~~												
~~28~~	~~00~~												
~~28~~	~~12~~												
~~29~~	~~00~~												
~~29~~	~~12~~												
30	00												
30	12		2	0	0	0	2	2	0	0	0	0	0
31	00	0	0	0	0	0	0	0	0	0			
31	12		0	0	2	10	12	2	2	2	2	2	5

DEPARTMENT OF ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO_2
METHOD: Pulse Fluorescence
SITE ADDRESS: Hooker's Pt. —
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1hr.
UNITS OF OBS.: PPB

1 (1)
STATE (2-3): 1 0
AREA (4-7): 4 3 6 0
SITE (8-10): 0 5 1
AGENCY (11): G
PROJECT (12-13): 0 2
TIME (14): 1
YEAR (15-16): 8 1
MONTH (17-18): 0 3
PARAMETER CODE (23-27): 4 2 4 0 1
METHOD (28-29): 2 0
UNITS (30-31): 0 8
DP (32): 0

DAY (19-20)	ST HR (21-22)	RDG 1 (33-36)	RDG 2 (37-40)	RDG 3 (41-44)	RDG 4 (45-48)	RDG 5 (49-52)	RDG 6 (53-56)	RDG 7 (57-60)	RDG 8 (61-64)	RDG 9 (65-68)	RDG 10 (69-72)	RDG 11 (73-76)	RDG 12 (77-80)
01	00	2	0	0	0	0	0	0	0	0	2	2	2
01	12	2	0	0	0	5	2	2	0	0	0	0	0
02	00	0	0	0	0	0	0	0	0	0	5		15
02	12	2	0	0	2	2	0	0	0	0	0	0	0
03	00	5	2	2	2	22	60	55	52	12		5	8
03	12	8	5	5	5	5	18	10	2	5	25	30	10
04	00	10	8	10	10	10	12	8	8	5	12	8	8
04	12	20	8	5	5	2	2	2	2	2	2	2	2
05	00	2	2	2	2	2	2	0	0	0	0	2	5
05	12	2	5	2	0	0	0	0	0	0	0	0	2
06	00	2	2	0	2	2	2	2	5	15	15	15	5
06	12	5	5	5	15	8	12	2	5	2	2	2	0
07	00	0	0	0	0	0	0	2	8	5	5	15	18
07	12	10	12	8	12	28	10	10	10	48	15	10	8
08	00	8	18	8	5	5	5	2	2	2	5	5	5
08	12	2	2	5	2	2	2	2	5	20	38	22	10
09	00	8	5	10	8	10	15	12	12	10	8	8	8
09	12	22	12	5	5	5	8	5	2	2	2	5	28
10	00	15	15	10	5	5	2	2	2	22	18	20	10
10	12	8	8	10	5	5	5	5	2	2	5	2	2
11	00	2	5	2	8	18	5	25	48	20	12	12	18
11	12	5	5	15	8	5	8	5	8	5	5	2	2
12	00	2	2	2	2	2	28	30	8	12	10	5	5
12	12	5	5	5	5	8	10	8	5	5	5	18	15
13	00	30	15	15	12	12	20	20	18	22	30	30	22
13	12	25	25	18	25	25	15	12	15	12	8	10	10
14	00	8	5	5	5	5	2	2	20	52	22	20	30
14	12	20	15	18	8	8	5	5	5	5	2	2	2
15	00	0	2	5	5	5	5	5	12	15	8	15	5
15	12	15	5	2	2	5	2	2	15	15	5	5	2
16	00	0	0	0	0	0	0	0	0	0	0	2	2

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO2
METHOD: Pulse Fluorescence
SITE ADDRESS: Hooker's Pt. -
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1hr.
UNITS OF OBS.: PPB

	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	1 0	4 3 6 0 0	5 1	G	8 2	1	8 1	0 2
1	2 3	4 5 6 7 8	9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
4 2 4 0 1	2 0	0 8	0
23 24 25 26 27	28 29	30 31	32

DAY	ST HR	RDG 1	RDG 2	RDG 3	RDG 4	RDG 5	RDG 6	RDG 7	RDG 8	RDG 9	RDG 10	RDG 11	RDG 12
19 20	21 22	33 34 35 36	37 38 39 40	41 42 43 44	45 46 47 48	49 50 51 52	53 54 55 56	57 58 59 60	61 62 63 64	65 66 67 68	69 70 71 72	73 74 75 76	77 78 79 80
16	12	10	10		10	15	15	12	5	2	2	0	0
17	00	0	0	0	2	2	2	2	2	2	5	5	5
17	12	5			2	2	5	5	5	2	2	2	5
18	00	5	5	2	2	2	2	2	2	2	5	8	5
18	12	5	2	0	0	0	5	5	2	2	5	5	5
19	00	8	12	10	8	5	5	5	5	25	8	8	2
19	12	5	5		2	2	18	15	10	2	0	0	0
20	00	2	2	2	5	8	2	0	0	2	2	2	2
20	12	0	0	2	0	0	0	0	0	0	0	0	0
21	00	2	5	2	0	0	0	0	0	5	22	20	10
21	12	8	2	0	2	25	18	20	10	5	2	2	2
22	00	0	0	0	0	0	0	0	0	2	2	15	12
22	12	8	8	5	2	0	0	2	0	0	0	0	0
23	00	0	0	0	0	0	0	0	0	0	0	0	0
23	12	10	0	5	5	5	0	0	0	5	2	0	0
24	00	5	5	2	0	0	0	0	5	18	5	2	2
24	12	2	2	2	2	10	5	2	5	5	8	8	5
25	00	2	2	2	2	2	8	30	42	145	12		8
25	12	5	5	10	15	8	15	15	8	5	5	5	10
26	00	2	12	10	10	15	10	5	10	8	8	18	15
26	12	10	10		40	28	12	8	2	0	0	0	0
27	00	0	2	2	0	0	0	0	2	10	48	60	53
27	12	10	2	2	5	15	10	15	8	5	18	10	10
28	00	5	5	5	5	8	8	2	0	2	10	8	15
28	12	5	5	2	2	2	10	10	5	5	5	2	2
29	00												
29	12												
30	00												
30	12												
31	00												
31	12												

00 09

DEPARTMENT OF ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO_2
METHOD: Pulse Fluorescence
SITE ADDRESS: Hooker's Pt. -
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1 hr.
UNITS OF OBS.: PPB

1 (1)
STATE: 1 0 (2 3)
AREA: 4 3 6 0 (4 5 6 7)
SITE: 0 5 1 (8 9 10)
AGENCY: G (11)
PROJECT: 0 2 (12 13)
TIME: 1 (14)
YEAR: 8 1 (15 16)
MONTH: 0 2 (17 18)
PARAMETER CODE: 4 2 4 0 1 (23 24 25 26 27)
METHOD: 2 0 (28 29)
UNITS: 0 8 (30 31)
DP: 0 (32)

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
01	00	5	5	8	20	8	8	10	8	12	25	122	35
01	12	8	2	10	18	2	5	0	0	0	0	0	0
02	00	0	8	22	5	0	2	0	0	0	0	0	0
02	12	0	0	0	0	0	0	2	8	2	5	0	10
03	00	8	2	8	132	60	38	65	52	70	55	38	22
03	12	10	10	8	5	5	5	5	5	5	5	8	48
04	00	15	60	22	5	8	8	8	55	20	12	8	25
04	12	28	25	20	8	8	5	5	5	5	5	2	15
05	00	20	8	38	95	90	10	5	12	12	10	5	
05	12	2	2	5	5	5	8	15	12	15	32	28	15
06	00	8	10	10	10	10	10	8	10	20	18	22	30
06	12	20	10	10	8	0	0	2	2	20	30	5	2
07	00	5	5	10	2	0	0	0	0	0	0	0	0
07	12	0	0	0	0	0	0	0	0	0	0	0	0
08	00	0	0	0	0	0	0	20	45	22	5	2	2
08	12	2	0	0	2	2	2	5	5	0	0	0	0
09	00	0	2	22	5	2	2	2	2	2	5	5	5
09	12	8	5	5	5	5	5	2	2	5	2	2	0
10	00	0	0	2	2	5	5	8	15	60		10	8
10	12	8	5	2	2	2	0	0	0	2	0	2	0
11	00	0	0	12	28	10	2	0	0	0	0	0	0
11	12	0	0	2	5	5	2	2	2	2	2	12	78
12	00	72	70	112	58	10	2	2	2	5	5	5	5
12	12		5	5	5	5	5	2	0	0	0	0	0
13	00	0	0	0	0	0	0	0	0	0	2	2	2
13	12	2	2	2	2	2	0	10	10	5	2	10	2
14	00	2	0	0	0	0	0	0	0	0	0	0	0
14	12	0	0	2	2	2	0	0	0	0	0	0	0
15	00	0	0	0	0	0	0	0	0	0	0	0	0
15	12	0	0	0	0	0	2	2	0	0	0	0	0
16	00	0	0	2	2	2	2	2	2	8	12	12	15

ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

AGENCY	PARAMETER OBSERVED	METHOD
Hillsborough County E.P.C.	SO_2	Pulse Fluorescence

SITE ADDRESS	CITY NAME	PROJECT	TIME INTERVAL OF OBS.	UNITS OF OBS.
Hooker's Pt. –	Tampa	Source	1hr.	PPB

	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	10	4360	051	G	02	1	81	01
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
42401	20	08	0
23 24 25 26 27	28 29	30 31	32

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
01	00	0	0	2	2	2	2	2	2	0	0	0	2
01	12	5	5	0	0	0	2	2	0	0	0	0	0
02	00	0	0	0	0	0	5	18	8	20	28	30	22
02	12		10	5	8	38	30	15	5	8	10	10	5
03	00	5	2	0	0	2	2	0	0	2	5	10	35
03	12	160	95	50	20	15	12	5	5	2	2	5	2
04	00	2	2	5	5	5	2	2	2	2	0	0	2
04	12	5	8	2	2	5	8	8	2	2	2	2	5
05	00	22	120	35	88	58	8	5	5	5	5	5	5
05	12	5	5	2	5	5	2	2	2	2	2	0	0
06	00	0	0	0	0	0	0	0	2	5	15	20	28
06	12	5	42	12	2	5	10	12	8	8	8	8	10
07	00	8	5	2	0	0	0	0	0	0	0	0	0
07	12	0	0	5	8	2	0	0	0	0	0	2	2
08	00	20	30	18	15	62	40	35	78	65	28	12	20
08	12	8	8	8	8	18	15	12	8	5	5	5	5
09	00	12	35	8	5	20	12	8	8	40	10	10	10
09	12	8	2	0	10	2	2	2	0	0	0	0	2
10	00	5	38	10	12	10	10	8	10	10	10	12	18
10	12	10	5	5	12	22	10	5	5	8	12	10	2
11	00	2	2	2	2	5	2	12	48	65	40	38	15
11	12	5	5	8	3	5	8	5	5	5	2	2	2
12	00	2	5	32	35	10	8	8	8	15	20	25	28
12	12	32	25	20		10	10	5	5	40	55	70	105
13	00	135	52	65	62	35	10	8	12	12	8	5	25
13	12	70	48	5	2	30	38	8	10	8	5	5	12
14	00	10	8	5	2	5	2	2	18	35	55	45	20
14	12			8	8	8	8	8	12	12	5	18	8
15	00	8	18	5	12	72	15	12	8	8	5	8	8
15	12	5	2	2	2	0	0	0	0	0	0	2	2
16	00	5	8	5	5	5	8	8	10	28	10	12	10

DER form PERM 12 - 8 (Feb 1976)

98.7%

DEPARTMENT OF ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

AGENCY	PARAMETER OBSERVED	METHOD
Hillsborough County EPC	SO_2	Pulse Fluorescence

SITE ADDRESS	CITY NAME	PROJECT	TIME INTERVAL OF OBS.	UNITS OF OBS.
Hooker's Pt. -	Tampa	Source	1 hr.	PPB

	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	1 0	4 3 6 0	0 5 1	G	0 2	1	8 1	0 1
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
4 2 4 0 1	2 0	0 8	0
23 24 25 26 27	28 29	30 31	32

DAY	ST	HR	RDG 1	RDG 2	RDG 3	RDG 4	RDG 5	RDG 6	RDG 7	RDG 8	RDG 9	RDG 10	RDG 11	RDG 12
19 20	21	22	33 34 35 36	37 38 39 40	41 42 43 44	45 46 47 48	49 50 51 52	53 54 55 56	57 58 59 60	61 62 63 64	65 66 67 68	69 70 71 72	73 74 75 76	77 78 79 80
16	1	2	35	25	8	5	2	2	2	0	0	0	0	0
17	0	0	0	2	5	8	12	10	8	8	20	22	25	18
17	1	2	18	18	12	22	30	12	8	8	5	5	8	10
18	0	0	62	55	115	108	22	25	12	66	110	88	75	18
18	1	2	10	12	10	18	25	32	28	12	5	5	5	5
19	0	0	2	2	2	5	5	8	18	10	12	8	12	8
19	1	2	8	20	22	5	8	5	2	0	2	0	0	0
20	0	0	0	0	0	0	0	0	2	5	8	2	5	12
20	1	2	15	20	10	20	10	8	5	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	5	8
21	1	2	5	2	2	2	2	0	0	0	0	0	0	0
22	0	0	0	0	2	0	8	12	12	18	20	30	20	5
22	1	2	5	5	5	8	10	10	2	0	0	2	2	0
23	0	0	0	0	0	0	0	2	10	8	10	12	8	15
23	1	2	5	5	5	5	10	5	10	10	8	5	2	2
24	0	0	0	0	0	2	5	2	10	10	40	55	18	8
24	1	2	10	8	0	0	0	0	0	0	0	2	8	2
25	0	0	5	2	2	2	2	5	10	2	8	10	8	12
25	1	2	20	2	2	2	5	8	5	5	5	5	8	8
26	0	0	8	2	2	0	0	0	0	2	8	20	25	20
26	1	2	20	18	12	10	8	8	5	2	2	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	1	2	5											
28	0	0												0
28	1	2	2	2	2	2	2	2	2	0	0	0	0	0
29	0	0	0	0	15	92	45	10	8	10	40	28	12	12
29	1	2		12	12	10	10	10	10	25	20	18	20	10
30	0	0	18	28	15	10	8	15	15	10	32	35	20	10
30	1	2	5	2	2	2	2	2	5	2	2	0	0	10
31	0	0	8	8	12	15	10	10	8	5	5	8	8	8
31	1	2	8	8	8	5	5	5	5	5	2	2	5	5

DER form PERM 12-8 (Feb 1979)

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

1	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	1 0	4 3 6 0	0 5 1	G	0 2	1	8 0	1 2
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
4 2 4 0 1	2 0	0 8	0
23 24 25 26 27	28 29	30 31	32

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO2
METHOD: Pulse Fluorescence
SITE ADDRESS: Hooker's Point
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1 Hour
UNITS OF OBS.: P.P.B.

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
16	12	0	2	2	2	0	0	0	0	0	0	0	0
17	00	0	0	0	0	0	0	2	5	8	10	10	5
17	12	2	5	5	5	5	5	5	5	10	10	10	8
18	00	5	5	2	2	2	2	2	2	5	8	5	5
18	12	15	18	10	15	8	15	15	12	15	25	30	12
19	00	10	8	5	5	5	8	15	25	20	28	22	8
19	12	8	18	25	8	8	5	5	8	8	32	8	5
20	00	5	8	5	12	8	2	2	2	2	2	2	2
20	12	2	5	2	2	0	0	0	0	0	0	0	0
21	00	0	0	0	0	0	0	0	0	0	0	0	0
21	12	0	2	0	0	0	0	0	0	0	0	0	0
22	00	0	0	0	0	0	0	0	0	0	0	0	0
22	12	0	2	0	0	2	2	2	0	0	0	0	0
23	00	0	0	0	0	0	0	0	0	0	2	10	8
23	12	2	2	5	8	12	12	8	5	2	32	8	8
24	00	5	5	2	2	2	2	2	8	5	12	45	18
24	12	5		8	5	5	2	5	2	2	2	5	2
25	00	2	2	2	2	2	2	2	2	5	30	42	28
25	12	22	20	5	5	5	5	2	2	2	5	10	30
26	00	78	72	62	42	45	55	40	100	92	8	5	5
26	12	2	5	8	10	2	5	5	5	5	22	5	2
27	00	8	5	8	5	12	2	12	12	18	5	8	8
27	12	5	2	0	0	0	5	5	5	12	62	25	18
28	00	12	15	2	0	0	12	5	8	8	8	10	5
28	12	5	5	2	0	0	0	0	2	0	5	2	0
29	00	0	2	5	0	2	5	5	5	8			
~~29~~	~~12~~												
~~30~~	~~00~~												
30	12		5	8	5	8	5	5	5	5	5	5	15
31	00	15	10	8	5	10	10	10	18	28	22	28	15
31	12	22	20	10	8	15	12	8	5	5	5	5	2

94.6%

DEPARTMENT OF ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	10	4360	0051	G	02	1	80	12

AGENCY	PARAMETER OBSERVED	METHOD
Hillsborough County EPC	SO_2	Pulse Fluorescence

SITE ADDRESS	CITY NAME	PROJECT	TIME INTERVAL OF OBS.	UNITS OF OBS.
Hooker's Pt	Tampa	Source	1 hour	PPB

PARAMETER CODE	METHOD	UNITS	DP
42401	20	08	0

DAY	ST HR	RDG 1	RDG 2	RDG 3	RDG 4	RDG 5	RDG 6	RDG 7	RDG 8	RDG 9	RDG 10	RDG 11	RDG 12
01	00	2	0	0	0	0	2	0	0	5	5	2	2
01	12	8	28	5	5	2	5	2	2	8	10	10	10
02	00	15	18	8	5	8	8	8	12	18	18	15	15
02	12	8	5	5	2	2	2	2	2	0	5	8	2
03	00	0	0	5	5	2	2	5	15	190	18	5	15
03	12	8	5	8	2	2	8	5	2	2	2	2	0
04	00	0	0	0	0	0	0	0	0	2	2	8	2
04	12	2	2	2	2	2	5	5	2	2	2	0	2
05	00	0	0	0	0	0	0	0	0	2	2	2	5
05	12	10	12	5	5	5	5	2	2	5	2	5	8
06	00	8	8	8	12	8	12	8	5	8	8	8	5
06	12	2	2	2	2	5	2	10	2	2	2	15	5
07	00	12	15	8	2	2	5	2	2	2	5	8	5
07	12	5	2	0	2	2	5	5	10	5	5	10	5
08	00	2	2	2	5	10	8	8	15	18	8	5	22
08	12	15	20	5	8	2	2	2	2	5	5	5	5
09	00	2	2	2	2	8	18	5	0	0	0	2	5
09	12	0	0	0	0	0	0	0	0	2	5	5	5
10	00	5	2	2	0	0	0	0	0	0	0	2	2
10	12	0	0	2	2	0	0	2	0	0	0	0	0
11	00	0	0	0	2	0	2	2	2	2	2	8	22
11	12	15	12		0	0	0	0	0	0	0	0	0
12	00	0	0	0	0	0	0	0	0	0	0	0	0
12	12	0	0	0	0	0	0	0	0	0	0	0	0
13	00	0	0	0	0	0	0	0	0	0	0	0	0
13	12	0	0	0	0	0	0	0	0	0	0	0	0
14	00	0	0	0	0	0	0	0	0	0	0	0	0
14	12	0	2	2	5	10	12	15	5	2	22	20	5
15	00	2	0	2	8	5	5	12	2	15	12	12	15
15	12	8	5	5	5	8	5	5	2	2	5	5	5
16	00	2	2	2	2	2	0	0	0	0	0	0	0

DER Form [illegible] (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY	PARAMETER OBSERVED	METHOD
Hillsborough County EPC	SO2	Pulse Fluorescence

SITE ADDRESS	CITY NAME	PROJECT	TIME INTERVAL OF OBS.	UNITS OF OBS.
Hooker's Pt. –	Tampa	Source	1 hour	PPB

	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	1 0	4 3 6 0	0 5 1	G	0 2	1	8 0	1 1
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
4 2 4 0 1	2 0	0 8	0
23 24 25 26 27	28 29	30 31	32

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
16	12	8	5	5	5	5	2	2	5	2	2	2	2
17	00	2	5	2	2	2	5	2	2	2	2	12	8
17	12	2	0	0	0	0	0	0	0	0	0	0	0
18	00	0	0	0	0	0	0	0	0	0	2	10	2
18	12	2	0	0	6	2	2	2	5	8	8	5	0
19	00	5	12	30	32	42	45	48	40	10	8	18	32
19	12	10	10	10	8	8	8	10	10	12	25	53	35
20	00	28	22	30	32	30	45	90	80		90	20	8
20	12	8	5	2	8	8	5	2	5	22	62	98	38
21	00	25	18	5	10	60	32	40	18	58	32	18	15
21	12	8	18	12	22	18	8	15	25	45	65	40	50
22	00	58	10	5	5	5	8	8	8	8	8	8	8
22	12	8	8	5	2	2	8	8	8	5	5	5	5
23	00	5	5	5	8	10	5	15	12	15	12	8	18
23	12	8	5	2	0	2	20	25	32	15	5	18	25
24	00	28	18	10	8	5	8	2	0	0	0	0	0
24	12	0	0	8	2	8	12	8	8	8	5	2	2
25	00	2	2	0	2	2	5	5	2	12	15	8	8
25	12	8	5	2	8	10	10	5	30	18	2	2	2
26	00	5	8	2	2	5	5	10	8	10	8	5	5
26	12	8			5	5	0	0	0	0	0	38	12
27	00	8	2	2	5	22	30	20	5	0	0	0	0
27	12	0	0	0	0	0	2	0	0	0	0	0	0
28	00	0	0	0	0	0	0	0	2	5	8	10	15
28	12	15	8	22	8	5	10	8	2	5	5	2	8
29	00	2	2	5	5	2	0	0	0	2	5	32	10
29	12	2	0	0	0	0	0	0	2	2	5	2	5
30	00	2	2	0	0	0	0	0	5	15	20	15	5
30	12	2	2	2	2	2	2	2	5	8	2	2	2
~~31~~	~~00~~												
~~31~~	~~12~~												

99.4%

DER form PERM 12-8 (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY	PARAMETER OBSERVED	METHOD
Hillsborough Co. EPC	SO2	Pulse Fluorescence

SITE ADDRESS	CITY NAME	PROJECT	TIME INTERVAL OF OBS.	UNITS OF OBS.
Hooker's Pt. –	Tampa	Source	1 hour	PPB

1	STATE 2 3	AREA 4 5 6 7	SITE 8 9 10	AGENCY 11	PROJECT 12 13	TIME 14	YEAR 15 16	MONTH 17 18
1	10	4360	051	G	02	1	80	11

PARAMETER CODE 23 24 25 26 27	METHOD 28 29	UNITS 30 31	DP 32
42401	20	08	0

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
01	00	10	15	8	10	10	5	2	40	8	10	10	0
01	12	0	8	5	5	18	5	2	10	2	2	35	5
02	00	2	2	2	2	2	0	0	0	0	2	2	2
02	12	2	2	0	2	2	2	5	8	5	5	8	2
03	00	2	2	2	2	2	2	2	2	5	20	12	2
03	12	2	2	2	2	2	2	2	2	2	12	8	10
04	00	12	15	12	12	15	20	22	22	15	12	10	5
04	12	2	2	5	2	20	8	2	5	8	5	2	0
05	00	0	0	0	0	0	2	2	48	30	2	10	12
05	12	12	2	2	2	2	2	2	0	0	0	0	0
06	00	8	15	8	22	25	8	12	40	5	5	8	8
06	12	10	8	8	8	5	5	8	8	28	20	8	25
07	00	12	10	12	18	15	28	12	30	38	25	12	45
07	12	50	60	65	18	20	25	32	12	8	10	10	18
08	00	25	18	10	8	5	5	28	10	48	35	15	8
08	12	5	5	0	2	5	8	8	5	2	8	10	10
09	00	12	5	2	5	8	8	12	18	20	12	5	20
09	12	2	0	15	5	0	5	8	15	52	38	10	10
10	00	15	10	15	20	5	2	10	5	8	2	0	2
10	12	2	2	2	2	0	5	15	22	5	0	0	8
11	00	15	8	10	10	2	2	5	2	10	2	2	12
11	12	8	5	12	12	8	2	2	0	0	2	0	0
12	00	0	0	0	0	0	0	0	0	0	5	5	2
12	12	2	2	2	2	2	5	8	8	5	5	2	0
13	00	0	0	0	0	0	0	0	2	8		10	8
13	12	5	2	2	2	2	2	0	0	2	5	2	2
14	00	5	5	8	8	12	15	12	18	18	15	32	25
14	12	32	22	8	2	2	2	2	2	2	2	0	0
15	00	0	5	22	2	0	0	0	0	0	0	2	5
15	12	2	2	2	2	2	2	2	2	2	2	12	2
16	00	2	2	2	2	2	2						

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY	PARAMETER OBSERVED	METHOD
Hillsborough Co. EPC	SO2	Pulse Fluorescence

SITE ADDRESS	CITY NAME	PROJECT	TIME INTERVAL OF OBS.	UNITS OF OBS.
Hooker's Pt.	Tampa	Source	1 hour	PPB

	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	10	4360	051	G	02	1	80	10
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
42401	20	08	0
23 24 25 26 27	28 29	30 31	32

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
16	12	10	2	2	2	2	5	8	2	2	5	15	22
17	00	8	8	12	12	12	8	8	10	5	2	2	2
17	12	2	0	0	5	5	2	10	8	55	75	50	12
18	00	10	8	5	8	5	2	2	2	5	18	10	45
18	12	20	15	10	15	8	2	2	2	8	8	8	10
19	00	10	25	18	10	0	0	0	0	0	0	0	0
19	12	0	8	5	5	18	2	0	0	0	2	0	0
20	00	2	0	0	0	0	0	0	0	0	0	8	2
20	12	0	0	0	2	2	2	0	0	2	2	2	5
21	00	30	75	20	10	5	2	12	15	22	35	22	25
21	12	18	8	2	5	2	2	2	2	2	0	2	0
22	00	2	2	0	8	2	5	10	12	10	20	42	15
22	12	8	8	5	2	2	2	2	5	5	8	5	5
23	00	5	10	10	8	5	5	5	5	5	2	12	2
23	12	0	0	0	0	5	0	0	2	5	2	0	0
24	00	0	0	0	0	0	2	2	5	18	10	40	55
24	12	18	12	2	0	5	5	20	15	8	12	10	5
25	00	5	5	0	0	0	0	0	2	0	10	5	5
25	12	2	0	0	0	0	0	0	0	0	0	0	30
26	00	135	155	145	135	50	60	55	15	2	2	2	5
26	12	2	2	2	2	2	2	2	2	0	12	8	5
27	00	8	8	8	5	10	15	15	8	22	18	18	30
27	12	8	45	8	5	2	2	2	0	2	10	5	22
28	00	25	25	25	22	20	25	50	10	5	15	2	
28	12	0	0	0	0	0	5	10	12	28	8	5	12
29	00	2	8	18	5	2	0	8	10	2	10	18	15
29	12	5	5	2	2	2	15	18	12	2	5	10	15
30	00	8	5	8	2	2	0	0	0	0	0	0	0
30	12	0	0	0	2	2	0	2	2	0	0	0	0
31	00	0	2	0	5	8	0	0	0	5	30	20	18
31	12	22	5	5	8	8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

39.2%

DEPARTMENT OF ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough Co. EPC
PARAMETER OBSERVED: SO_2
METHOD: Pulse Fluorescence
SITE ADDRESS: Hooker's Pt.
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1 hour
UNITS OF OBS.: PPB

1	STATE	AREA	SITE	AGENCY	PROJECT	TIME	YEAR	MONTH
1	10	4360	051	G	02	1	80	10
1	2 3	4 5 6 7	8 9 10	11	12 13	14	15 16	17 18

PARAMETER CODE	METHOD	UNITS	DP
42401	20	08	0
23 24 25 26 27	28 29	30 31	32

DAY	ST HR	RDG 1	RDG 2	RDG 3	RDG 4	RDG 5	RDG 6	RDG 7	RDG 8	RDG 9	RDG 10	RDG 11	RDG 12
19 20	21 22	33 34 35 36	37 38 39 40	41 42 43 44	45 46 47 48	49 50 51 52	53 54 55 56	57 58 59 60	61 62 63 64	65 66 67 68	69 70 71 72	73 74 75 76	77 78 79 80
01	00	2	0	0	0	0	0	5	0	2	0	5	5
01	12	2	12	5	12	10	2	5	2	0	0	2	0
02	00	5	18	8	8	0	0	0	10	2	5	10	8
02	12	0	0	0	0	0	0	5	0	0	2	8	12
03	00	10	10	12	20	45	30	18	35	20	20	15	8
03	12	5	2	2	2	2	5	2	0	0	0	0	0
04	00	18	20	2	0	2	0	2	8	2	0	0	2
04	12	10	10	5	2	10	0	0	0	15	25	12	30
05	00	0	0	0	2	0	0	0	0	0	0	8	2
05	12	5	0	0	0	0	0	0	0	0	0	0	10
06	00	5	8	10	10	15	2	0	0	2	2	2	5
06	12	2	2	2	2	2	2	2	2	2	2	2	2
07	00	0	2	0	0	5	10	10	8	0	0	2	2
07	12	0	0	0	0	2	2	2	2	0	0	0	0
08	00	0	0	0	2	2	2	2	5	8	5	5	5
08	12	5	5	2	8	15	8	8	8	10	10	5	2
09	00	2	2	2	5	12	28	40			2	5	5
09	12	10	18	15	12	10	2	8	28	2	8	2	0
10	00	2	0	0	2	0	22	25	50	12	8	8	8
10	12	15	12	10	10	5	8	5	35	8	18	15	8
11	00	5	8	10	10	45	28	8	10	32	12	10	5
11	12	8	8	10	5	2	35	18	2	0	2	0	0
12	00	0	0	0	0	0	0	0	10	20	2	0	8
12	12	0	0	0	0	0	5	2	0	0	0	0	0
13	00	0	8	28	55	22	2	0					
13	12												
14	00												
14	12												
15	00												
15	12												

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough Co. EPC
PARAMETER OBSERVED: SO_2
METHOD: Pulse Fluorescence
SITE ADDRESS: Hooker's Pt.
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1 hour
UNITS OF OBS.: PPB

1: 1
STATE (2 3): 1 0
AREA (4 5 6 7): 4 3 6 0
SITE (8 9 10): 0 5 1
AGENCY (11): G
PROJECT (12 13): 0 2
TIME (14): 1
YEAR (15 16): 8 0
MONTH (17 18): 0 9
PARAMETER CODE (23 24 25 26 27): 4 2 4 0 1
METHOD (28 29): 2 0
UNITS (30 31): 0 8
DP (32): 0

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
~~16~~	~~12~~												
~~17~~	~~00~~												
~~17~~	~~12~~												
~~18~~	~~00~~												
~~18~~	~~12~~												
~~19~~	~~00~~												
~~19~~	~~12~~												
~~20~~	~~00~~												
~~20~~	~~12~~												
~~21~~	~~00~~												
~~21~~	~~12~~												
~~22~~	~~00~~												
~~22~~	~~12~~												
~~23~~	~~00~~												
~~23~~	~~12~~												
~~24~~	~~00~~												
24	12					5	5	8	12	10	10	10	8
25	00	15	20	10	20	18	15	15	15	18	22	12	50
25	12	28	25	35	12	10	5	2	5	8	12	12	15
26	00	8	20	18	18	22	12	12	30	32	30	8	5
26	12	5	8	10	8	8	8	20	10	10	8	8	8
27	00	5	12	140	92	52	12	5	10	35	40	125	68
27	12	98	38	10	8	12	18	10	10	12	10	8	12
28	00	15	8	12	10	8	8	2	5	10	8	65	20
28	12	10	0	2	5	5	10	2	5	2	30	20	5
29	00	5	10	10	5	5	2	2	2	15	8	2	10
29	12	12	12	10	8	10	12	5	5	5	5	5	5
30	00	8	5	5	10	10	10	5	2	5	5	5	2
30	12	10	10	12	8	2	5	12	2	5	5	0	2
~~31~~	~~00~~												
~~31~~	~~12~~												

8%

DEPARTMENT OF ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough Co. EPC
PARAMETER OBSERVED: SO_2
METHOD: Pulse Fluorescence
SITE ADDRESS: Hooker's Pt.
CITY NAME: Tampa
PROJECT: source
TIME INTERVAL OF OBS.: 1 hour
UNITS OF OBS.: PPB

1
STATE: 10
AREA: 4360
SITE: 051
AGENCY: G
PROJECT: 02
TIME: 1
YEAR: 80
MONTH: 09
PARAMETER CODE: 42401
METHOD: 20
UNITS: 08
DP: 0

DAY	ST. HR	RDG 1	RDG 2	RDG 3	RDG 4	RDG 5	RDG 6	RDG 7	RDG 8	RDG 9	RDG 10	RDG 11	RDG 12
01	00	10	8	5	5	5	8	8	10	12	5		
01	12						0	0	0	0	0	0	2
02	00	2	0	0	0	0	0	0	0	2	2	5	5
02	12	10	12	2	12	0	5	0	0	0	0	5	0
03	00	2	0	2	5	2	2	2	5	5	8	8	5
03	12	5	8	35	30	8	5	10	10	18	10	10	8
04	0C	8	8	15	10	8	10	8	12		8	12	8
04	12	8	10	12	12	12	12	22	12	15	18	12	10
05	00	15	12	18	18	10	8	10	10	10	15	18	15
05	12	8	8	5	5	5	5	8	10	8	10	10	8
06	00	18	12	8	8	8	8	8	12	15	8	8	8
06	12	8	10	10	10	8	8	8	8	15	5	5	15
07	00	10	8	8	8	8	10	8	8	10	12	55	292
07	12	190	52	10	5	8	8	5	5	2	5	5	5
08	00	8	8	8	8	10	18	18	25	22	22	15	8
08	12	10		5	10	10	8	8	8	10	8	8	15
09	00	15	10	10	8	10	10	8	10	10	12		5
09	12	8	10	8	8	15	5	12	10	10	10	10	8
10	00	10	12	18	5	8	8	10	20				
10	12												
11	00												
11	12												
12	00												
12	12												
13	00												
13	12												
14	00												
14	12												
15	00												
15	12												
16	00												

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

1	STATE 2 3	AREA 4 5 6 7	SITE 8 9 10	AGENCY 11	PROJECT 12 13	TIME 14	YEAR 15 16	MONTH 17 18
1	10	4360	051	G	02	1	80	08

PARAMETER CODE 23 24 25 26 27	METHOD 28 29	UNITS 30 31	DP 32
42401	20	08	0

AGENCY: Hillsborough County EPC

PARAMETER OBSERVED: SO_2

METHOD: Pulse Fluorescence

SITE ADDRESS: Hooker's Pt.

CITY NAME: Tampa

PROJECT: Source

TIME INTERVAL OF OBS.: 1 hour

UNITS OF OBS.: PPB

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
~~16~~	~~12~~												
~~17~~	~~00~~												
~~17~~	~~12~~												
~~18~~	~~00~~												
~~18~~	~~12~~												
~~19~~	~~00~~												
19	12		5	5	5	2	5	12	15	12	8	12	10
20	00	10	10	18	32	25	22	48	40	38	25	65	18
20	12	10	5	8	20	8	8	8	8	5	10	10	10
21	00	5	30	20	8	8	15	12	20	50	20	35	45
21	12	5	0	2	2	2	5	0	60	20	12	15	60
22	00	20	12	12	12	0	8	12	10	5	2	2	2
22	12	5	10	5	50	2	0	0	10	8	5	5	12
23	00	10	12	5	55	22	8	2	0	8	15	38	80
23	12	50	15	25	5	5	5	12	8	5	5	0	0
24	00	2	5	8	8	12	8	8	0	0	5	2	2
24	12	0	5	2	2	0	0	0	2	0	0	0	0
25	00	0	0	0	2	8	15	22	32	20	5	5	10
25	12	2	5	2	0	0	0	5	2	2	0	8	8
26	00	2	0	0	0	0	0	2	18	2	2	2	2
26	12	8	5	2	5	10	8	2	0	8	0	22	5
27	00	10	22	20	12	5	8	20	25	28	10	10	32
27	12	10	0	2	0	0	2	2	5	10	20	5	5
28	00	5	8	20	28	18	30	20	10	10	15	5	140
28	12	95	45	32	20	20	5	15	5	5	18	10	8
29	00	5	18	20	25	22	12	8	5	5	5	2	5
29	12	15	28	5	2	2	5	2	2	2	5	5	5
30	00	10	8	8	10	2	2	0	2	2	2	2	2
30	12	5	20	8	5	2	2	15	8	8	8	12	10
31	00	12	10	10	8	8	2	2	2	2	2	2	2
31	12	2	2	5	2	8	5	50	10	5	5	8	8

51.2%

DER form PERM 12-8 (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO_2
METHOD: Pulse Fluorescence
SITE ADDRESS: Hooker's Pt.
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1 hour
UNITS OF OBS.: PPB

1	STATE		AREA				SITE			AGENCY	PROJECT		TIME	YEAR		MONTH	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	1	0	4	3	6	0	0	5	1	G	0	2	1	8	0	0	8

PARAMETER CODE					METHOD		UNITS		DP
23	24	25	26	27	28	29	30	31	32
4	2	4	0	1	2	0	0	8	0

DAY	ST	HR	RDG 1	RDG 2	RDG 3	RDG 4	RDG 5	RDG 6	RDG 7	RDG 8	RDG 9	RDG 10	RDG 11	RDG 12
19 20	21	22	33 34 35 36	37 38 39 40	41 42 43 44	45 46 47 48	49 50 51 52	53 54 55 56	57 58 59 60	61 62 63 64	65 66 67 68	69 70 71 72	73 74 75 76	77 78 79 80
01	0	0	0	0	0	2	2	2	2	2	2	0	2	5
01	1	2	2	2	2	0	0	0	0	0	0	2	5	5
02	0	0	5	0	0	0	0	0	0	0	0	0	0	0
02	1	2	0	0	0	0	0	0	0	0	0	0	0	0
03	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03	1	2	0	0	0	0	0	0	0	0	0	0	0	0
04	0	0	0	0	0	0	0	0	0	0	0	0		
04	1	2												
05	0	0												
05	1	2												
06	0	0												
06	1	2												
07	0	0												
07	1	2												
08	0	0												
08	1	2												
09	0	0												
09	1	2												
10	0	0												
10	1	2												
11	0	0												
11	1	2												
12	0	0												
12	1	2												
13	0	0												
13	1	2												
14	0	0												
14	1	2												
15	0	0												
15	1	2												
16	0	0												

DER [illegible] (Feb [illegible])

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO2
METHOD: Pulse Fluorescence
SITE ADDRESS: Hooker's Pt.
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1 Hour
UNITS OF OBS.: PPB

1 (1)
STATE: 1 0 (2 3)
AREA: 4 3 6 0 (4 5 6 7)
SITE: 0 5 1 (8 9 10)
AGENCY: G (11)
PROJECT: 0 2 (12 13)
TIME: 1 (14)
YEAR: 8 0 (15 16)
MONTH: 0 7 (17 18)
PARAMETER CODE: 4 2 4 0 1 (23 24 25 26 27)
METHOD: 2 0 (28 29)
UNITS: 0 8 (30 31)
DP: 0 (32)

DAY	ST HR	RDG 1	RDG 2	RDG 3	RDG 4	RDG 5	RDG 6	RDG 7	RDG 8	RDG 9	RDG 10	RDG 11	RDG 12
19 20	21 22	33 34 35 36	37 38 39 40	41 42 43 44	45 46 47 48	49 50 51 52	53 54 55 56	57 58 59 60	61 62 63 64	65 66 67 68	69 70 71 72	73 74 75 76	77 78 79 80
16	12	5	2	2	2	2	2	2	2	2	5	5	5
17	00	0	0	0	0	0	0	0	0		2	2	2
17	12	15	5	5	5	2	2	2	2	2	2	2	2
18	00	2	2	2	2	2	2	2	2	2	2	2	2
18	12	2	0	0	0	0	0	0	0	0	0	0	0
19	00	0	0	0	0	0	0	0	0	0	0	0	0
~~19~~	~~12~~												
~~20~~	~~00~~												
~~20~~	~~12~~												
~~21~~	~~00~~												
~~21~~	~~12~~												
~~22~~	~~00~~												
~~22~~	~~12~~												
~~23~~	~~00~~												
~~23~~	~~12~~												
~~24~~	~~00~~												
24	12							0	0	0	0	0	0
25	00	0	0	0	0	0	0	0	0	0	0	0	0
25	12	2	2	2	0	0	0	0	0	0	0	0	0
26	00	0	0	0	0	2	2	2	2	2	2	0	0
26	12	0	0	0	0	0	0	0	0	0	0	0	0
27	00	0	0	0	0	0	0	0	0	0	0	0	0
27	12	0	0	0	0	0	0	0	0	0	0	0	0
28	00	0	0	0	0	0	0	0	0	0	0	0	0
28	12	0	8	10	8	8	8	8	8	5	5	5	5
29	00	5	5	5	5	5	5	5	2	5	5	0	8
29	12	8	8	8	8	8	5	5	5	5	8	8	8
30	00	5	2	2	2	2	2	2	2	2	2	2	2
30	12	2	2	2	2	2	2	0	0	0	0	0	0
31	00	2	2	2	2	5	5	5	5	5	5	2	2
31	12	0	0	0	0	0	0	0	0	0	2	2	2

DER form PERM 12 - 8 (Feb 1976)

78.97.

DEPARTMENT OF ENVIRONMENTAL REGULATION — AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO_2
METHOD: Pulse Fluorescence
SITE ADDRESS: Hooker's Point
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1 Hour
UNITS OF OBS.: PPB

1 (1)
STATE / AREA / SITE (2–10): 1 0 4 3 6 0 0 5 1
AGENCY (11): G
PROJECT (12 13): 0 2
TIME (14): 1
YEAR (15 16): 8 0
MONTH (17 18): 0 7
PARAMETER CODE (23–27): 4 2 4 0 1
METHOD (28 29): 2 0
UNITS (30 31): 0 8
DP (32): 0

DAY 19 20	ST HR 21 22	RDG 1 33–36	RDG 2 37–40	RDG 3 41–44	RDG 4 45–48	RDG 5 49–52	RDG 6 53–56	RDG 7 57–60	RDG 8 61–64	RDG 9 65–68	RDG 10 69–72	RDG 11 73–76	RDG 12 77–80
01	00	0	0	0	0	0	0	0	0	0	0	0	0
01	12	0	0		0	5	40	2	0	0	0	0	2
02	00	8	2	0	0	0	0	2	10	45	45	28	30
02	12	2	2	2	35	10	28	2	0	2	8	15	12
03	00	12	8	5	2	5	5	5	5	2	0	0	
~~03~~	~~12~~												
~~04~~	~~00~~												
04	12					0	0	0	0	0	0	0	0
05	00	0	0	0	0	0	0	0	0	0	0	0	2
05	12	2	0	0	0	0	0	0	0	0	0	0	0
06	00	0	2	2	2	2	2	2	0	0	0	0	0
06	12	0	0	0	0	0	0	0	0	0	0	0	0
07	00	0	0	0	0	0	0	2	2	2	2	8	5
07	12	5	5	2	2	2	5	5	2	2	2	2	2
08	00	2	5	5	5	5	8	8	8	8	8	5	15
08	12	12	5	5	8	5	5	5	2	2	8	2	2
09	00	2	2	0	0	0	2	2	8	5	2	2	2
09	12	2	2	2	2	2	2	2	0	0	0	0	0
10	00	0	0	0	0	0	0	0	0	0	0	0	0
10	12	0	0	0	0	0	0	0	0	0	0	0	0
11	00	0	0	0	0	0	2	2	2	0	0	0	0
11	12	0	0	0	0	0	0	0	0	0	0	0	0
12	00	0	0	0	0	0	0	0	0	0	0	0	0
12	12	0	0	0	0	0	0	0	0	0	0	0	0
13	00	0	0	0	0	0	0	0	0	0	0	0	0
13	12	0	0	0	0	0	0	0	0	0	0	0	0
14	00	0	0	0	0	0	0	0	0	0	0	0	0
14	12	0	0	0	0	0	0	0	0	0	0	0	0
15	00	0	0	0	0	0	0	10	12	5	2	0	0
15	12	0	2	5	5	5	5	5	5	2	5	2	5
16	00	2	2	2	2	5	2	2	2	2	5	5	5

DER form PERM 12-8 (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO_2
METHOD: Pulse Fluorescence.
SITE ADDRESS: Hooker's Point
CITY NAME: Tampa
PROJECT: Source
TIME INTERVAL OF OBS.: 1 Hour
UNITS OF OBS.: PPB

1 (1): 1
STATE (2–3): 1 0
AREA / SITE (4–10): 3 6 0 0 5 1
AGENCY (11): G
PROJECT (12–13): 0 2
TIME (14): 1
YEAR (15–16): 8 0
MONTH (17–18): 0 6
PARAMETER CODE (23–27): 4 2 4 0 1
METHOD (28–29): 2 0
UNITS (30–31): 0 8
DP (32): 0

DAY	ST	HR	RDG 1	RDG 2	RDG 3	RDG 4	RDG 5	RDG 6	RDG 7	RDG 8	RDG 9	RDG 10	RDG 11	RDG 12
19 20	21	22	33 34 35 36	37 38 39 40	41 42 43 44	45 46 47 48	49 50 51 52	53 54 55 56	57 58 59 60	61 62 63 64	65 66 67 68	69 70 71 72	73 74 75 76	77 78 79 80
01	0	0	2	0	0	0	0	0	0	2	2	0	0	0
01	1	2	2	2	2	0	0	0	0	0	0	0	0	0
02	0	0	0	2	2	2	0	0	0	5	10	10	7	10
02	1	2	15	10	2	5	2	2	2	0	0	0	0	2
03	0	0	2	2	2	5	12	7	12	15	12	12	10	7
03	1	2	5	7	7	10	10	5	2	2	2	10	10	10
04	0	0	15	25	20	15	5	7	7	15	5	2	0	0
04	1	2	0	7	12	12	7	0	0	5	7	0	0	0
05	0	0	0	0	0	7	2	0	0	0	0	12	12	12
05	1	2	20	7	7	12	7	5	2	0	0	7	0	0
06	0	0	12	25	10	10	7	2	7	12	10	5	2	2
06	1	2	2	7	7	2	2	17	7	15	5	7	10	7
07	0	0	25	17	25	15	10	12	5	12	22	15	10	5
07	1	2	2	2	2	2	0	12	15	5	0	0	2	2
08	0	0	2	2	2	0	2	0	0	0	2	5	5	2
08	1	2	2	2	2	2	2	5	5	5	2	5	2	0
09	0	0	0	0	0	0	0	0	0	0	0	0	0	
09	1	2	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	1	2	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	1	2	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	1	2	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	1	2	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	1	2	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	1	2	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	5	2	12

DER form PERM 12-8 (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY: Hillsborough County EPC
PARAMETER OBSERVED: SO_2
METHOD: Pulse Fluorescence
SITE ADDRESS: Hooker's Point
CITY NAME: TAMPA
PROJECT: Source
TIME INTERVAL OF OBS.: 1 Hour
UNITS OF OBS.: PPB

1	STATE 2 3	AREA 4 5 6 7	SITE 8 9 10	AGENCY 11	PROJECT 12 13	TIME 14	YEAR 15 16	MONTH 17 18
1	1 0	4 3 6 0	0 5 1	G	0 2	1	8 0	0 6

PARAMETER CODE 23 24 25 26 27	METHOD 28 29	UNITS 30 31	DP 32
4 2 4 0 1	2 0	0 8	0

DAY 19 20	ST HR 21 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
16	12	50	20	10	7	5	2	2	5	5	2	2	2
17	00	5	10	7	12	12	12	10	10	15	20	20	17
17	12	5	0	2	5	7	5	12	12	0	0	0	0
18	00	0	5	12	10	5	2	10	10	8	2	2	5
18	12	0	0	2	5	2	2	5	2	0	0	0	0
19	00	0	0	0	0	0	0	0	0	2	2	2	2
19	12	2	2	2	2	2	2	2	0	0	0	0	0
20	00	0	0	0	0	0	0	0	0	2	2	2	2
20	12	2	2	2	0	0	0	0	0	0	0	0	0
21	00	0	0	0	0	0	0	0	0	0	0	0	0
21	12	0	0	0	0	0	0	0	0	0	0	0	0
22	00	0	0	0	0	0	0	0	2	5	2	2	2
22	12	2	2	2	2	2	2	0	0	0	0	0	0
23	00	0	0	0	0	0	0	0	0	0			0
23	12	0	0	0	0	0	0	0	0	0	0	0	0
24	00	0	0	0	0	0	0	0	0	0	0	0	0
24	12	6	0	0	0	0	0	0	0	0	0	0	0
25	00	0	0	0	0	0	0	0	2	5	5	2	0
25	12	2	0	0	0	0	0	0	0	0	0	0	0
26	00	0	8	8	8	5	0	0	0	0	0	0	0
26	12	0	0	0	0	0	0	0	0	0	0	0	0
27	00	0	18	5	0	0	0	0	0	0	0	0	0
27	12	0	0	0	0	0	0	0	0	0	0	0	0
28	00	0	0	0	0	0	0	0	0	0	0	0	0
28	12	0	0	0	0	0	0	0	0	0	0	0	0
29	00	0	0	0	0	0	0	0	0	0	0	0	0
29	12	0	0	0	0	0	0	0	0	0	0	0	0
30	00	0	0	0	0	0	0	0	0	0	0	0	0
30	12	0	0	0	0	0	0	0	0	0	0	0	0
31	00												

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY	PARAMETER OBSERVED	METHOD
Hillsborough County EPC	SO2	Pulse Fluorescence

SITE ADDRESS	CITY NAME	PROJECT	TIME INTERVAL OF OBS.	UNITS OF OBS.
Hooker's Pt.	Tampa	Source	1 Hour	PPB

1	STATE 2 3	AREA 4 5 6 7	SITE 8 9 10	AGENCY 11	PROJECT 12 13	TIME 14	YEAR 15 16	MONTH 17 18
1	10	4360	051	G	02	1	80	05

PARAMETER CODE 23 24 25 26 27	METHOD 28 29	UNITS 30 31	DP 32
42401	20	08	0

DAY 19 20	ST 21	HR 22	RDG 1 33 34 35 36	RDG 2 37 38 39 40	RDG 3 41 42 43 44	RDG 4 45 46 47 48	RDG 5 49 50 51 52	RDG 6 53 54 55 56	RDG 7 57 58 59 60	RDG 8 61 62 63 64	RDG 9 65 66 67 68	RDG 10 69 70 71 72	RDG 11 73 74 75 76	RDG 12 77 78 79 80
16	1	2					0	0	0	20	10	5	7	15
17	0	0	20	15	5	2	2	2	2	5	25	5	0	0
17	1	2	5	40	15	0	0	0	2	0	0	2	5	2
18	0	0	5	5	5	5	2	0	0	0	0	15	5	15
18	1	2	15	15	15	2	5	2	5	7	2	5	5	5
19	0	0	0	5	5	2	2	8	2	5	8	5	2	0
19	1	2	0	2	10	15	10	2	0	0	2	2	15	15
20	0	0	8	10	15	5	0	0	0	0	0	0	0	0
20	1	2	0	0	0	5	0	0	0	0	0	0	2	0
21	0	0	2	5	0	0	2	10	0	0	0	0	0	112
21	1	2	175	258	70	10	5	8	5	12	20	10	25	12
22	0	0	5	2	20	28	8	5	12	15	15	5	2	5
22	1	2	10	5	8	2	0	0	0	0	2	2	0	0
23	0	0	0	2	2	5	2	0	2	2	2	5	2	0
23	1	2	0	10	30	10	10	10	0	2	10	8	2	0
24	0	0	0	0	0	0	0	0	0	0	0	0	2	2
24	1	2	0	0	0	0	2	5	0	0	0	2	0	2
25	0	0	2	2	0	0	0	0	0	8	2	0	15	5
25	1	2	0	0	0	0	0	0	5	5	8	8	2	2
26	0	0	5	2	0	0	0	0	2	5	5	0	0	0
26	1	2	10	10	0	0	0	0	0	0	0	5	0	0
27	0	0	0	0	0	0	0	0	0	0	2	5	5	6
27	1	2	5	7	2	2	2	2	2	2	5	2	2	7
28	0	0	5	5	5	2	2	2	5	20	17	12	10	5
28	1	2	10	5	2	0	2	0	0	0	0	0	0	0
29	0	0	2	0	5	5	2	0	0	5	5	5	0	0
29	1	2	15	10	10	10	15	12	5	7	27	22	22	17
30	0	0	5	5	2	5	5	5	5	7	5	2	2	2
30	1	2	0	0	0	2	2	2	5	5	2	0	2	5
31	0	0	2	5	2	2	0	0	0	0	0	2	2	2
31	1	2	2	0	2	2	2	2	2	5	5	5	5	5

98.9%

DER form PERM 12-8 (Feb 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION – AIR QUALITY INPUT FORM HOURLY DATA

AGENCY	PARAMETER OBSERVED	METHOD
Hillsborough County EPC	SO2	Pulse Fluorescence

SITE ADDRESS	CITY NAME	PROJECT	TIME INTERVAL OF OBS.	UNITS OF OBS.
Hooker's Pt.	Tampa	Source	1-Hour	PPB

	STATE - AREA - SITE (2-10)	AGENCY (11)	PROJECT (12 13)	TIME (14)	YEAR (15 16)	MONTH (17 18)
1	1 0 4 3 6 0 0 5 1	G	0 2	1	8 0	0 5

PARAMETER CODE (23-27)	METHOD (28 29)	UNITS (30 31)	DP (32)
4 2 4 0 1	2 0	0 8	0

DAY (19 20)	ST HR (21 22)	RDG 1 (33-36)	RDG 2 (37-40)	RDG 3 (41-44)	RDG 4 (45-48)	RDG 5 (49-52)	RDG 6 (53-56)	RDG 7 (57-60)	RDG 8 (61-64)	RDG 9 (65-68)	RDG 10 (69-72)	RDG 11 (73-76)	RDG 12 (77-80)
01	00	0	5	12	10	0	0	0	0	0	0	0	0
01	12	0	0	0	0	0	0	0	0	0	0	0	0
02	00	0	0	0	0	0	0	0	0	0	0	0	0
02	12	0	0	0	0	0	0	0	0	0	0	0	0
03	00	0	2	2	2	2	2	2	2	2	2	0	0
03	12	0	0	2	0	0	0	0	0	0	0	0	0
04	00	0	0	0	0	0	0	0	0	0	0	0	0
04	12	0	0	0	0	0	0	0	0	0	0	0	0
05	00	0	0	2	2	2	2	2	2	2	2	5	7
05	12	7	15	7	5	7	2	2	2	2	2	2	2
06	00	2	5	20	2	2	2	2	2	20	17	20	5
06	12	5	10	7	5	7	7	20	7	0	5	0	0
07	00	0	0	0	0	0	0	0	0	0	2	2	2
07	12	5	2	0	0	0	0	0	0	0	0	0	0
08	00	0	0	0	0	0	2	5	5	2	0	0	0
08	12	3	0	0	0	0	0	0	0	0	0	0	0
09	00	5	5	5	5	10	5	2	2	5	5	2	2
09	12	0	0	0	7	7	7	7	10	10	10	2	2
10	00	12	22	45	27	30	42	17	7	5	7	5	2
10	12	2	5	5	10	10	2	2	2	20	20	10	10
11	00	10	2	2	10	12	10	10	12	10	10	10	7
11	12	5	5	5	5	5	5	5	5	7	12	7	5
12	00	5	5	5	5	12	15	10	12	15	17	20	20
12	12	20	15	7	15	20	20	15	17	10	15	10	15
13	00	10	10	15	17	25	20	25	20	12	30	0	20
13	12	30	35	5	5	5	10	5	2	2	0	0	0
14	00	0	0	2	8	15	20	18	22	2			
14	12	2	2	2	5	2	0	2	2	12	10	10	8
15	00	0	0	15	12	10	5	8	2	2	5	20	8
15	12	2	2	2	5	0	0	0	2	5	5	15	15
16	00	20	10	10	10	10	20	15	15	55	10	2	

92

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 (1) Hillsborough County Env. Protection Commission
AGENCY

STATE 1 0 (2 3) AREA 4 3 6 0 (4 5 6 7) SITE 0 4 3 (8 9 10)

Hillsborough
CITY NAME

#92 Highway 60 and 41
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

AGENCY G (11) PROJECT 0 2 (12 13) TIME 7 (14) YEAR 8 0 (15 16) MONTH 0 5 (17 18)

	Total Suspend. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	1 2 4 0 3 (37 38 39 40 41)	1 2 1 2 8 (51 52 53 54 55)	(65 66 67 68 69)
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1						
0 2						
0 3	0	0	97 *	171	5	
0 4						
0 5						
0 6						
0 7						
0 8						
0 9	0	0	69 *			
1 0						
1 1						
1 2						
1 3						
1 4						
1 5	0	0	115 *	127	7	
1 6						
1 7						
1 8						
1 9						
2 0						
2 1	0	0	100 *	146	7	
2 2						
2 3						
2 4						
2 5						
2 6						
2 7	0	0	98 *			
2 8						
2 9						
3 0						
3 1						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

100%

DER form PERM 12-9 (Feb. 1976)

* - 8/20/80 - Submitted to SAROAD due to E.P.A. policy change (memo of 8/7/80) - However, flag data due to construction in Area. L.T.M.

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Env. Protection Commission
1 AGENCY

Hillsborough
CITY NAME

#92 Highway 60 and 41
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	4	3
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT	TIME	YEAR	MONTH
G	02	7	80	06
11	12 13	14	15 16	17 18

	Total Suspend. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	11101	12403	12128	
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	91	92	92	
	28 29	42 43	56 57	70 71
UNITS	01	01	01	
	30 31	44 45	58 59	72 73
DP	0	1	1	
	32	46	60	74

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
01						
02	0	0	97 *		7	
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14	0	0	96 *			
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26	0	0	101 *			
27						
28						
29						
30						
31						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

0%

1,0

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Env. Protection Commission
1 AGENCY

STATE 1 0 (2 3) AREA 4 3 6 0 (4 5 6 7) SITE 0 4 3 (8 9 10)

Hillsborough
CITY NAME

#92 Highway 60 and 41
SITE ADDRESS

AGENCY G (11) PROJECT 0 2 (12 13) TIME 7 (14) YEAR 8 0 (15 16) MONTH 0 7 (17 18)

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

	Total Suspend. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	1 2 4 0 3 (37 38 39 40 41)	1 2 1 2 8 (51 52 53 54 55)	(65 66 67 68 69)
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19 20	SI 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1						
0 2	0	0	127*	92	10	
0 3						
0 4						
0 5						
0 6						
0 7						
0 8	0	0	106*	150	7	
0 9						
1 0						
1 1						
1 2						
1 3						
1 4	0	0	73*	185	4	
1 5						
1 6						
1 7						
1 8						
1 9						
2 0						
2 1						
2 2						
2 3						
2 4						
2 5						
2 6						
2 7						
2 8						
2 9						
3 0						
3 1						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

60%

DER form PERM 12-9 (Feb. 1976)

*- 8/20/80 - submitted to SAROAD due to E.P.A memo of 8/7/80 - However flag data as construction in area can influence concentrations. L.N.

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA - SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

[2] Hillsborough County Env. Protection Commission
1 AGENCY

STATE 1 0 (2 3) AREA 4 3 6 0 (4 5 6 7) SITE 0 4 3 (8 9 10)

Hillsborough
CITY NAME

#92 Highway 60 and 41
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

AGENCY G (11) PROJECT 0 2 (12 13) TIME 7 (14) YEAR 8 0 (15 16) MONTH 0 8 (17 18)

	Total Suspend. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	1 2 4 0 3 (37 38 39 40 41)	1 2 1 2 8 (51 52 53 54 55)	(65 66 67 68 69)
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19 20	ST 21	HR 22	33 34 35 36		47 48 49 50	61 62 63 64	75 76 77 78
01	0	0	101	*			
02							
03							
04							
05							
06							
07	0	0	98	*	77	4	
08							
09							
10							
11							
12							
13	0	0	101	*			
14							
15							
16							
17							
18							
19	0	0	75	*	100	6	
20							
21							
22							
23							
24							
25	0	0	73	*			
26							
27							
28							
29							
30							
31	0	0	53	*	102	4	
	DP →		4 3 2 1 0		4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

DER form PERM 12-9 (Feb. 1976)

100%

* flag data - submitted to SAROAD due to E.PA. - memo of 8/7/80. However - flag data as construction

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 (1) Hillsborough County Env. Protection Commission
AGENCY

STATE 1 0 (2 3) AREA 4 3 6 0 (4 5 6 7) SITE 0 4 3 (8 9 10)

Hillsborough
CITY NAME

#92 Highway 60 and 41
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

AGENCY G (11) PROJECT 0 2 (12 13) TIME 7 (14) YEAR 8 0 (15 16) MONTH 0 9 (17 18)

	Total Suspend. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	1 2 4 0 3 (37 38 39 40 41)	1 2 1 2 8 (51 52 53 54 55)	(65 66 67 68 69)
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
01						
02						
03						
04						
05						
06	0	0	68 *			
07						
08						
09						
10						
11						
12	0	0	120 *	119	9	
13						
14						
15						
16						
17						
18	0	0	100 *			
19						
20						
21						
22						
23						
24	0	0	122 *	126	19	
25						
26						
27						
28						
29						
30	0	0	99 *			
31						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0
			100%		0.27	

DER form PERM 12-9 (Feb. 1976) * – Flag HiVol data as construction in area could have influenced concentrations.

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Env. Protection Commission
1 AGENCY

STATE 1 0 | AREA 4 3 6 0 | SITE 0 4 3
2 3 4 5 6 7 8 9 10

Hillsborough
CITY NAME

#92 Highway 60 and 41
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

AGENCY G (11) | PROJECT 0 2 (12 13) | TIME 7 (14) | YEAR 8 0 (15 16) | MONTH 1 0 (17 18)

	Total Suspend. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	1 2 4 0 3 (37 38 39 40 41)	1 2 1 2 8 (51 52 53 54 55)	(65 66 67 68 69)
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19 20	ST 21	HR 22	33 34 35 36		47 48 49 50		61 62 63 64	75 76 77 78
01								
02								
03								
04								
05								
06	0	0	108	*	132	x	7	
07								
08								
09								
10								
11								
12	0	0	98	*				
13								
14								
15								
16								
17								
18	0	0	86	*	94	x	8	
19								
20								
21								
22								
23								
24	0	0	107	*				
25								
26								
27								
28								
29								
30	0	0	68	*	116	x	6	
31							3/ 2	
DP →			4 3 2 1 0		4 3 2 1 0		4 3 2 1 0	4 3 2 1 0

100%

X-submitted with Dec. 1980 data

* flag data - submitted to SAROAD due to EPA mem of 8/7/80 - However - flag data as construction in area

DER form PERM 12 - 9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 (1)	AGENCY: Hillsborough County Env. Protection Commission	STATE (2 3): 1 0	AREA (4 5 6 7): 4 3 6 0
	CITY NAME: Hillsborough	SITE (8 9 10): 0 4 3	
	SITE ADDRESS: #92 Highway 60 and 41		
	PROJECT: Ambient Surveillance	TIME INTERVAL: 24 Hours	

AGENCY (11)	PROJECT (12 13)	TIME (14)	YEAR (15 16)	MONTH (17 18)
G	0 2	7	8 0	1 1

	Total Suspend. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	1 2 4 0 3 (37 38 39 40 41)	1 2 1 2 8 (51 52 53 54 55)	(65 66 67 68 69)
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19	20	ST 21	HR 22	33	34	35	36	47	48	49	50	61	62	63	64	75	76	77	78
0	1																		
0	2																		
0	3																		
0	4																		
0	5																		
0	6																		
0	7																		
0	8																		
0	9																		
1	0																		
1	1																		
1	2																		
1	3																		
1	4																		
1	5																		
1	6																		
1	7																		
1	8																		
1	9																		
2	0																		
2	1																		
2	2																		
2	3	0	0			7	2 *		1	5	1				7				
2	4																		
2	5																		
2	6																		
2	7																		
2	8																		
2	9																		
3	0																		
3	1																		

DP → 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0

20%

DER form PERM 12-9 (Feb. 1976)

* flag data, as construction in area could have influenced data.

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Env. Protection Commission
1 AGENCY

STATE		AREA				SITE		
1	0	4	3	6	0	0	4	3
2	3	4	5	6	7	8	9	10

Hillsborough
CITY NAME

#92 Highway 60 and 41
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

AGENCY	PROJECT	TIME	YEAR	MONTH
G	0 2	7	8 0	1 2
11	12 13	14	15 16	17 18

	Total Suspend. Part.	Sulfates	Lead on HiVols	
NAME				
PARAMETER CODE	1 1 1 0 1	1 2 4 0 3	1 2 1 2 8	
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1						
0 2						
0 3						
0 4						
0 5	0	0	1 0 5 *	7 1	8	
0 6						
0 7						
0 8						
0 9						
1 0						
1 1	0	0	9 4 *			
1 2						
1 3						
1 4						
1 5						
1 6						
1 7	0	0	7 8 *	1 1 1	4	
1 8						
1 9						
2 0						
2 1						
2 2						
2 3	0	0	5 0 *			
2 4						
2 5						
2 6						
2 7						
2 8						
2 9	0	0	6 8 *	6 7	8	
3 0						
3 1						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

100%

[illegible]

DER form PERM 12-9 (Feb. 1976)

* Flag data – construction in area still in progress – could affect sample concentration.

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Enviro. Protect. Comm.
1 AGENCY

Hillsborough County
CITY NAME

92 Highway 60 &41
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	4	3
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT		TIME	YEAR		MONTH	
G	0	2	7	8	1	0	1
11	12	13	14	15	16	17	18

	Total Susp. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1	1 2 4 0 3	1 2 1 2 8	
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1	9 2	9 2	
	28 29	42 43	56 57	70 71
UNITS	0 1	0 1	0 1	
	30 31	44 45	58 59	72 73
DP	0	1	1	
	32	46	60	74

DAY 19	20	ST 21	HR 22	33	34	35	36	47	48	49	50	61	62	63	64	75	76	77	78
0	1																		
0	2																		
0	3																		
0	4	0	0			9	8 *												
0	5																		
0	6																		
0	7																		
0	8																		
0	9																		
1	0	0	0			6	6 *			8	1				2				
1	1																		
1	2																		
1	3																		
1	4																		
1	5																		
1	6	0	0			8	5 *												
1	7																		
1	8																		
1	9																		
2	0																		
2	1																		
2	2	0	0			8	4 *			9	9				5				
2	3																		
2	4																		
2	5																		
2	6																		
2	7																		
2	8	0	0			9	6 *												
2	9																		
3	0																		
3	1																		
DP →				4	3	2	1 0	4	3	2	1 0	4	3	2	1 0	4	3	2	1 0

100%

* - flag data due to construction in area

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Enviro. Protect. Comm.
AGENCY
Hillsborough County
CITY NAME
92 Highway 60 &41
SITE ADDRESS
Ambient Surveillance
PROJECT
24 Hours
TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	4	3
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT		TIME	YEAR		MONTH	
G	0	2	7	8	1	0	2
11	12	13	14	15	16	17	18

	Total Susp. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	1 2 4 0 3 (37 38 39 40 41)	1 2 1 2 8 (51 52 53 54 55)	(65 66 67 68 69)
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY (19 20)	ST (21)	HR (22)	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
01						
02						
03	0	0	53*	34	2	
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21	0	0	58*	69	2	
22						
23						
24						
25						
26						
27	0	0	163*	99	28	
28						
29						
30						
31						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

60%

3, 32

*- flag data due to road construction in area

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

[2] Hillsborough County Enviro. Protect. Comm.
1 AGENCY

Hillsborough County
CITY NAME

92 Highway 60 &41
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	4	3
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT		TIME	YEAR		MONTH	
G	0	2	7	8	1	0	3
11	12	13	14	15	16	17	18

	Total Susp. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1	1 2 4 0 3	1 2 1 2 8	
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19 20	ST 21	HR 22	33 34 35 36		47 48 49 50	61 62 63 64	75 76 77 78
0 1							
0 2							
0 3							
0 4							
0 5	0	0	8 0	*			
0 6							
0 7							
0 8							
0 9							
1 0							
1 1	0	0	9 8	*	1 0 9	2	
1 2							
1 3							
1 4							
1 5							
1 6							
1 7	0	0	1 0 4	*			
1 8							
1 9							
2 0							
2 1							
2 2							
2 3	0	0	7 4	*	8 1	1	
2 4							
2 5							
2 6							
2 7							
2 8							
2 9							
3 0							
3 1							
DP →			4 3 2 1 0		4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

80%

2/3

DER form PERM 12-9 (Feb. 1976)

* flag data – construction of expressway may be affecting sample concentrations.

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA - SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

[2] Hillsborough County Enviro. Protect. Comm.
1 AGENCY

Hillsborough County
CITY NAME

92 Highway 60 &41
SITE ADDRESS

Ambient Surveillance — 24 Hours
PROJECT — TIME INTERVAL

STATE 1 0 (2 3) — AREA 4 3 6 0 (4 5 6 7) — SITE 0 4 3 (8 9 10)

AGENCY G (11) — PROJECT 0 2 (12 13) — TIME 7 (14) — YEAR 8 1 (15 16) — MONTH 0 4 (17 18)

	Total Susp. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	1 2 4 0 3 (37 38 39 40 41)	1 2 1 2 8 (51 52 53 54 55)	(65 66 67 68 69)
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1						
0 2						
0 3						
0 4	0	0	86 *	76	6	
0 5						
0 6						
0 7						
0 8						
0 9						
1 0	0	0	112 *			
1 1						
1 2						
1 3						
1 4						
1 5						
1 6	0	0	115 *	108	4	
1 7						
1 8						
1 9						
2 0						
2 1						
2 2	0	0	97 *			
2 3						
2 4						
2 5						
2 6						
2 7						
2 8	0	0	115 *	122	9	
2 9						
3 0						
3 1						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

DER form PERM 12-9 (Feb. 1976) 100%

* - flag data - continued road construction could influence sample concentrations.

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
[illegible] OR GREATER SAMPLING INTERVAL

2 Hillsborough County Enviro. Protect. Comm.
AGENCY
Hillsborough County
CITY NAME
92 Highway 60 &41
SITE ADDRESS
Ambient Surveillance
PROJECT
24 Hours
TIME INTERVAL

STATE	AREA	SITE
1 0	4 3 6 0	0 4 3
2 3	4 5 6 7	8 9 10

AGENCY	PROJECT	TIME	YEAR	MONTH
G	0 2	7	8 1	0 5
11	12 13	14	15 16	17 18

	Total Susp. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1	1 2 4 0 3	1 2 1 2 8	
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1	9 2	9 2	
	28 29	42 43	56 57	70 71
UNITS	0 1	0 1	0 1	
	30 31	44 45	58 59	72 73
DP	0	1	1	
	32	46	60	74

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1						
0 2						
0 3						
0 4	0	0	1 2 2 *	1 3 7	6	
0 5						
0 6						
0 7						
0 8						
0 9						
1 0						
1 1						
1 2						
1 3						
1 4						
1 5						
1 6						
1 7						
1 8						
1 9						
2 0						
2 1						
2 2						
2 3						
2 4						
2 5						
2 6						
2 7						
2 8	0	0	6 2 *	1 1 3	3	
2 9						
3 0						
3 1						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

40%

* - Flag data due to construction in [illegible]

DER form PERM 12-9 (Feb. 1976)

1

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

1 [2] Hillsborough County Env. Protection Commission
AGENCY

Tampa
CITY NAME

#1 Health Department--1105 E. Kennedy
SITE ADDRESS

Ambient Surveillance
PROJECT

24 hours
TIME INTERVAL

STATE [1][0] AREA [4][3][6][0] SITE [0][0][2]
2 3 4 5 6 7 8 9 10

AGENCY [G] 11 PROJECT [0][1] 12 13 TIME [7] 14 YEAR [8][0] 15 16 MONTH [0][5] 17 18

	Total Susp. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1 23 24 25 26 27	1 2 4 0 3 37 38 39 40 41	1 2 1 2 8 51 52 53 54 55	 65 66 67 68 69
METHOD	9 1 28 29	9 2 42 43	9 2 56 57	 70 71
UNITS	0 1 30 31	0 1 44 45	0 1 58 59	 72 73
DP	0 32	1 46	1 60	 74

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1						
0 2						
0 3	0	0	1 0 5	1 9 7	3	
0 4						
0 5						
0 6						
0 7						
0 8						
0 9	0	0	5 7		2	
1 0						
1 1						
1 2						
1 3						
1 4						
1 5	0	0	1 0 4	1 4 9	4	
1 6						
1 7						
1 8						
1 9						
2 0						
2 1	0	0	9 7	1 3 5	2	
2 2						
2 3						
2 4						
2 5						
2 6						
2 7	0	0	1 0 8		4	
2 8						
2 9						
3 0						
3 1						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

100%

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

Appr. 8/14/80

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	0	2
2	3	4	5	6	7	8	9	10

AGENCY: 2 Hillsborough County Env. Protection Commission (1)
CITY NAME: Tampa
SITE ADDRESS: #1 Health Department--1105 E. Kennedy
PROJECT: Ambient Surveillance
TIME INTERVAL: 24 hours

AGENCY	PROJECT	TIME	YEAR	MONTH
G	0 1	7	8 0	0 6
11	12 13	14	15 16	17 18

	Total Susp. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1	1 2 4 0 3	1 2 1 2 8	
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19 20	SI 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
01						
02	0	0	86		3	
03						
04						
05						
06						
07						
08	0	0	79	36	1	
09						
10						
11						
12						
13						
14	0	0	105		3	
15						
16						
17						
18						
19						
20	0	0	50	97	2	
21						
22						
23						
24						
25						
26	0	0	76		2	
27						
28						
29						
30						
31						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

DER form PERM 12-9 (Feb. 1976)

100%

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Env. Protection Commission
1 AGENCY

Tampa
CITY NAME

#1 Health Department--1105 E. Kennedy
SITE ADDRESS

Ambient Surveillance — 24 hours
PROJECT — TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	0	2
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT		TIME	YEAR		MONTH	
G	0	1	7	8	0	0	7
11	12	13	14	15	16	17	18

	Total Susp. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	11101 (23 24 25 26 27)	12403 (37 38 39 40 41)	12128 (51 52 53 54 55)	(65 66 67 68 69)
METHOD	91 (28 29)	92 (42 43)	92 (56 57)	(70 71)
UNITS	01 (30 31)	01 (44 45)	01 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
01						
02	0	0	76	89	3	
03						
04						
05						
06						
07						
08	0	0	100		5	
09						
10						
11						
12						
13						
14	0	0	70	155	2	
15						
16						
17						
18						
19						
20	0	0	52		4	
21						
22						
23						
24						
25						
26	0	0	108	94	3	
27						
28						
29						
30						
31						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

100%

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Env. Protection Commission
1 AGENCY

Tampa
CITY NAME

#1 Health Department--1105 E. Kennedy
SITE ADDRESS

Ambient Surveillance
PROJECT

24 hours
TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	0	2
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT	TIME	YEAR	MONTH
G	01	7	80	08
11	12 13	14	15 16	17 18

	Total Susp. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	11101	12403	12128	
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	91	92	92	
	28 29	42 43	56 57	70 71
UNITS	01	01	01	
	30 31	44 45	58 59	72 73
DP	0	1	1	
	32	46	60	74

DAY 19 20	ST HR 21 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
01	00	98		4	
02					
03					
04					
05					
06					
07	00	84	83	2	
08					
09					
10					
11					
12					
13	00	71		25	
14					
15					
16					
17					
18					
19	00	68	118	3	
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31	00	47	109	2	
	DP →	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

837o

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 (1) Hillsborough County Env. Protection Commission
AGENCY

STATE 1 0 (2 3) AREA 4 3 6 0 (4 5 6 7) SITE 0 0 2 (8 9 10)

Tampa
CITY NAME

#1 Health Department--1105 E. Kennedy
SITE ADDRESS

Ambient Surveillance
PROJECT

24 hours
TIME INTERVAL

AGENCY G (11) PROJECT 0 1 (12 13) TIME 7 (14) YEAR 8 0 (15 16) MONTH 0 9 (17 18)

	Total Susp. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	1 2 4 0 3 (37 38 39 40 41)	1 2 1 2 8 (51 52 53 54 55)	(65 66 67 68 69)
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19	DAY 20	ST 21	HR 22	33	34	35	36	47	48	49	50	61	62	63	64	75	76	77	78
0	1																		
0	2																		
0	3																		
0	4																		
0	5																		
0	6	0	0			6	0								5				
0	7																		
0	8																		
0	9																		
1	0																		
1	1																		
1	2	0	0			6	7			8	9				5				
1	3																		
1	4																		
1	5																		
1	6																		
1	7																		
1	8	0	0			9	0								4				
1	9																		
2	0																		
2	1																		
2	2																		
2	3																		
2	4	0	0			8	9		1	0	9				7				
2	5																		
2	6																		
2	7																		
2	8																		
2	9																		
3	0	0	0			6	5								6				
3	1																		

DP → 4 3 2 1 0   4 3 2 1 0   4 3 2 1 0   4 3 2 1 0

100%

DER form PERM 12 - 9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Env. Protection Commission
1 AGENCY

STATE 1 0 (2 3) AREA 4 3 6 0 (4 5 6 7) SITE 0 0 2 (8 9 10)

Tampa
CITY NAME

#1 Health Department--1105 E. Kennedy
SITE ADDRESS

Ambient Surveillance
PROJECT

24 hours
TIME INTERVAL

AGENCY G (11) PROJECT 0 1 (12 13) TIME 7 (14) YEAR 8 0 (15 16) MONTH 1 0 (17 18)

	Total Susp. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	1 2 4 0 3 (37 38 39 40 41)	1 2 1 2 8 (51 52 53 54 55)	(65 66 67 68 69)
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19	DAY 20	ST 21	HR 22	33	34	35	36	47	48	49	50		61	62	63	64	75	76	77	78
0	1																			
0	2																			
0	3																			
0	4																			
0	5																			
0	6	0	0			8	6			9	4	x				9				
0	7																			
0	8																			
0	9																			
1	0																			
1	1																			
1	2	0	0			7	6									4				
1	3																			
1	4																			
1	5																			
1	6																			
1	7																			
1	8	0	0			7	6			9	1	x				6				
1	9																			
2	0																			
2	1																			
2	2																			
2	3																			
2	4	0	0			9	8									8				
2	5																			
2	6																			
2	7																			
2	8																			
2	9																			
3	0	0	0			7	2		1	2	2	x				2				
3	1																			

DP → 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0

100%

DER form PERM 12-9 (Feb. 1976)

x - submitted with Dec. 1980 data

Area

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

1	2
AGENCY	Hillsborough County Env. Protection Commission
CITY NAME	Tampa
SITE ADDRESS	#1 Health Department--1105 E. Kennedy
PROJECT	Ambient Surveillance
TIME INTERVAL	24 hours

STATE		AREA				SITE		
2	3	4	5	6	7	8	9	10
1	0	4	3	6	0	0	0	2

AGENCY	PROJECT		TIME	YEAR		MONTH	
11	12	13	14	15	16	17	18
G	0	1	7	8	0	/	/

	Total Susp. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	11101 (23 24 25 26 27)	12403 (37 38 39 40 41)	12128 (51 52 53 54 55)	(65 66 67 68 69)
METHOD	91 (28 29)	92 (42 43)	92 (56 57)	(70 71)
UNITS	01 (30 31)	01 (44 45)	01 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1						
0 2						
0 3						
0 4						
0 5	0	0	68		4	
0 6						
0 7						
0 8						
0 9						
1 0						
1 1	0	0	148	118	4	
1 2						
1 3						
1 4						
1 5						
1 6						
1 7	0	0	59		1	
1 8						
1 9						
2 0						
2 1						
2 2						
2 3	0	0	66	130	2	
2 4						
2 5						
2 6						
2 7						
2 8						
2 9	0	0	66		8	
3 0						
3 1						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

100%

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM

24-HOUR OR GREATER SAMPLING INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	0	2
2	3	4	5	6	7	8	9	10

2 Hillsborough County Env. Protection Commission
1 AGENCY

Tampa
CITY NAME

#1 Health Department--1105 E. Kennedy
SITE ADDRESS

Ambient Surveillance
PROJECT

24 hours
TIME INTERVAL

AGENCY	PROJECT		TIME	YEAR		MONTH	
G	0	1	7	8	0	1	2
11	12	13	14	15	16	17	18

	Total Susp. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1	1 2 4 0 3	1 2 1 2 8	
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1	9 2	9 2	
	28 29	42 43	56 57	70 71
UNITS	0 1	0 1	0 1	
	30 31	44 45	58 59	72 73
DP	0	1	1	
	32	46	60	74

DAY 19	20	ST 21	HR 22	33	34	35	36	47	48	49	50	61	62	63	64	75	76	77	78
0	1																		
0	2																		
0	3																		
0	4																		
0	5																		
0	6																		
0	7																		
0	8																		
0	9																		
1	0																		
1	1																		
1	2																		
1	3																		
1	4																		
1	5																		
1	6																		
1	7																		
1	8																		
1	9																		
2	0																		
2	1																		
2	2																		
2	3	0	0			5	4		1	3	8				3				
2	4																		
2	5																		
2	6																		
2	7																		
2	8																		
2	9	0	0			5	5			6	1				5				
3	0																		
3	1																		

DP → 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0

40%

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA - SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

[2] ~~Hillsborough County Env. Protection Comm.~~
1 AGENCY

Tampa
CITY NAME

#1 Health Department--1105 E. Kennedy
SITE ADDRESS

Ambient Surveillance
PROJECT

24 hours
TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	0	2
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT	TIME	YEAR	MONTH
G	0 1	7	8 1	0 1
11	12 13	14	15 16	17 18

	Total Susp. Particul.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1	1 2 4 0 3	1 2 1 2 8	
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1	9 2	9 2	
	28 29	42 43	56 57	70 71
UNITS	0 1	0 1	0 1	
	30 31	44 45	58 59	72 73
DP	0	1	1	
	32	46	60	74

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1						
0 2						
0 3						
0 4						
0 5						
0 6						
0 7						
0 8						
0 9						
1 0	0	0		7 8 x	3 x	
1 1						
1 2						
1 3						
1 4						
1 5						
1 6	0	0	1 0 5		5	
1 7						
1 8						
1 9						
2 0						
2 1						
2 2	0	0	6 4	8 6	3	
2 3						
2 4						
2 5						
2 6						
2 7						
2 8	0	0	7 7		3	
2 9						
3 0						
3 1						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

60%

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 ~~Hillsborough County Env. Protection Comm~~
1 AGENCY

Tampa
CITY NAME

#1 Health Department--1105 E. Kennedy
SITE ADDRESS

Ambient Surveillance
PROJECT

~~24 hours~~ s
TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	0	2
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT		TIME	YEAR		MONTH	
G	0	1	7	8	1	0	2
11	12	13	14	15	16	17	18

	Total Susp. Particul.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1	1 2 4 0 3	1 2 1 2 8	
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19	20	ST 21	HR 22	33	34	35	36	47	48	49	50	61	62	63	64	75	76	77	78
0	1																		
0	2																		
0	3	0	0			4	3			4	1				2				
0	4																		
0	5																		
0	6																		
0	7																		
0	8																		
0	9	0	0			7	1								2				
1	0																		
1	1																		
1	2																		
1	3																		
1	4																		
1	5	0	0			5	9			7	8				1				
1	6																		
1	7																		
1	8																		
1	9																		
2	0																		
2	1	0	0			6	5								2				
2	2																		
2	3																		
2	4																		
2	5																		
2	6																		
2	7	0	0		1	5	8		1	0	1				9				
2	8																		
2	9																		
3	0																		
3	1																		

DP → 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0

100%

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA - SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Env. Protection Comm.
1 AGENCY

Tampa
CITY NAME

#1 Health Department--1105 E. Kennedy
SITE ADDRESS

Ambient Surveillance — 24 hours
PROJECT — TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	0	2
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT	TIME	YEAR	MONTH
G	0 1	7	8 1	0 3
11	12 13	14	15 16	17 18

	Total Susp. Particul.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1	1 2 4 0 3	1 2 1 2 8	
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1	9 2	9 2	
	28 29	42 43	56 57	70 71
UNITS	0 1	0 1	0 1	
	30 31	44 45	58 59	72 73
DP	0	1	1	
	32	46	60	74

DAY 19 20	SI 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
01						
02						
03						
04						
05	0	0	98		3	
06						
07						
08						
09						
10						
11	0	0		190 x		
12						
13						
14						
15						
16						
17	0	0	99			
18						
19						
20						
21						
22						
23	0	0	74	84 x		
24						
25						
26						
27						
28						
29	0	0	95			
30						
31						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

80%

x- 18 : used for sulfate sample —

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM

24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Envirn. Protect. Commission
1 AGENCY

Tampa
CITY NAME

1 Health Dept.--1105 E. Kennedy
SITE ADDRESS

Ambient Surveillance -Duplicate
PROJECT

24 Hours
TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	0	2
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT		TIME	YEAR		MONTH	
G	0	9	7	8	1	0	3
11	12	13	14	15	16	17	18

	Total Susp. Part.	Load on HiVols		
NAME PARAMETER CODE	1 1 1 0 1	1 2 1 2 8		
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1	9 2		
	28 29	42 43	56 57	70 71
UNITS	0 1	0 1		
	30 31	44 45	58 59	72 73
DP	0	1		
	32	46	60	74

DAY 19	20	ST 21	HR 22	33	34	35	36	47	48	49	50	61	62	63	64	75	76	77	78
0	1																		
0	2																		
0	3																		
0	4																		
0	5	0	0			9	7												
0	6																		
0	7																		
0	8																		
0	9																		
1	0																		
1	1	0	0		1	0	4				2								
1	2																		
1	3																		
1	4																		
1	5																		
1	6																		
1	7	0	0		1	0	8				4								
1	8																		
1	9																		
2	0																		
2	1																		
2	2																		
2	3	0	0			8	0				1								
2	4																		
2	5																		
2	6																		
2	7																		
2	8																		
2	9	0	0			9	8				0								
3	0																		
3	1																		

DP →

4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0

100%

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Envirn. Protect. Commission
1 AGENCY

Tampa
CITY NAME

1 Health Dept.--1105 E. Kennedy
SITE ADDRESS

Ambient Surveillance -Duplicate
PROJECT

24 Hours
TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	0	2
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT		TIME	YEAR		MONTH	
G	0	9	7	8	1	0	4
11	12	13	14	15	16	17	18

	Total Susp. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	11101	12403	12128	
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	91	92	92	
	28 29	42 43	56 57	70 71
UNITS	01	01	01	
	30 31	44 45	58 59	72 73
DP	0	1	1	
	32	46	60	74

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
01						
02						
03						
04	0	0	72	83	1	
05						
06						
07						
08						
09						
10	0	0	100		2	
11						
12						
13						
14						
15						
16	0	0	175	123	2	
17						
18						
19						
20						
21						
22	0	0	82		2	
23						
24						
25						
26						
27						
28	0	0	123	140	5	
29						
30						
31						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

100%

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Envirn. Protect. Commission
1 AGENCY

Tampa
CITY NAME

1 Health Dept.--1105 E. Kennedy
SITE ADDRESS

Ambient Surveillance -Duplicate
PROJECT

24 Hours
TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	0	2
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT		TIME	YEAR		MONTH	
C	0	9	7	8	1	0	5
11	12	13	14	15	16	17	18

	Total Susp. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	11101 (23 24 25 26 27)	12403 (37 38 39 40 41)	12128 (51 52 53 54 55)	(65 66 67 68 69)
METHOD	91 (28 29)	92 (42 43)	92 (56 57)	(70 71)
UNITS	01 (30 31)	01 (44 45)	01 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19 20	ST 21 HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
01					
02					
03					
04	00	124		4	
05					
06					
07					
08					
09					
10	00	83	126	2	
11					
12					
13					
14					
15					
16	00	74		2	
17					
18					
19					
20					
21					
22	00	112	106	2	
23					
24					
25					
26					
27					
28					
29					
30					
31					
DP →		4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

80%

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Environ. Protect. Comm.
1 AGENCY

STATE		AREA			SITE			
1	0	4	3	6	0	0	5	1
2	3	4	5	6	7	8	9	10

CITY NAME
115 Hooker's Point
SITE ADDRESS
Ambient Surveillance
PROJECT
24 Hours
TIME INTERVAL

AGENCY	PROJECT	TIME	YEAR	MONTH
G	02	7	80	05
11	12 13	14	15 16	17 18

	Total Susp. Part.	Nitrogen Dioxide	Sulfates	Lead on HiVols
NAME PARAMETER CODE	11101 (23 24 25 26 27)	42602 (37 38 39 40 41)	12403 (51 52 53 54 55)	12128 (65 66 67 68 69)
METHOD	91 (28 29)	84 (42 43)	92 (56 57)	92 (70 71)
UNITS	01 (30 31)	08 (44 45)	01 (58 59)	µg/m³ 01 (72 73)
DP	0 (32)	0 (46)	1 (60)	1 (74)

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
01						
02						
03	0	0	82	20	186	2
04						
05						
06	0	0	88			
07						
08						
09	0	0	48	8		
10						
11						
12						
13						
14						
15	0	0	57	18	109	3
16						
17						
18	0	0	64			
19						
20						
21	0	0	74	16	121	1
22						
23						
24						
25						
26						
27	0	0	93	13		
28						
29						
30						
31						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

100% + 2

100%

DER form PERM 12 - 9 (Feb. 1976)

3.6

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM

24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Environ. Protect. Comm.
1 AGENCY

STATE 1 0 AREA 4 3 6 0 SITE 0 5 1
2 3 4 5 6 7 8 9 10

CITY NAME

#115 Hooker's Point
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

AGENCY G (11) PROJECT 0 2 (12 13) TIME 7 (14) YEAR 8 0 (15 16) MONTH 0 6 (17 18)

	Total Susp. Part.	Nitrogen Dioxide	Sulfates	Lead on HiVols
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	4 2 6 0 2 (37 38 39 40 41)	1 2 4 0 3 (51 52 53 54 55)	1 2 1 2 8 (65 66 67 68 69)
METHOD	9 1 (28 29)	8 4 (42 43)	9 2 (56 57)	9 2 (70 71)
UNITS	0 1 (30 31)	0 8 (44 45)	0 1 (58 59)	0 1 (72 73)
DP	0 (32)	0 (46)	1 (60)	1 (74)

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1						
0 2	0	0	68	10		
0 3						
0 4						
0 5	0	0	126			
0 6						
0 7						
0 8	0	0	73		156	1
0 9						
1 0						
1 1	0	0	76			
1 2						
1 3						
1 4	0	0	93	7		
1 5						
1 6						
1 7						
1 8						
1 9						
2 0	0	0	37	8	98	0
2 1						
2 2						
2 3						
2 4						
2 5						
2 6	0	0	64	8		
2 7						
2 8						
2 9	0	0	114			
3 0						
3 1						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

100% +3

80%

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Environ. Protect. Comm.
1 AGENCY

CITY NAME
115 Hooker's Point
SITE ADDRESS
Ambient Surveillance
PROJECT
24 Hours
TIME INTERVAL

STATE		AREA				SITE			
1	0	4	3	6	0	0	5	1	
2	3	4	5	6	7	8	9	10	

AGENCY	PROJECT		TIME	YEAR		MONTH	
G	0	2	7	8	0	0	7
11	12	13	14	15	16	17	18

	Total Susp. Part.	Nitrogen Dioxide	Sulfates	Lead on HiVols
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	4 2 6 0 2 (37 38 39 40 41)	1 2 4 0 3 (51 52 53 54 55)	1 2 1 2 8 (65 66 67 68 69)
METHOD	9 1 (28 29)	8 4 (42 43)	9 2 (56 57)	9 2 (70 71)
UNITS	0 1 (30 31)	0 8 (44 45)	0 1 (58 59)	0 1 (72 73)
DP	0 (32)	0 (46)	1 (60)	1 (74)

DAY 19	20	ST 21	HR 22	33	34	35	36	47	48	49	50	61	62	63	64	75	76	77	78
0	1																		
0	2	0	0		1	2	9			1	9		1	2	9				3
0	3																		
0	4																		
0	5																		
0	6																		
0	7																		
0	8	0	0			8	0			2	9								
0	9																		
1	0																		
1	1																		
1	2																		
1	3																		
1	4	0	0			5	9			1	2		1	5	3				1
1	5																		
1	6																		
1	7																		
1	8																		
1	9																		
2	0	0	0			5	6			1	3								
2	1																		
2	2																		
2	3	0	0			6	5												
2	4																		
2	5																		
2	6	0	0			7	8			1	0		1	0	6				0
2	7																		
2	8																		
2	9	0	0			4	9												
3	0																		
3	1																		

DP → 4 3 2 1 0   4 3 2 1 0   4 3 2 1 0   4 3 2 1 0

100% + 2

100%

DER form PERM 12-9 (Feb. 1976)

3, 4

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Environ. Protect. Comm.
1 AGENCY

STATE 1 0 AREA 4 3 6 0 SITE 0 5 1
2 3 4 5 6 7 8 9 10

CITY NAME
115 Hooker's Point
SITE ADDRESS
Ambient Surveillance
PROJECT
24 Hours
TIME INTERVAL

AGENCY G (11) PROJECT 0 2 (12 13) TIME 7 (14) YEAR 8 0 (15 16) MONTH 0 8 (17 18)

Total Susp. Part.
NAME PARAMETER CODE 1 1 1 0 1 (23 24 25 26 27)
METHOD 9 1 (28 29) UNITS 0 1 (30 31) DP 0 (32)

Nitrogen Dioxide
NAME PARAMETER CODE 4 2 6 0 2 (37 38 39 40 41)
METHOD 8 4 (42 43) UNITS 0 8 (44 45) DP 0 (46)

Sulfates
NAME PARAMETER CODE 1 2 4 0 3 (51 52 53 54 55)
METHOD 9 2 (56 57) UNITS 0 1 (58 59) DP 1 (60)

Lead on HiVols
NAME PARAMETER CODE 1 2 1 2 8 (65 66 67 68 69)
METHOD 9 2 (70 71) UNITS 0 1 (72 73) DP 1 (74)

DAY 19	20	ST 21	HR 22	33	34	35	36	47	48	49	50	61	62	63	64	75	76	77	78
0	1	0	0			6	4			1	8								
0	2																		
0	3																		
0	4																		
0	5																		
0	6																		
0	7	0	0			8	5				7		1	2	6				2
0	8																		
0	9																		
1	0																		
1	1																		
1	2																		
1	3	0	0			3	6				7								
1	4																		
1	5																		
1	6	0	0			8	8												
1	7																		
1	8																		
1	9	0	0			5	2						1	2	5				2
2	0																		
2	1																		
2	2																		
2	3																		
2	4																		
2	5	0	0			6	1				2								
2	6																		
2	7																		
2	8																		
2	9																		
3	0																		
3	1	0	0			4	6				4		1	2	6				1

DP → 4 3 2 1 0   4 3 2 1 0   4 3 2 1 0   4 3 2 1 0

100%+1   83%

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 (1) Hillsborough County Environ. Protect. Comm.
AGENCY

CITY NAME
115 Hooker's Point
SITE ADDRESS
Ambient Surveillance
PROJECT
24 Hours
TIME INTERVAL

	STATE		AREA				SITE		
1	0	4	3	6	0	0	5	1	
2	3	4	5	6	7	8	9	10	

AGENCY	PROJECT	TIME	YEAR	MONTH
G	02	7	80	09
11	12 13	14	15 16	17 18

	Total Susp. Part.	Nitrogen Dioxide	Sulfates	Lead on HiVols
NAME PARAMETER CODE	11101 (23–27)	42602 (37–41)	12403 (51–55)	12128 (65–69)
METHOD	91 (28 29)	84 (42 43)	92 (56 57)	92 (70 71)
UNITS	01 (30 31)	08 (44 45)	01 (58 59)	01 (72 73)
DP	0 (32)	0 (46)	1 (60)	1 (74)

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1						
0 2						
0 3						
0 4						
0 5						
0 6	0	0	54	3		
0 7						
0 8						
0 9	0	0	99			
1 0						
1 1						
1 2	0	0	68		149	5
1 3						
1 4						
1 5						
1 6						
1 7						
1 8	0	0	81	21		
1 9						
2 0						
2 1						
2 2						
2 3						
2 4	0	0	79	17	151	4
2 5						
2 6						
2 7	0	0	59			
2 8						
2 9						
3 0	0	0	47	15		
3 1						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

100% + 2

80%

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Environ. Protect. Comm.
1 AGENCY

CITY NAME

115 Hooker's Point
SITE ADDRESS

Ambient Surveillance — 24 Hours
PROJECT — TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	5	1
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT	TIME	YEAR	MONTH
G	02	7	80	10
11	12 13	14	15 16	17 18

	Total Susp. Part.	Nitrogen Dioxide	Sulfates	Lead on HiVols
NAME PARAMETER CODE	11101 (23 24 25 26 27)	42602 (37 38 39 40 41)	12403 (51 52 53 54 55)	12128 (65 66 67 68 69)
METHOD	91 (28 29)	84 (42 43)	92 (56 57)	92 (70 71)
UNITS	01 (30 31)	08 (44 45)	01 (58 59)	01 (72 73)
DP	0 (32)	0 (46)	1 (60)	1 (74)

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
01						
02						
03						
04						
05						
06	0	0	90	24	100 x	3
07						
08						
09						
10						
11						
12	0	0	79	24		
13						
14						
15						
16						
17						
18	0	0	62	18	102 x	2
19						
20						
21						
22						
23						
24	0	0		24		
25						
26						
27						
28						
29						
30	0	0	39	10	74 x	0
31						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

80% 100%

DER form PERM 12-9 (Feb. 1976)

x - submitted with Dec. 1980 data

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM

24-HOUR OR GREATER SAMPLING INTERVAL

2 (1) Hillsborough County Environ. Protect. Comm.
AGENCY

STATE 1 0 (2 3) AREA 4 3 6 0 (4 5 6 7) SITE 0 5 1 (8 9 10)

CITY NAME
115 Hooker's Point
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

AGENCY G (11) PROJECT 0 2 (12 13) TIME 7 (14) YEAR 8 0 (15 16) MONTH 1 1 (17 18)

	Total Susp. Part.	Nitrogen Dioxide	Sulfates	Lead on HiVols
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	4 2 6 0 2 (37 38 39 40 41)	1 2 4 0 3 (51 52 53 54 55)	1 2 1 2 8 (65 66 67 68 69)
METHOD	9 1 (28 29)	8 4 (42 43)	9 2 (56 57)	9 2 (70 71)
UNITS	0 1 (30 31)	0 8 (44 45)	0 1 (58 59)	0 1 (72 73)
DP	0 (32)	0 (46)	1 (60)	1 (74)

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
01						
02						
03						
04						
05						
06						
07						
08	0	0	115			
09						
10						
11	0	0	149	22	139	2
12						
13						
14						
15						
16						
17	0	0	45	10		
18						
19						
20						
21						
22						
23	0	0	79	15	124	2
24						
25						
26						
27						
28						
29	0	0	73	30		
30						
31						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

80%

DER form PERM 12-9 (Feb. 1976) 80% +1

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM

24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Environ. Protect. Comm.
AGENCY

STATE 1 0 AREA 4 3 6 0 SITE 0 5 1 (2 3 4 5 6 7 8 9 10)

CITY NAME
\# 115 Hooker's Point
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

AGENCY G (11) PROJECT 0 2 (12 13) TIME 7 (14) YEAR 8 0 (15 16) MONTH 1 2 (17 18)

	Total Susp. Part.	Nitrogen Dioxide	Sulfates	Lead on HiVols
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	4 2 6 0 2 (37 38 39 40 41)	1 2 4 0 3 (51 52 53 54 55)	1 2 1 2 8 (65 66 67 68 69)
METHOD	9 1 (28 29)	8 4 (42 43)	9 2 (56 57)	9 2 (70 71)
UNITS	0 1 (30 31)	0 8 (44 45)	0 1 (58 59)	0 1 (72 73)
DP	0 (32)	0 (46)	1 (60)	1 (74)

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
01						
02						
03						
04						
05	0	0	92	38	89	2
06						
07						
08						
09						
10						
11	0	0	124	24	117	3
12						
13						
14						
15						
16						
17	0	0		42		
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29	0	0	57		81	3
30						
31						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

60% 60%

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Environ. Protect. Comm.
1 AGENCY

Tampa
CITY NAME

115 Hooker's Point
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	5	1
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT		TIME	YEAR		MONTH	
G	0	2	7	8	1	0	1
11	12	13	14	15	16	17	18

	Total Susp. Part.	Nitrogen Dioxide	Sulfates	Lead on HiVols
NAME PARAMETER CODE	1 1 1 0 1	4 2 6 0 2	1 2 4 0 3	1 2 1 2 8
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1 (28 29)	8 4 (42 43)	9 2 (56 57)	9 2 (70 71)
UNITS	0 1 (30 31)	0 8 (44 45)	0 1 (58 59)	0 1 (72 73)
DP	0 (32)	0 (46)	1 (60)	1 (74)

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1						
0 2						
0 3						
0 4	0	0	92	37		
0 5						
0 6						
0 7						
0 8						
0 9						
1 0	0	0	84	30	96	1
1 1						
1 2						
1 3						
1 4						
1 5						
1 6	0	0	109	29		
1 7						
1 8						
1 9						
2 0						
2 1						
2 2	0	0	90		115	3
2 3						
2 4						
2 5	0	0	77			
2 6						
2 7						
2 8	0	0		26		
2 9						
3 0						
3 1						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

80% +1

80%

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Environ. Protect. Comm.
1 AGENCY

Tampa
CITY NAME

115 Hooker's Point
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	5	1
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT	TIME	YEAR	MONTH
G	0 2	7	8 1	0 2
11	12 13	14	15 16	17 18

	Total Susp. Part.	Nitrogen Dioxide	Sulfates	Lead on HiVols
NAME PARAMETER CODE	1 1 1 0 1	4 2 6 0 2	1 2 4 0 3	1 2 1 2 8
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1 (28 29)	8 4 (42 43)	9 2 (56 57)	9 2 (70 71)
UNITS	0 1 (30 31)	0 8 (44 45)	0 1 (58 59)	0 1 (72 73)
DP	0 (32)	0 (46)	1 (60)	1 (74)

DAY 19 20	SI 21	IIR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1						
0 2						
0 3	0	0	58		65	1
0 4						
0 5	0	0				
0 6						
0 7						
0 8						
0 9	0	0		17		
1 0						
1 1						
1 2	0	0	71			
1 3						
1 4						
1 5	0	0	43	10	49	0
1 6						
1 7						
1 8	0	0	64			
1 9						
2 0						
2 1	0	0	63	27		
2 2						
2 3						
2 4	0	0	56			
2 5						
2 6						
2 7	0	0	210	57	124	35
2 8						
2 9						
3 0						
3 1						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

80% +3

60%

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Environ. Protect. Comm.
AGENCY
Tampa
CITY NAME
115 Hooker's Point
SITE ADDRESS
Ambient Surveillance
PROJECT
24 Hours
TIME INTERVAL

STATE: 1 0 (2 3)
AREA: 4 3 6 (4 5 6)
SITE: 0 0 5 1 (7 8 9 10)

AGENCY: G (11)
PROJECT: 0 2 (12 13)
TIME: 7 (14)
YEAR: 8 1 (15 16)
MONTH: 0 3 (17 18)

	Total Susp. Part.	Nitrogen Dioxide	Sulfates	Lead on HiVols
NAME PARAMETER CODE	1 1 1 0 1 (23–27)	4 2 6 0 2 (37–41)	1 2 4 0 3 (51–55)	1 2 1 2 8 (65–69)
METHOD	9 1 (28 29)	8 4 (42 43)	9 2 (56 57)	9 2 (70 71)
UNITS	0 1 (30 31)	0 8 (44 45)	0 1 (58 59)	0 1 (72 73)
DP	0 (32)	0 (46)	1 (60)	1 (74)

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1						
0 2						
0 3						
0 4						
0 5	0	0	54		66	
0 6						
0 7						
0 8						
0 9						
1 0						
1 1	0	0	103	31	99	2
1 2						
1 3						
1 4						
1 5						
1 6						
1 7	0	0	93	29		
1 8						
1 9						
2 0						
2 1						
2 2						
2 3	0	0	69	11	69	0
2 4						
2 5						
2 6						
2 7						
2 8						
2 9	0	0	76	16		
3 0						
3 1						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

100%

80%

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

1	2	Hillsborough County Environ. Protect. Comm.	AGENCY
		Tampa	CITY NAME
		# 115 Hooker's Point	SITE ADDRESS
		Ambient Surveillance	PROJECT
		24 Hours	TIME INTERVAL

STATE		AREA			SITE			
1	0	4	3	6	0	0	5	1
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT		TIME	YEAR		MONTH	
G	0	2	7	8	1	0	4
11	12	13	14	15	16	17	18

	Total Susp. Part.	Nitrogen Dioxide	Sulfates	Lead on HiVols
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	4 2 6 0 2 (37 38 39 40 41)	1 2 4 0 3 (51 52 53 54 55)	1 2 1 2 8 (65 66 67 68 69)
METHOD	9 1 (28 29)	8 4 (42 43)	9 2 (56 57)	9 2 (70 71)
UNITS	0 1 (30 31)	0 8 (44 45)	0 1 (58 59)	0 1 (72 73)
DP	0 (32)	0 (46)	1 (60)	1 (74)

DAY 19 20	SI 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1	0	0	44			
0 2						
0 3						
0 4	0	0	84	13	91	10
0 5						
0 6						
0 7	0	0	128			
0 8						
0 9						
1 0	0	0	115	17		
1 1						
1 2						
1 3						
1 4						
1 5						
1 6	0	0	152	13	129	1
1 7						
1 8						
1 9						
2 0						
2 1						
2 2	0	0	99	22		
2 3						
2 4						
2 5						
2 6						
2 7						
2 8	0	0	120	26	168	3
2 9						
3 0						
3 1						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

100% +2

100%

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA - SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Environ. Protect. Comm.
AGENCY
Tampa
CITY NAME
115 Hooker's Point
SITE ADDRESS
Ambient Surveillance
PROJECT
24 Hours
TIME INTERVAL

STATE		AREA					SITE	
1	0	4	3	6	0	0	5	1
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT		TIME	YEAR		MONTH	
G	0	2	7	8	1	0	5
11	12	13	14	15	16	17	18

	Total Susp. Part.	Nitrogen Dioxide	Sulfates	Lead on HiVols
NAME PARAMETER CODE	1 1 1 0 1	4 2 6 0 2	1 2 4 0 3	1 2 1 2 8
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1 (28 29)	8 4 (42 43)	9 2 (56 57)	9 2 (70 71)
UNITS	0 1 (30 31)	ppb 0 8 (44 45)	µg/m³ 0 1 (58 59)	0 1 (72 73)
DP	0 (32)	0 (46)	1 (60)	1 (74)

DAY 19	DAY 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0	1						
0	2						
0	3						
0	4	0	0	109	16		
0	5						
0	6						
0	7	0	0	37			
0	8						
0	9						
1	0	0	0	56	8	151	1
1	1						
1	2						
1	3						
1	4						
1	5						
1	6	0	0	75	19		
1	7						
1	8						
1	9	0	0	83			
2	0						
2	1						
2	2	0	0	112	16	130	3
2	3						
2	4						
2	5						
2	6						
2	7						
2	8	0	0	52	11		
2	9						
3	0						
3	1						
DP →				4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

DER form PERM 12-9 (Feb. 1976)

100%+2

100%

63

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

1	AGENCY	2 Hillsborough County Env. Protection Commission	STATE 2-3	1 0	AREA 4-7	4 3 6 0	SITE 8-10	0 3 5		

CITY NAME: Tampa

SITE ADDRESS: #63 Davis Islands Coast Guard Station

PROJECT: Ambient Surveillance

TIME INTERVAL: 24 Hours

AGENCY 11	PROJECT 12 13	TIME 14	YEAR 15 16	MONTH 17 18
G	0 2	7	8 0	0 5

	Total Sus. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	1 2 4 0 3 (37 38 39 40 41)	1 2 1 2 8 (51 52 53 54 55)	(65 66 67 68 69)
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19	DAY 20	ST 21	HR 22	33	34	35	36	47	48	49	50	61	62	63	64	75	76	77	78
0	1																		
0	2																		
0	3	0	0		1	1	7		1	9	9				2				
0	4	0	0			9	9												
0	5																		
0	6																		
0	7																		
0	8																		
0	9	0	0			6	0		1	0	7								
1	0	0	0			6	5												
1	1																		
1	2																		
1	3																		
1	4																		
1	5	0	0			8	8		1	1	0				2				
1	6																		
1	7	0	0			6	4												
1	8	0	0			6	5												
1	9																		
2	0																		
2	1	0	0			8	2		1	2	7				0				
2	2																		
2	3																		
2	4	0	0			7	4												
2	5																		
2	6																		
2	7	0	0		1	1	0		2	1	9								
2	8																		
2	9																		
3	0																		
3	1	0	0		1	1	3												

DP → 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0

100% + 6

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

	STATE	AREA	SITE
2 Hillsborough County Env. Protection Commission	1 0	4 3 6 0	0 3 5
1 AGENCY	2 3	4 5 6 7	8 9 10

Tampa
CITY NAME

#53 Davis Islands Coast Guard Station
SITE ADDRESS

AGENCY	PROJECT	TIME	YEAR	MONTH
G	0 2	7	8 0	0 6
11	12 13	14	15 16	17 18

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

	Total Sus. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1	1 2 4 0 3	1 2 1 2 8	
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1	9 2	9 2	
	28 29	42 43	56 57	70 71
UNITS	0 1	0 1	0 1	
	30 31	44 45	58 59	72 73
DP	0	1	1	
	32	46	60	74

DAY 19	20	ST 21	HR 22	33	34	35	36	47	48	49	50	61	62	63	64	75	76	77	78
0	1	0	0			8	8												
0	2	0	0			9	7		1	4	4								
0	3																		
0	4																		
0	5																		
0	6																		
0	7	0	0			9	5												
0	8	0	0			9	4		1	5	0				1				
0	9																		
1	0																		
1	1																		
1	2																		
1	3																		
1	4	0	0		1	1	2		2	2	1								
1	5	0	0			9	0												
1	6																		
1	7																		
1	8																		
1	9																		
2	0	0	0			4	3		1	1	7				1				
2	1	0	0			4	4												
2	2																		
2	3																		
2	4																		
2	5																		
2	6	0	0			7	0			4	7								
2	7																		
2	8	0	0			8	1												
2	9	0	0		1	1	2												
3	0																		
3	1																		
		DP →		4 3	2	1	0	4 3	2	1	0	4 3	2	1	0	4 3	2	1	0

100% +6

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Env. Protection Commission
1 AGENCY

STATE 1 0 | AREA 4 3 6 0 | SITE 0 3 5
2 3 4 5 6 7 8 9 10

Tampa
CITY NAME

#63 Davis Islands Coast Guard Station
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

AGENCY G (11) | PROJECT 0 2 (12 13) | TIME 7 (14) | YEAR 8 0 (15 16) | MONTH 0 7 (17 18)

	Total Sus. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	1 2 4 0 3 (37 38 39 40 41)	1 2 1 2 8 (51 52 53 54 55)	(65 66 67 68 69)
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1						
0 2	0	0	105	104	3	
0 3						
0 4						
0 5	0	0	67			
0 6						
0 7						
0 8	0	0	99	181		
0 9						
1 0						
1 1						
1 2						
1 3						
1 4						
1 5	0	0	87	150	2	
1 6						
1 7						
1 8						
1 9	0	0	54			
2 0	0	0	56	142		
2 1						
2 2						
2 3						
2 4						
2 5						
2 6	0	0	89	111	1	
2 7	0	0	96			
2 8						
2 9						
3 0						
3 1						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

80% +4

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

STATE		AREA			SITE			
1	0	4	3	6	0	0	3	5
2	3	4	5	6	7	8	9	10

2 Hillsborough County Env. Protection Commission
1 AGENCY

Tampa
CITY NAME

#63 Davis Islands Coast Guard Station
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

AGENCY	PROJECT	TIME	YEAR	MONTH
G	0 2	7	8 0	0 8
11	12 13	14	15 16	17 18

	Total Sus. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1	1 2 4 0 3	1 2 1 2 8	
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1	0	0	75	115		
0 2	0	0	101			
0 3						
0 4						
0 5						
0 6						
0 7	0	0	87	155	1	
0 8						
0 9	0	0	69			
1 0						
1 1						
1 2						
1 3	0	0	42	89		
1 4						
1 5						
1 6	0	0	88			
1 7	0	0	78			
1 8						
1 9	0	0	65	152	2	
2 0						
2 1						
2 2						
2 3	0	0	64			
2 4	0	0	56			
2 5	0	0	53	78		
2 6						
2 7						
2 8						
2 9						
3 0	0	0	61			
3 1	0	0	50	120	1	
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

100%+7

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

1 AGENCY: 2 Hillsborough County Env. Protection Commission

STATE (2 3) 1 0 | AREA (4 5 6 7) 4 3 6 0 | SITE (8 9 10) 0 3 5

CITY NAME: Tampa

SITE ADDRESS: #63 Davis Islands Coast Guard Station

PROJECT: Ambient Surveillance

TIME INTERVAL: 24 Hours

AGENCY (11): G | PROJECT (12 13): 0 2 | TIME (14): 7 | YEAR (15 16): 8 0 | MONTH (17 18): 0 9

	Total Sus. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	1 2 4 0 3 (37 38 39 40 41)	1 2 1 2 8 (51 52 53 54 55)	(65 66 67 68 69)
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1						
0 2						
0 3						
0 4						
0 5						
0 6	0	0	7 1	1 2 0		
0 7	0	0	5 4			
0 8						
0 9						
1 0						
1 1						
1 2	0	0	7 4	1 7 4	3	
1 3	0	0	5 8			
1 4						
1 5						
1 6						
1 7						
1 8	0	0	6 9	1 5 5		
1 9						
2 0	0	0	6 8			
2 1						
2 2						
2 3						
2 4	0	0	8 5	1 0 5	3	
2 5						
2 6						
2 7	0	0	5 9			
2 8	0	0	4 9			
2 9						
3 0	0	0	5 0	8 1		
3 1						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

100% + 5

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Env. Protection Commission
1 AGENCY

STATE 1 0 AREA 4 3 6 0 SITE 0 3 5
2 3 4 5 6 7 8 9 10

Tampa
CITY NAME

#63 Davis Islands Coast Guard Station
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

AGENCY G (11) PROJECT 0 2 (12 13) TIME 7 (14) YEAR 8 0 (15 16) MONTH 1 0 (17 18)

Total Sus. Part.
NAME
PARAMETER CODE 1 1 1 0 1 (23 24 25 26 27)
METHOD 9 1 (28 29) UNITS 0 1 (30 31) DP 0 (32)

Sulfates
NAME
PARAMETER CODE 1 2 4 0 3 (37 38 39 40 41)
METHOD 9 2 (42 43) UNITS 0 1 (44 45) DP 1 (46)

Lead on HiVols
NAME
PARAMETER CODE 1 2 1 2 8 (51 52 53 54 55)
METHOD 9 2 (56 57) UNITS 0 1 (58 59) DP 1 (60)

NAME
PARAMETER CODE (65 66 67 68 69)
METHOD (70 71) UNITS (72 73) DP (74)

DAY 19	DAY 20	ST 21	HR 22	33	34	35	36	47	48	49	50		61	62	63	64	75	76	77	78
0	1																			
0	2																			
0	3																			
0	4	0	0			7	9													
0	5	0	0			7	7													
0	6	0	0			8	9		1	5	4	x				2				
0	7																			
0	8																			
0	9																			
1	0																			
1	1	0	0		1	0	0													
1	2	0	0			5	3			6	8	x								
1	3																			
1	4																			
1	5																			
1	6																			
1	7																			
1	8	0	0			9	0		1	0	6	x				2				
1	9	0	0			7	5													
2	0																			
2	1																			
2	2																			
2	3																			
2	4	0	0			8	0		1	0	0	x								
2	5	0	0			6	7													
2	6																			
2	7																			
2	8																			
2	9																			
3	0	0	0			5	3		1	0	6	x				3				
3	1																			

DP →　4 3 2 1 0　4 3 2 1 0　4 3 2 1 0　4 3 2 1 0

DER form PERM 12-9 (Feb. 1976)　100% + 5

x - Submitted with Dec, 1980 data

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

1 AGENCY	STATE 2 3	AREA 4 5 6 7	SITE 8 9 10
2 Hillsborough County Env. Protection Commission	1 0	4 3 6 0	0 0 3 5

CITY NAME: Tampa
SITE ADDRESS: #63 Davis Islands Coast Guard Station
PROJECT: Ambient Surveillance
TIME INTERVAL: 24 Hours

AGENCY 11	PROJECT 12 13	TIME 14	YEAR 15 16	MONTH 17 18
G	0 2	7	8 0	1 1

	Total Sus. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	1 2 4 0 3 (37 38 39 40 41)	1 2 1 2 8 (51 52 53 54 55)	(65 66 67 68 69)
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19	20	ST 21	HR 22	33	34	35	36	47	48	49	50	61	62	63	64	75	76	77	78
0	1	0	0			5	6												
0	2	0	0			5	4												
0	3																		
0	4																		
0	5	0	0			5	6			6	6								
0	6																		
0	7																		
0	8	0	0		1	3	9												
0	9	0	0			8	4												
1	0																		
1	1	0	0		1	6	1		1	6	2				2				
1	2																		
1	3																		
1	4																		
1	5	0	0			5	0												
1	6	0	0			5	7												
1	7	0	0			4	1		1	1	9								
1	8																		
1	9																		
2	0																		
2	1																		
2	2	0	0		1	1	0												
2	3	0	0		1	1	4		1	9	6				2				
2	4																		
2	5																		
2	6																		
2	7																		
2	8																		
2	9	0	0			6	7			8	3								
3	0	0	0			9	3												
3	1																		

DP → 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0

100% + 8

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

STATE		AREA				SITE			
1	0	4	3	6	0	0	0	3	5
2	3	4	5	6	7	8	9	10	

2 (1) Hillsborough County Env. Protection Commission
AGENCY

Tampa
CITY NAME

#63 Davis Islands Coast Guard Station
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

AGENCY	PROJECT		TIME	YEAR		MONTH	
G	0	2	7	8	0	1	2
11	12	13	14	15	16	17	18

	Total Sus. Part.	Sulfates	Lead on HiVols	
NAME PARAMETER CODE	1 1 1 0 1 (23 24 25 26 27)	1 2 4 0 3 (37 38 39 40 41)	1 2 1 2 8 (51 52 53 54 55)	(65 66 67 68 69)
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19	20	ST 21	HR 22	33	34	35	36		47	48	49	50	61	62	63	64	75	76	77	78
0	1																			
0	2																			
0	3																			
0	4																			
0	5	0	0		1	2	0	*		1	3	1				3				
0	6	0	0		1	5	0													
0	7																			
0	8																			
0	9																			
1	0																			
1	1	0	0		1	3	0				7	6								
1	2																			
1	3	0	0		1	1	6													
1	4																			
1	5																			
1	6																			
1	7	0	0			5	7			1	1	6				2				
1	8																			
1	9																			
2	0	0	0			7	7													
2	1	0	0			6	3													
2	2																			
2	3	0	0			5	0				9	3								
2	4																			
2	5																			
2	6																			
2	7	0	0			4	6													
2	8																			
2	9	0	0			7	6				7	6				2				
3	0																			
3	1																			

DP → 4 3 2 1 0 4 3 2 1 0 4 3 2 1 0 4 3 2 1 0

100% + 5

DER form PERM 12 - 9 (Feb. 1976)

*- data was flagged - see attached memo
construction in immediate area.

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Enviro. Protect. Commission
1 AGENCY

Tampa
CITY NAME

63 Davis Islands Coast Guard Station
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	3	5
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT	TIME	YEAR	MONTH
G	0 2	7	8 1	0 1
11	12 13	14	15 16	17 18

	Total Susp. Part.	Sulfates	Lead on Hivols	
NAME PARAMETER CODE	1 1 1 0 1	1 2 4 0 3	1 2 1 2 8	
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1						
0 2						
0 3	0	0	125			
0 4	0	0	112	151		
0 5						
0 6						
0 7						
0 8						
0 9						
1 0	0	0	104 *	105	1	
1 1	0	0	114 *			
1 2						
1 3						
1 4						
1 5						
1 6	0	0	138 *	109		
1 7	0	0	134 *			
1 8						
1 9						
2 0						
2 1						
2 2	0	0	73 *	110	2	
2 3						
2 4	0	0	66 *			
2 5						
2 6						
2 7						
2 8	0	0	60 *	111		
2 9						
3 0						
3 1	0	0	136 *			
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

100% + 5

*- Flag data - construction in area most probably influenced concentrations.

DER form PERM 12-9 (Feb. 1976)

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA - SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Enviro. Protect. Commission
1 AGENCY

Tampa
CITY NAME

63 Davis Islands Coast Guard Station
SITE ADDRESS

Ambient Surveillance — 24 Hours
PROJECT — TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	3	5
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT		TIME	YEAR		MONTH	
G	0	2	7	8	1	0	2
11	12	13	14	15	16	17	18

	Total Susp. Part.	Sulfates	Lead on Hivols	
NAME PARAMETER CODE	1 1 1 0 1	1 2 4 0 3	1 2 1 2 8	
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1	9 2	9 2	
	28 29	42 43	56 57	70 71
UNITS	0 1	0 1	0 1	
	30 31	44 45	58 59	72 73
DP	0	1	1	
	32	46	60	74

DAY 19 20	ST 21	HR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0 1	0	0	108 *			
0 2						
0 3	0	0	56 *	37	1	
0 4						
0 5						
0 6						
0 7	0	0	58 *			
0 8						
0 9	0	0	67 *	81		
1 0						
1 1						
1 2						
1 3						
1 4	0	0	80 *			
1 5	0	0	87 *	179	0	
1 6						
1 7						
1 8						
1 9						
2 0						
2 1	0	0	86 *	87		
2 2	0	0	85 *			
2 3						
2 4						
2 5						
2 6						
2 7	0	0	197 *	113	9	
2 8	0	0	232 *			
2 9						
3 0						
3 1						
DP →			4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

DER form PERM 12-9 (Feb. 1976)

100% + 5

* flag data - construction on Columbia Dr. could affect sample concentrations

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Enviro. Protect. Commission
1 AGENCY

Tampa
CITY NAME

63 Davis Islands Coast Guard Station
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	3	5
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT		TIME	YEAR		MONTH	
G	0	2	7	8	1	0	3
11	12	13	14	15	16	17	18

	Total Susp. Part.	Sulfates	Lead on Hivols	
NAME PARAMETER CODE	1 1 1 0 1	1 2 4 0 3	1 2 1 2 8	
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1 (28 29)	9 2 (42 43)	9 2 (56 57)	(70 71)
UNITS	0 1 (30 31)	0 1 (44 45)	0 1 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19 20	ST 21	HR 22	33 34 35 36		47 48 49 50	61 62 63 64	75 76 77 78
0 1							
0 2							
0 3							
0 4							
0 5	0	0	79	*	79		
0 6							
0 7	0	0	98	*			
0 8							
0 9							
1 0							
1 1	0	0	133	*	106	1	
1 2							
1 3							
1 4	0	0	151	*			
1 5	0	0	126	*			
1 6							
1 7	0	0	145	*	60		
1 8							
1 9							
2 0							
2 1	0	0	129	*			
2 2							
2 3	0	0	93	*	81	1	
2 4							
2 5							
2 6							
2 7							
2 8	0	0	118	*			
2 9	0	0	102	*	145		
3 0							
3 1							
DP →			4 3 2 1 0		4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

100% + 5

DER form PERM 12-9 (Feb. 1976)

*- flag data - due to installation of sewer lines - extreamly dusty conditions exist - could be affecting sample concentrations.

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM
24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Enviro. Protect. Commission
1 AGENCY

Tampa
CITY NAME

63 Davis Islands Coast Guard Station
SITE ADDRESS

Ambient Surveillance
PROJECT

24 Hours
TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	3	5
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT		TIME	YEAR		MONTH	
G	0	2	7	8	1	0	4
11	12	13	14	15	16	17	18

	Total Susp. Part.	Sulfates	Lead on Hivols	
NAME PARAMETER CODE	1 1 1 0 1	1 2 4 0 3	1 2 1 2 8	
	23 24 25 26 27	37 38 39 40 41	51 52 53 54 55	65 66 67 68 69
METHOD	9 1	9 2	9 2	
	28 29	42 43	56 57	70 71
UNITS	0 1	0 1	0 1	
	30 31	44 45	58 59	72 73
DP	0	1	1	
	32	46	60	74

DAY 19	20	ST 21	IR 22	33 34 35 36	47 48 49 50	61 62 63 64	75 76 77 78
0	1						
0	2						
0	3						
0	4	0	0	114 *	75	2	
0	5	0	0	102 *			
0	6						
0	7						
0	8						
0	9						
1	0	0	0	104 *	134		
1	1	0	0	88 *			
1	2						
1	3						
1	4						
1	5						
1	6	0	0	144 *	168	1	
1	7						
1	8	0	0	113 *			
1	9						
2	0						
2	1						
2	2	0	0	129 *	124		
2	3						
2	4						
2	5	0	0	99 *			
2	6	0	0	96 *			
2	7						
2	8	0	0	146 *	149	3	
2	9						
3	0						
3	1						
DP ←→				4 3 2 1 0	4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

DER form PERM 12-9 (Feb. 1978)

100% + 5

* flag data – road construction in area could influence sample concentration.

DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR QUALITY INPUT FORM

SINGLE AREA – SITE FORM

24-HOUR OR GREATER SAMPLING INTERVAL

2 Hillsborough County Enviro. Protect. Commission
AGENCY

Tampa
CITY NAME

63 Davis Islands Coast Guard Station
SITE ADDRESS

Ambient Surveillance — 24 Hours
PROJECT — TIME INTERVAL

STATE		AREA				SITE		
1	0	4	3	6	0	0	3	5
2	3	4	5	6	7	8	9	10

AGENCY	PROJECT		TIME	YEAR		MONTH	
G	0	2	7	8	1	0	5
11	12	13	14	15	16	17	18

	Total Susp. Part.	Sulfates	Lead on Hivols	
NAME PARAMETER CODE	11101 (23-27)	12403 (37-41)	12128 (51-55)	(65-69)
METHOD	91 (28 29)	92 (42 43)	92 (56 57)	(70 71)
UNITS	01 (30 31)	01 (44 45)	01 (58 59)	(72 73)
DP	0 (32)	1 (46)	1 (60)	(74)

DAY 19 20	ST 21 HR 22	33 34 35 36		47 48 49 50	61 62 63 64	75 76 77 78
01						
02	00	113	*			
03						
04	00	124	*	162		
05						
06						
07						
08						
09	00	101	*			
10	00	100	*	166	1	
11						
12						
13						
14						
15						
16	00	116	*	108		
17	00	154	*			
18						
19						
20						
21						
22	00	114	*	146	2	
23	00	112	*			
24						
25						
26						
27						
28	00	122	*	105		
29						
30	00	149	*			
31	00	98	*			
DP →		4 3 2 1 0		4 3 2 1 0	4 3 2 1 0	4 3 2 1 0

DER form PERM 12-9 (Feb. 1976)

100%+6

~~100%~~

*- flag data due to construen
in area.

WIND DATA

from Davis Island Station #63
4360-035 for six-day sampling run

Time	April 27, 1980		May 3, 1980		May 9, 1980		May 15, 1980		May 21, 1980		May 27, 1980		June 2, 1980		June 8, 1980	
	Dir.	Speed	Din	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed
24-01	S	mph. 3.5	SE	mph. 3.5	S	mph. 6	VARIABLE	calm.	S/SE	mph. .5	ND	ND	ND	ND	S	5 mph.
01-02	S	6	SE	3	S	5.5	VARIABLE	calm.	ENE/E	.5	out of chart paper		Recorder hung up		S	5.5
02-03	S	6.5	SE	3.5	S	6	W/WNW NNW	.5 mph.	E/ESE/SE	.5					S	4
03-04	S	6	S/SE	3	S	5.5	WNW/NNW	1	WSW/WNW	1					SSE	2.5
04-05	S	6	S	3.5	S	4	NW/N.	3.5	NW/NNW/N	3					VARIABLE/S	2.5
05-06	S	8	SE	4	S	3.5	N	3.5	N/VARIABLE	1.5					S	2
06-07	S	8	SE	3.5	S/SE	9.5	N	4	VARIABLE	1.5					SSE/SE/ESE/E	2.5
07-08	S	7	SE	4.5	SE/SSE	4.5	NNE	5.5	N	3.5	ND	ND	ND	ND	VARIABLE SSE	1
08-09	S	6.5	SE	3	S	3	NE	5.5	VARIABLE	3	NE/E	6 mph.	ESE	7.5 mph.	S/SW	3
09-10	S	6	SSE	2	S	4	NE	6	NNE/NE/ENE	4	E/ESE	9 mph.	SSE	7.5	SW	5
10-11	S	5	SSE	2.5	SSE	5	NNE/ENE ESE	4.5	VARIABLE NNE/NE	5	ESE	10.5	SSE	7	SW/W	4
11-12	S	6.5	SSE	5	S/SSE	8	ENE	5	VARIABLE ESE	5.5	ESE/E	10.5	SE/ESE	6.5	VARIABLE/W	2.5
12-13	SSE	11	SSE	6	S	6.5	E	4.5	ESE/VARIABLE/SE	4	NE/E/ESE	10.5	VARIABLE SE	6.5	W/WNW	6
13-14	SSE	9	SSE	5	SSE	12	E/ESE/ENE	4	ESE/SE	6.5	NE/E	9	ESE/SE	6	WNW	6.5
14-15	SSE	8	SSE	5	SSE	12.5	ENE/E/ESE/SE	5	ESE/SSE	8	NNE/VARIABLE	7.5	ESE	7	WNW	7
15-16	SSE	7	SSE	6.5	SSE/S	10.5	E/ESE/SE/SSE	5.5	SSE/SE	8.5	VARIABLE/E	8.5	ESE	7.5	WNW	7.5
16-17	SSE	8.5	SSE	9	SSE	9	SE/SSE	7	SE	10.5	VARIABLE/ENE	9.5	SE/ESE	7.5	WNW	8
17-18	SSE	7	SSE	8.5	SSE	6.5	SSE	7.5	SE	14.5	NNE/E	10.5	ESE	8	NW	7.5
18-19	SSE	7	SSE	8	SSE	6	S	6	S	8	E	9.5	ESE	7.5	NW	7
19-20	SSE	11.5	SSE	8	SSE	8	S	4.5	SSE	6.5	E	10 mph.	SE	6.5	NW/WNW	4.5
20-21	SSE	7	SSE	6.5	SSE	8	SW/WSW	4.5	SE/SSE	7	E	9.5	SE	7.5	NW	4
21-22	SSE	9	SSE	6	SSE	7	S	6	SSE	6	ESE	6.5	SE	7.5	NW	3
22-23	SSE	9	SSE	6.5	S	8.5	W/WNW	5	S	5.5	ESE	6.5	SE	6.5	W	3.5
23-24	SSE	9	SSE	5.5	S	8 mph.	WNW/NW	5	VARIABLE/S	2.5	E/NE	5.5	ESE	6.5	NW	3.5

WIND DATA

from Davis Island Station #63
4360-035 for six-day sampling run

Time	June 14, 1980		June 20, 1980		June 26, 1980		July 2, 1980		July 8, 1980		July 14, 1980		July 20, 1980		July 26, 1980	
	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed
24-01	NNE	mph. 5.5	W/WSW	1.5 mph.	W	mph. 7.5	VARIABLE	mph. 1.5	recorder hung up		WNW	mph 5	SSE/E	mph. 4.5	NNW	1 mph.
01-02	NNE/NE	5	W	3	W	7	ENE/SSE	3			WNW	4.5	E/ESE	4.5	E	2
02-03	NNE/N	4.5	W	3	W	7	SSE	5			WNW	4.5	ESE	6 mph	ESE	4
03-04	NNE	6	W	4	W	8.5	SSE/SE	5.5			WNW	4.5	ENE	5	VARIABLE	2
04-05	NNE	6.5	WNW	3.5	W	8	SSE	5.5			WNW	5.5	ESE/SE/SSE	5.5	NNE/NE	calm
05-06	NNE	4.5	WNW/W	2.5	W	8	SSE	4.5			WNW	5.5	ENE	5	[illegible]	2.5
06-07	NE/NNE	4	W	3.5	W	8.5	SSE	4			WNW	5	ENE	5.5	S	3.5
07-08	NE	3.5	W	5	W	8.5	SSE	5.5			WNW	5	ENE/ESE	6	SSW	3.5
08-09	NE	6.5	W	6.5	W	8.5	S	7.5			WNW	7	SE	8	SSW/SW	5
09-10	ENE/NE	12	WNW	6.5	W	9.5	SSW	7.5			WNW	7.5	SSE	9	SW	3.5
10-11	NE/ENE	13	WSW/W	6	W	10.5	S	8			WNW	8	S	8.5	SW/WSW	5.5
11-12	E	11	W	8	W/WNW	10.5	SSW/S	7.5			WNW	7.5	SSE	8.5	WSW/W	6.5
12-13	E	10 mph.	W	9.5	NW/WNW	8.5	SSW/S	7.5			WNW	8	SSE	8.5	W	6.5
13-14	ENE/E	9.5	W/WNW	10	WNW/W	6.5	SSW	7			WNW/NW	8.5	NE	8.5	W	7.5
14-15	ESE	9	WNW	11	W/VARIABLE	5	SSE	6.5			WNW	8	NE	7	WNW	8
15-16	E	8	WNW	12.5	WNW	5.5	S	13			WNW	7.5	E/NNE/NE	5.5	WNW	8.5
16-17	ESE/E	7	W	10.5	W/WSW	6	S	10.5			WNW	7	E/ENE	6	WNW	8.5
17-18	ENE/E	65	W/WNW	8.5	WSW	9.5	SSE	9.5			WNW	6.5	E	6.5	WNW	8.5
18-19	ENE	6	WNW/W	6	W	8.5	SSE	9 mph.	no data	no data	WNW	6	VARIABLE/N	8	WNW	7.5
19-20	ENE/NE	5	W	4.5	WNW	6.5	S	8.5			WNW	5.5	N	4.5	NW/WNW	7
20-21	E/ENE	3	W	3.5	W	5	SSE	6			WNW/NW	5.5	VARIABLE	2.5	NNW	8
21-22	NE	4	W	4	WNW	5	SSE/S	8.5			NW	6.5	E/ENE/NE	3	NNW	5.5
22-23	ENE/NE	5.5	WSW	5	WNW	4.5	S	8 mph.			NW/N	5	NE	3	N	3.5
23-24	E/SE	5.5	WSW/SW	6 mph.	W	3	S	6			N/VARIABLE	5.5	ENE	5	N/NNE	1.5

8/5/80

IN DA
from Davis Island Station #65
4360-035 for six-day sampling run

Time	Aug 1, 1980		Aug. 7, 1980		Aug. 13, 1980		Aug. 19, 1980		Aug. 25, 1980		Aug. 31, 1980		Sept. 6, 1980		Sept. 12, 1980	
	Dir.	Speed	Din	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed
24-01	ESE/SSE	3.5	E	6.5	SSE/ESE	2.5	ND	ND	NE/ENE	3.5	ENE/E	3.5	ND	ND	ND	ND
01-02	SSE	3mph.	E	5.5	SSE	3	Instrument malfunction	Instrument malfunction	ENE/NE	3.5	ESE	4mph.	Recorder not functioning properly	Recorder not functioning properly	Recorder hung-up	Recorder hung-up
02-03	S	2.5	E	6.5	E/ESE/SSE	2mph.			NE/ENE	4mph.	ESE	3.5				
03-04	SSW/SW	1mph.	E	7.5	NE/SE	1.5			ENE/NE	4.5	E	3.5				
04-05	SSW	1.5	E	8.5	SE	3mph.			NE	4.5	E/ENE	3mph.				
05-06	SSW	1mph.	E	7	ESE/SSE	4.5			NE	5mph.	E/ENE	2mph.				
06-07	S	2mph.	E	7.5	SSE	9mph.			NE	5mph.	ENE	2mph.				
07-08	SW	2mph.	E	9.5	SSE	8			NE	5.5	ENE/E	3mph.				
08-09	VARIABLE/WNW	2	E	11.5	SSE	7			ENE/NE	6mph.	E/ESE	5mph.				
09-10	VARIABLE	1	E/ESE	11	S/SSE	7			ENE	6.5	E/ESE	5mph.				
10-11	VARIABLE	1.5	ESE	12mph.	S	6	ND	ND	ENE	6.5	SE/ESE	4.5				
11-12	WNW/W	4.5	ESE	12.5	SSW/S	6.5	ESE	2.5mph.	ENE	5.5	SE/ESE	3mph.				
12-13	W	5.5	ESE	13	S/SSW	8	VARIABLE	2.5	ENE	5.5	ESE	3mph.				
13-14	WNW/W	6	ESE	12.5	S	9	ESE/SE	3.5	ENE	4mph.	VARIABLE	2.5				
14-15	WNW	8.5	SE/ESE	13	S	9mph.	ND	ND	ENE	3.5	VARIABLE	3mph.				
15-16	WNW	7mph.	SE	13	SSW/S	7	ESE/E	2mph.	NE/ENE/E	2.5	VARIABLE S/W	2.5				
16-17	WNW/NW	6.5	ESE	12	S	5.5	ESE/E	3.5	E	1.5	WNW/SE/SSE	8.5mph.				
17-18	NW	7mph.	ESE	11.5	S	5.5	ENE/E/ESE	1.5	VARIABLE/S/WSW	3	S	10mph.				
18-19	NW	7mph.	ESE	8.5	S	6.5	NW/NNW	2.5	S/VARIABLE	6mph.	SSE	7mph.				
19-20	NW/NNW	5mph.	ESE	6mph.	S	6.5	ND	ND	VARIABLE	2mph.	SSE/SE	5mph.				
20-21	NNW/NW	3mph.	ESE	6.5	S/SSE	3mph.	Instrument malfunction	Instrument malfunction	ENE	4.5	ESE	4mph.				
21-22	NW	2mph.	ESE	7mph.	S	3			ENE/E	5.5	ESE/E	3mph				
22-23	NNW	1mph.	ESE	8mph.	S/SW/SSE	1.5			E	5.5	ESE	4mph.				
23-24	NNW	2.5	E	8.5	SSE	3	ND	ND	E/ENE	4.5	ESE/VARIABLE	2mph.	ND	ND	ND	ND

Aug. 1 - data corrected for 180° directional error
Rest of data permanently corrected by instrument correction. L.M.

WIND DATA
from Davis Island Station #63
4360-035 for six-day sampling run

	Sept. 18, 1980		Sept. 24, 1980		Sept. 30, 1980		Oct. 6, 1980		Oct. 12, 1980		Oct. 18, 1980		Oct. 24, 1980		Oct. 30, 1980	
Time	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed
24-01	SSE	4 mph	No data - instrument malfunction	No data - instrument malfunction	No data - instrument malfunction	No data - instrument malfunction	No data - instrument malfunction	No data - instrument malfunction	VARIABLE/SW	0.5	ND	ND	ND	ND	ND	ND
01-02	SSE	5							calm	—	Instrument malfunction	Instrument malfunction	Instrument malfunction	Instrument malfunction	Instrument malfunction	Instrument not functioning properly
02-03	SSE	7.5							Calm	—						
03-04	SSE	7 mph.							NNW	1 mph.						
04-05	SSE	6 mph.							calm	—						
05-06	SSE	4.5							Calm	—						
06-07	SSE	4							VARIABLE/N	4.5						
07-08	SSE	4.5							NE	7.5						
08-09	SSE	5.5	ESE	5	SSW	3.5	E	7 mph.	ENE	7.5						
09-10	SSE	6.5	ESE	4 mph.	SW/SSW	4.5	ENE	6.5	ENE	7 mph.					ND	
10-11	S	5.5	SE/ESE	2	S/SSW	7.5	E/ENE	5.5	E/ENE	4.5					SSW	
11-12	S	5.5	E/VARIABLE	2.5	SW	7.5	E	5.5	E/NE	3.5					SW	
12-13	S	5.5	No data - Instrument malfunction	No data - Instrument malfunction	W/WSW	7.5	E/ENE	5 mph.	N	4					SW	
13-14	SSE	4.5			ND	ND	E/ENE/ESE	6 mph.	NW/WNW	6					WSW	
14-15	S/SSW	4			ND	ND	E	6 mph.	NW/NNW	8.5					WSW	
15-16	VARIABLE/S/SSW	3 mph.			W	7 mph.	E/ENE	5.5	N	10 mph.					WSW/WNW	
16-17	W/VARIABLE/N	6 mph.			W/SW/NNW	7.5	E/ENE	6 mph.	N	9.5					WNW	
17-18	NE/SE	6 mph.			VARIABLE WSW	4.5	E/ENE	6	N	8 mph.					WNW/NW	
18-19	SE/E/NNE	5 mph.			VARIABLE SW	5	ENE	6 mph.	N	6 mph.					N	
19-20	NE/ENE/SE	3.5			S	5	E	9 mph.	N	5 mph.					N	
20-21	SE/E	2 mph.			No data instrument malfunction	No data	E	9.5	N	4.5 mph.					N	
21-22	E	4 mph.					E	9.5	N	4.5					N	
22-23	E	5 mph.					E	8.5	N	4					N	
23-24	E/ESE	4.5					E	8.5	N	4 mph.					N	ND

WIND DATA

from Davis Island Station #63
4360-035 for six-day sampling run

Time	Nov. 5, 1980		Nov. 11, 1980		Nov. 17, 1980		Nov. 23, 1980		Nov. 29, 1980		Dec. 5, 1980		Dec. 11, 1980		Dec. 17, 1980	
	Dir.	Speed	Din	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed
24-01	N	↑ wind speed non-functional	↑ No data - instrument not functioning properly	↑	↑ no data — properly	↑ wind speed non-functional	E	↑ no data - wind speed not functioning	ESE	↑ no data - wind speed not functioning	ENE	↑ no data - wind speed not functioning	S/VARIABLE	↑ no data instrument malfunction	↑ no data - instrument malfunction.	↑
01-02	N						E		ESE		ENE		N			
02-03	NNE						E		ESE		ENE		N			
03-04	NNE						E		ENE		ENE		NNE			
04-05	NE						E		ENE		ENE		N			
05-06	NE						E		ENE		ENE		N			
06-07	NE						E		ENE		ENE		N			
07-08	NE						E		ENE		ENE		NNE			
08-09	ENE						E		E		ENE		NNE			
09-10	ENE						ESE/SE		ENE		ENE		NNE			
10-11	ENE						SE		NE		ENE/E		↑ no data instrument malfunction			
11-12	ENE/NE						SE		N		E					
12-13	NNE						SE		N		E					
13-14	NNE				↓		SE		N		E					
14-15	↑ No Data - ran out of chart				S		SE		N		ESE					
15-16					S		SE		N		ESE					
16-17					S/SSW		SE		N		E					
17-18					SSW		SE		N		ESE					
18-19					SW/WSW		SE		N		ESE					
19-20					VARIABLE		SE		N		E					
20-21					W/VARIABLE		SE		NE		E					
21-22					SSW		SE		NNE		E					
22-23					S		SE		NE/VARIABLE		E					
23-24	↓	↓	↓	↓	SSW/SW	↓	SE	↓	NE/VARIABLE	↓	E	↓	↓	↓	↓	↓

WIND DATA
from Davis Island Station #63
4360-035 for six-day sampling run

Time	Dec. 23, 1980		Dec. 29, 1980		Jan 4, 1981		Jan 10, 1981		Jan 16, 1981		Jan. 22, 1981		Jan 28, 1981		Feb. 3, 1981	
	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed
24-01	NE		no data instrument malfunction	wind Speed malfunctioning	NW	no wind speed due to instrument failure	NE	no wind speed due to instrument failure	no data - Instrument not functioning	no data	N	3.5	VARIABLE/SE	1.5	N	mph 8
01-02	ENE/NE				NNW		NE				N/NE	2.5	SE	2.5	N	8.5
02-03	ENE/N				VARIABLE/E		NE				NE	2.5	VARIABLE/SE	25	N	9
03-04	NNE/NE				ENE/SE		NE				NNE	2.5	SSE	4	NE	10.5
04-05	NE/ENE				ESE/E		NE				NE	5	SSE/S	2	NE	11
05-06	N				SE/E		NE				NE	3	S/SE/VARIABLE	2	NNE	12.5
06-07	N				E/SE		NNE				NW/NE	3.5	SSE/E	2	NNE	12
07-08	N				SSE		NNE				NE	2.5	VARIABLE/ESE	2.5	NNE	11
08-09	NNE				SE/SSE		NNE				NNE	3.5	ESE/S	3	NE	11
09-10	NE/ENE				SSE/SE		NNE				ENE	4	SSE	3.5	NE	10.5
10-11	VARIABLE	wind speed malfunctioning	NE/NNE		SE		NNE				NNE	5	SSE/VARIABLE	2.5	NNE	9.5
11-12	N		NNE		SE/VARIABLE		NNE				N	6	S/SW	3	NNE	8.5
12-13	N		N		N		NE/NNE				N	8	VARIABLE/NNW	5.5	NNE	9
13-14	NNE		N		NNW		NE/NNE				N	9.5	N	9	N	8
14-15	NNE		N		N		NNE				N	9.5	N	9	N	7
15-16	NNE/NE		N		N		VARIABLE/NW				N	9.5	N	9.5	N	8
16-17	NE		No data - recorder hung up		N		NW				N	9.5	N	8	N	7.5
17-18	NE				NNW		N				N	8	N	7.5	N	8.5
18-19	NE				NW		N				N	5.5	N	6.5	N	8.5
19-20	NNE				NW/NNW		N				NW	3	N	6	N	7
20-21	NNE				NNW		N				NW	2	NNW	5	N	7
21-22	NE				N		N				VARIABLE	1.5	NNW	4	NNE	8.5
22-23	NE/ENE				N		NE				calm		NNW	3.5	NE	7
23-24	ENE				NNE		NNE				NW	1mph.	W/NNW	.25	NE	5

WIND DATA
from Davis Island Station #63
4360-035 for six-day sampling run

Time	Feb.9,1981		Feb 15,1981		Feb.21,1981		Feb.27,1981		March 5,1981		March 11,1981		March 17,1981		March 23,1981	
	Dir.	Speed	Din	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed
24-01	NNW	1.5	NE	8mph.	NNW	2.5	calm		S	9	N	4.5mph	ND	ND	ND	ND
01-02	NNE	5	ENE	8.5	NNW	1.5	calm		S	11	N	5.5	Instrument not functioning properly		Instrument not functioning properly	
02-03	NE	5.5	ENE	8.5	N	1.5	calm		S	11.5	NNE/NE	5				
03-04	ENE	5	ENE	8.5	N	4.5	calm		S	12	NE	6.5				
04-05	ENE	4	ENE	7.5	N	6	calm		S	12	NNE	6.5				
05-06	ENE	2.5	ENE	7.5	N	6.5	calm		SSW	12	NE	5				
06-07	ENE	4.5	ENE	7	N	7.5	calm		SW	13.5	NE	4				
07-08	ENE	4.5	ENE	8.5	N	5.5	calm		SSW	11	NE	3mph.			ND	ND
08-09	ENE	7	ENE	8	NNE	4.5	calm		NW	10	NE	2.5	ND	ND	ND	ND
09-10	E	7.5	ENE	8.5	NE	6.5	NE	1	NW	7	ENE	1.5	NE/ENE	7mph	N	13
10-11	E/ESE	7	E	9	NE/N	7.5	NE	1.5	N	12	ENE/NE	1.5	ENE/NE	4	N	13
11-12	E	6.5	E	11.5	NNE	7	calm		N	14	VARIABLE N	1mph	VARIABLE	2	N	13
12-13	ESE	6	E	12	N	9.5	VARIABLE/ESE	3	NNW	11.5	VARIABLE	1.5	VARIABLE	3	N	14
13-14	ESE	6.5	E	12.5	N	9.5	E	5.5	NW	11	W	4.5	W/SW/S	5	N	14
14-15	ESE	7	E	13	N	10.5	E	5	NW	12	WNW	8	S/SSW/SW	4	N	14
15-16	ESE	7	E	14	N	11.5	SE/ENE	2	NW	10.5	N	9	SW/S	5mph.	N	14
16-17	E	7	E	15	NNW	10	VARIABLE/NW	3	NW	10.5	N	8.5	WSW	5.5	N	12.5
17-18	ESE	5.5	E	12.5	N	11	NW	4.5	NW	9	N	7	SW	3.5	N	12.5
18-19	ESE	6	E	12	N	8	NNW	5	NW	7	NNW	7	WNW	4.5	N	12
19-20	ESE	6	E	11	NNW	7	NNW	2	NW	4.5	NNW	5.5	W	2	N	10
20-21	E	7	E	10.0	N	5	NNW/N	.5	NW	2.5	ND	ND	WNW/W	2.5	N	10
21-22	E	8.5	E	6.5	N	5	NNE/NE	.5	NW	3.5	Instrument malfunction		W	3	NNE	11
22-23	ESE	7	E	5.5	NNW	1	NE/E/SE	.5	NW	1.5			W	1.5	NE	12.5
23-24	ESE	6	E	8	Calm	—	SE	calm	NW	4.5			W/SW	.5mph.	NE	7.5

WIND DATA
from Davis Island Station #63
4360-035 for six-day sampling run

Time	March 29, 1981		April 4, 1981		April 10, 1981		April 16, 1981		April 22, 1981		April 28, 1981		May 4, 1981		May 10, 1981	
	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed
24-01	ND	ND	SSE	7	SE	1 mph.	No data - Instrument no functioning properly		NNE	.5	SE	1.5	SSE	3	SE/ESE	2
01-02	No data - Instrument malfunction		SSE	7	SE/E	1 mph.			ENE/E	5.5	SE	1	SE	4.5	E	1.5
02-03			SE	6	E	.5			E	6	SE	1	SE	5	SE	6.5
03-04			SE	2	SE/E	.5			E	5	SE	1	SE	5	SE/E	5.5
04-05			SE	2.5	(E)	calm			E/ENE	5	SE	.5	SE	4	E	6
05-06			SE	6	(E)	calm			ENE	4	(SE)	calm	SE	3	SE	5
06-07			SE	7.5	ENE	3			ENE	.5	ENE	1	SSE/SE	4	SE	5
07-08			SE	7.5	E	4			NE/SE	.5	SE	1.5	SSE	5.5	E/SE	3
08-09			SE/SSE	10.5	SE/ESE	5.5			E/NE/SE	.5	SE	1	SSE	6.5	VARIABLE	1.5
09-10			SSE	11.5	SE	6.5	SE	6 mph.	SE/VARIABLE	calm	No data - Instrument not functioning properly		SSE/ESE	6.5	WNW	4.5
10-11			SSE	11	SE	8.5	ESE	12	VARIABLE/SE	2.5			ESE/SE	7	SW	9
11-12			S	10	SE	7.5	ESE	11.5	SE/VARIABLE	2			SE/ESE	7	SW	9
12-13			SSE	9	SE	9.5	SE/ESE	12	WNW	3			E/VARIABLE	7	SW	11
13-14			S/SSW	8	SE	10	ESE/E	11.5	W/VARIABLE	2			SE/ESE	7	SW/WSW	9.5
14-15			S/SW	7	SE	9.5	ESE	11	W/SW	5			SE	5	W	8.5
15-16			SW/W	5	SE	10	ESE	11	WNW	8	VARIABLE	1.5	SE	4	WNW	7.5
16-17			W/WNW	5	SE	9.5	E	9.5	NW/NNW	8.5	VARIABLE	1	SE/VARIABLE	2.5	NW	7
17-18			NW/WNW	4.5	SE	10	ESE	10	N	8	N	3.5	VARIABLE/N	4.5	WNW	6.5
18-19			WNW	3	SE	10	SE	11.5	N/NNE	7.5	NNE	7	N	7	NW	5
19-20			W/SW	2	SSE	10	SE	11	N	7	NNE	5.5	NNE	5.5	W	3.5
20-21			SW/SSW	.5	SSE	8.5	SE	10	NNE/N	5.5	NE	6	NNE	3.5	SW	2
21-22			(SSW)	calm	SE	6.5	SE	8.5	NNE/NE	4.5	NNE/N	3.5	ENE/SE	3	(SW)	calm
22-23			SSE/SE	1 mph	SE	6	SE	8	NE	4.5	ENE	1	SE	4	SW/S	.5
23-24	ND	ND	SSE	7.5	SE	4.5	SE	6.5	NE	4	SE	2.5	SE	4.5	S	.5

WIND DATA
from Davis Island Station #63
4360-035 for six-day sampling run

	May 16, 1981		May 22, 1981		May 28, 1981		June 3, 1981		June 9, 1981		June 15, 198		June 21, 198		June 27, 19	
Time	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed	Dir.	Speed
24-01	N	4	E	7.5	SW/S	1.5 mph.	ESE	2 mph.	W	5 mph.						
01-02	NNW	2	E	9	SSW	.5	SE	2	W	4.5						
02-03	N	.5	E	8	SW/WSW	1	SE	1.5	W	4.5						
03-04	(NNW)	calm	E	4.5	W/NW	2.5	E	.5	W	1.5						
04-05	NNW	1	ENE	5.5	NW	3.5	ESE	1	W	2						
05-06	(NNW)	calm	ENE	4	NW	2.5	E	.5	SW	.5						
06-07	(N)	calm	ENE	5	NNW	2.5	SE	2	SW/W	1.5						
07-08	N	2	E	8.5	NNW	6	ESE/SE	4.5	W	5 mph.						
08-09	NE	2	E/ESE	8.5	NNW/N	7.5	SE/SSE	5.5	W	6						
09-10	VARIABLE	.5	E/SE	8	NNW	5.5	SSE	5	W	6.5						
10-11	SE	1.5	SE/ESE	5.5	WNW	6.5	S	4.5	W	7						
11-12	S/VARIABLE	3.5	ESE/SE	6	NW	7.5	S	2	W	7.5						
12-13	VARIABLE/WNW	4	E/ESE/SE	8	NNW/NW	8	VARIABLE	1	W	9						
13-14	W/WNW	5.5	E	7.5	NW	6.5	NW	3.5	W	8 mph.						
14-15	W	6	E/SE	8	NW	8.5	WNW	2	W	8.5						
15-16	WNW	6	SE	8.5	NW	7.5	VARIABLE	1.5	W/NW	7.5						
16-17	NW	5.5	SE	9	NNW	9 mph.	SE	7.5	W	8						
17-18	NW	6	SE	9	NW	8.5	SE	5	WNW	6						
18-19	NNW	9	SE	9.5	NNW	7.5	SE/SSW	6	NW/W	3.5						
19-20	ND	ND	SE	8	N/NW	5	VARIABLE	6.5	W	5						
20-21			SSE	7	NNW	4	SSE	2.5	W	4.5						
21-22			SSE	5.5	NNW	1.5	ESE	1	WSW	4.5						
22-23			SSE	4.5	N	1	(E)	calm	WSW	5						
23-24	ND	ND	SSE	3.5	N	1	E/ESE	1.5	SW/W	2 mph.						

APPENDIX D:

DATA ON INCREMENT CONSUMING INSTALLATION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET
ATLANTA, GEORGIA 30308

DEC 2[illegible] 1980

REF: 4AH-AF

The Honorable Bob Martinez
Mayor, City of Tampa
306 E. Jackson
Tampa, Florida 33602

RE: Tampa Electric Company
Power Generating Facility Modification
PSD-FL-040.

Dear Mayor Martinez:

I wish to bring to your attention that the Tampa Electric Company proposes to modify their power generating facility near the city of Tampa, Florida, and that emissions of air pollutants will thereby be increased. The U.S. Environmental Protection Agency (EPA) has reviewed the proposed modification under the authority of Federal Prevention of Significant Deterioration Regulations (40 CFR 52.21) and reached a preliminary determination of approval with conditions for this construction. This approval applies only to Federal regulatory requirements and has no bearing on State or local functions.

Please also be aware that the attached public notice announcing the Agency's preliminary determination, the availability of pertinent information for public scrutiny, and the opportunity for public comment will be published in a local newspaper, Tampa Tribune, in the near future. This notice has been mailed to you for your information and in accordance with regulatory requirements. You need take no action unless you wish to comment on the proposed construction.

If you have questions, please feel free to call Mr. Kent Williams, Chief, New Source Review, at 404/881-4552 or Mr. Jeffrey Shumaker of TRW Inc. at 919/541-9100. TRW is under contract to EPA, and its personnel are acting as authorized representatives of the Agency in providing aid to the Region IV PSD review program.

Sincerely yours,

KWilliams
for Tommie A. Gibbs, Chief
Air Facilities Branch

TAG:JLS:clu

Attachment

DEC 29 1980
y MAYOR'S OFFIC

PUBLIC NOTICE

A modification to an existing air pollution source is being proposed by the Tampa Electric Company near the city of Tampa, Hillsborough County, Florida. The proposed modification is the construction of a fourth coal-fired steam electric generating station with a 425 megawatt capacity. The modification will increase emissions of air pollutants by the following amounts in tons per year:

SO_2	PM	NO_x	CO	VOC
11,949	573	11,379	267	9

The maximum increment consumed by the proposed modification is as follows:

	Annual	24-Hour	3-Hour
SO_2	5%	38%	32%
PM	------------Insignificant Impact--------------		

Note that net increment consumption in the area may be less than the percentage indicated due to previous emissions reductions.

The proposed modification has been reviewed by the U.S. Environmental Protection Agency (EPA) under Federal Prevention of Significant Deterioration (PSD) Regulations (40 CFR 52.21), and EPA has made a preliminary determination that the construction can be approved provided certain conditions are met. A summary of the basis for this determination and the application for a permit submitted by Tampa Electric Company are available for public review in the office of Mr. Roger P. Stewart, Hillsborough County Environmental Protection Commission, 1900 9th Avenue, Tampa, Florida 33605.

Any person may submit written comments to EPA regarding the proposed modification. All comments, postmarked not later than 30 days from the date of this notice, will be considered by EPA in making a final determination regarding approval for construction of this source. These comments will be made available for public review at the above location. Furthermore, a public hearing can be requested by any person. Such requests should be submitted within 15 days of the date of this notice. Letters should be addressed to:

Mr. Tommie A. Gibbs, Chief
Air Facilities Branch
U.S. Environmental Protection Agency
345 Courtland Street, NE
Atlanta, Georgia 30308

APPENDIX E:

SO_2 CONTROL EQUIPMENT COST

APPENDIX E

Parameters and Procedures Utilized to Project Air Pollution Control Equipment Cost

Parameters

- 2-1,000 tpd facilities comprise the project.
- Each 1,000 tpd facility has two boilers each having air flow of 110,000 acfm.
- Desulfurization units have 90% removal efficiency.
- Sulfur content of solid waste is 0.2%.
- Interest on capital is 11.5%.
- Direct capital cost of wet and dry scrubber desulfurization equipment, based on one unit for each boiler is $16 and $24 per acfm respectively.
- Total cost of desulfurization equipment is direct capital cost times 1.5*.
- Electric power cost is 4 cents/kw.
- Disposal of waste generated by the desulfurization equipment is $9.30/ton.
- All costs in 1981 dollars.
- Equipment amorization period is 20 years.
- Cost of lime is $37.45/ton.

Procedures

- Projections of direct capital cost were obtained from several vendors and averaged to obtain $24/acfm for dry scrubbers and $16/acfm for wet scrubbers. It should be noted the dry scrubbing system requires a fabric filter which could be utilized for pariculate control. This analysis considered the total cost of a dry scrubber system applied to SO_2 control. The wet scrubber is downstream of the electrostatic precipitator utilized for particulate control. The cost of an electorstatic precipitator was not included in the cost of a wet scrubber system.

* Includes design, financing, and etc. costs.

- The operating costs of the dry scrubber system were derived from the paper "Dry System Emission Control for Municipal Incinerators" by Aaron J. Teller of Teller Environmental Systems, Inc. A yearly inflation factor of 10% was applied as appropriate.

- The operating costs of the wet scrubber system were developed as described:

Electrical power usage was projected by using the following formulas:

$$\text{Fan brake hp}^{A} = \frac{(1.524 \times 10^{-4}(V^{1})(8.5)}{0.85^{1}}$$

$$\text{Quencher Pump Brake hp} = \frac{(V_3)(2,180)}{2,968}$$

$$\text{Absorber Pump Brake hp} = \frac{\frac{(V_3) \times 2,180}{1,000}}{2,968}$$

Reagent Feed Pump Brake hp = 20

Amount of Lime = (lbs. SO_2 removed/hr) (9.1×10^{-5})

Maintenance cost was projected to be 5% of the total capital cost.

Labor costs were projected as 2/3 of the labor costs for a dry scrubber system. The lower labor projection resulted from the lack of a fabric filter in the wet scrubber system.

hp = horsepower
V_1 = airflow in acfm
$V_3 = (520/{}^{\circ}F + 460) (V_1)(1.26)$

- The projection of the waste generated by a wet scrubber system was based on a generation curve applicable to coal fired facilities (See Figure 4-13 for "FGD Sludge Sidposal Manual" by the Electric Power Research Institute). The waste generated by a dry scrubber system was based on vendor supplied information.

PROJECTS McKAY BAY
SUBJECT SO_2 Control Equipment Cost
COMPUTED JWS **CHECKED** ______ **DATE** 7-9-81 **PAGE** 1 **OF** 12

Cost of Wet Process Equipment per acfm excluding ESP:

Direct Capital Cost including ESP from DB Gas Cleaning Corp. is \$32.50 per acfm or \$14,300,000; Cost of ESP's from information provided by UOP and BFI is \$7,200,000; direct capital cost for wet process equipment for SO_2 control is \$7,100,000 or \$16.1/acfm

Direct Capital Cost for wet process equipment for SO_2 control excluding ESP's from Research - Cottrell is \$6,000,000 or \$13.6/acfm

Use => \$16/acfm

Cost of Dry Process Equipment per acfm including Baghouse

Direct Capital Cost for 260,000 acfm unit is \$21 per acfm; cost for 65,000 acfm unit is \$26/acfm according to DB Gas Cleaning Corp.

For a 110,000 acfm unit use \$24/acfm

PROJECTS McKAY BAY

SUBJECT SO_2 Control Equipment Cost

COMPUTED JWS CHECKED ______ DATE 7-9-81 PAGE 2 OF 12

Direct Capital

Dry Scrubbers:

(2 facilities)(2 units/facility)(110,000 acfm/unit)($24/acfm)*

= $10,560,000

Wet Scrubbers:

(2 facilities)(2 units/facility)(110,000 acfm/unit)($16/acfm)*

= $7,040,000

Total Capital Cost

Dry Scrubbers:

($10,560,000)(1.5**) = $15,840,000

Wet Scrubbers:

($7,040,000)(1.5**) = $10,560,000

---

* Obtained from contacts with DB Gas Cleaning Corp. and Research-Cottrell; see included correspondence and telephone memo and calculations on p.

** Includes design, financing, foundations and etc.

Utility Cost for Wet Scrubber

major cost is for energy to operate fans and pumps; develop cost for one boiler

using information provided by DB Gas Cleaning Corp.

fan brake hp (forced draft)

$$= \frac{(1.524 \times 10^{-4})(V_1)(8.5)}{0.85}$$

$$= 168$$

brake hp quencher pumps

$$= \frac{\left(\frac{V_2}{1,000}\right)(2,180)}{2,968}$$

$$= 60$$

brake hp absorber pumps

$$= \frac{\left(\frac{V_3}{1,000}\right)(2,180)}{2,968}$$

$$= 60$$

$V_1 = 110,000$ acfm

$$V_2 = \left(\frac{520}{T_1+460}\right)\left(\frac{P_2}{P_1}\right)(V_1) = \left(\frac{520}{425+460}\right)(1)(110,000) = 64,633$$

$$V_3 = V_2 \times 0.92 \times 1.37 = (64,633)(0.92)(1.37) = 81,463$$

PROJECTS McKAY BAY

SUBJECT SO_2 Control Equipment Cost

COMPUTED JWS CHECKED ______ DATE 7-10-81 PAGE 4 OF 12

brake hp reagent feed pumps = 20

Total brake hp = 308 *

= 230 kw/hrs

Total System Energy Use:

$$\left(230\ \frac{Kw/hr}{unit}\right)(4\ units)(.82\ availability)\left(\frac{\$0.04}{Kw}\right)\left(8{,}760\ \frac{hrs}{yr}\right) = \$264{,}342/yr$$

use \$264,000/yr

Utility Cost for Dry Scrubber

utility costs were based on systems produced by Teller Environmental Systems, Inc. with adjustments for scale up and inflation and energy costs; see included paper entitled "Dry Systems Emission Control for Municipal Incinerators"

$$\text{Power cost} = \left(\frac{\$40{,}000/yr}{\$0.03/kwh}\right)\left(\frac{\$0.04}{Kwh}\right)(1.10)\left(\frac{500}{300}\right)^{.9^{**}}(4) = \$370{,}771$$

use \$371,000

---

* Minor uses of energy such as agitators were ignored

** scaleup factor from "Guidance for Lowest Achievable Emission Rates from 18 . . . Organic Compounds"; EPA-450/3-79-02

PROJECTS McKAY BAY

SUBJECT SO_2 Control Equipment Cost

COMPUTED JWS CHECKED ______ DATE 7-10-81 PAGE 5 OF 12

Cost of Waste Disposal:

Waste generated by wet scrubbers

method 1 => assuming SO_2 removal characteristics are similar for coal and solid waste fired boilers; from "FGD Sludge Disposal Manual" burning 598,600* tons of fuel with 0.2% sulfur content and 90% removal efficiency results in 6,644 tons of waste per year dry weight

method 2 => from Research - Cottrell;

amt** unoxidized waste $= \left(\frac{\text{lbs } SO_2 \text{ removed}}{\text{hr}}\right)(129/64)(1/2000) + 10\%$ of required limestone

amt** oxidized waste $= \left(\frac{\text{lbs } SO_2 \text{ removed}}{\text{hr}}\right)(172/64)\left(\frac{1}{2000}\right) + 10\%$ of required limestone

amt Sulfur removed/hr $= \left(\frac{68.3 \text{ tons solid waste}}{\text{hr}}\right)(0.2\% \text{ sulfur})(90\% \text{ removal})$

$= 0.137$ tons/hr.

amt. SO_2 removed/hr $= (0.137 \text{ tons/hr.})(2) = 0.274 \frac{\text{tons}}{\text{hr}}$

---

* Facilities are on line 82% of the time

** units are tons

HDR

PROJECTS McKAY BAY

SUBJECT SO_2 Control Equipment Cost

COMPUTED JWS CHECKED ______ DATE 7-10-81 PAGE 6 OF 12

from Research-Cottrell

amt. of limestone (tons) required per hour =

$$\left(\text{lbs. } SO_2 \text{ removed/hr}\right)\left(\frac{100}{64}\right)(1.05)\left(\frac{1}{0.9}\right)\left(\frac{1}{2000}\right)$$

$$= \left(0.274 \frac{\text{tons } SO_2}{\text{hr}}\right)\left(\frac{2000 \text{ lbs}}{\text{ton}}\right)\left(\frac{100}{64}\right)(1.05)\left(\frac{1}{0.9}\right)\left(\frac{1}{2000}\right)$$

$$= 0.5 \text{ tons/hr}$$

amt. unoxidized waste =

$$\left(\frac{548 \text{ lbs } SO_2 \text{ removed}}{\text{hr}}\right)\left(\frac{129}{64}\right)\left(\frac{1}{2000}\right) + (0.1)\left(0.5 \frac{\text{tons of limestone}}{\text{hr}}\right) =$$

0.6 tons/hr. (dry wt.)

amt. oxidized waste =

$$\left(\frac{548 \text{ lbs } SO_2 \text{ removed}}{\text{hr}}\right)\left(\frac{172}{64}\right)\left(\frac{1}{2000}\right) + (0.1)\left(\frac{0.5 \text{ tons of limestone}}{\text{hr.}}\right) =$$

0.79 tons/hr (dry wt.)

Total Waste per hr. = 1.39 tons (dry wt.)

" " per year = 12,176 tons (dry wt.)

PROJECTS McKAY BAY
SUBJECT SO$_2$ CONTROL Equipment Cost
COMPUTED JWS CHECKED ______ DATE 7-10-81 PAGE 7 OF 12

the greater accuracy of method 2 requires greater weight be given to it; therefore, use a waste generation figure of 11,000 tons per year dry weight

assume waste is 70% solids after dewatering; therefore, amount of waste requiring disposal equals $\frac{11,000}{.7} = 15,714$ tons

use 15,500

Cost of Disposal for Waste from Wet Scrubber per Year $= 15,500 \frac{\text{tons}}{\text{yr}} \times \frac{\$9.30}{\text{ton}} = \$144,150$

use \$144,000

Waste generated by dry scrubber
assume same as dry wt. of waste generated by wet scrubber => 11,000 tons per year

Cost of Disposal for Waste from Dry Scrubber per Year $= \left(11,000 \frac{\text{tons}}{\text{yr}}\right)\left(\$9.30/\text{ton}\right)$

$= \$102,300$

use \$102,000

PROJECTS McKAY BAY

SUBJECT SO_2 CONTROL Equipment COST

COMPUTED JWS CHECKED ______ DATE 7-10-81 PAGE 8 OF 12

Labor Cost for Dry Scrubber

Cost per Year = (22,000*)(4**) = \$88,000

Labor Cost for Wet Scrubber

the wet scrubber does not include a particulate collection device (i.e. baghouse with a dry scrubber); therefore, labor requirements are less; estimated one less person is required

therefore cost/yr = \$66,000

---

* from "Dry System Emission Control for Municipal Incinerators" and adjusted by 10% for inflation

** estimated labor requirements are 4 times greater for 2-1,000 tpd facilities relative to a 300 tpd facility

PROJECTS McKAY BAY
SUBJECT SO_2 CONTROL EQUIPMENT COST
COMPUTED JWS **CHECKED** ______ **DATE** 7-10-81 **PAGE** 9 **OF** 12

Lime Cost for Wet Scrubber

Amt. of Limestone (tons) $= \left(0.5 \text{ tons}/\text{hr.}\right)\left(8{,}760 \text{ hrs}/\text{yr.}\right)$

$= 4{,}380$ tons

Cost of Limestone per Ton $= \$38.50^*$

Yearly Cost of Limestone $= \left(4{,}380 \text{ tons}\right)\left(\$38.50/\text{ton}\right)$

$= \$168{,}630$

use $169,000

Lime Cost for Dry Scrubber
(Includes also Reagent Cost)

$$\text{Cost} = \left(\$30{,}800^*\right)\left(\frac{2{,}000}{300}^{**}\right) = \$205{,}333$$

use $205,000

---

* from "Dry Systems Emission Control for Municipal Incinerators and adjusted by 10% for inflation

** Scaleup Factor

PROJECTS McKAY BAY

SUBJECT SO_2 Control Equipment Cost

COMPUTED JWS CHECKED ______ DATE 7-10-81 PAGE 10 OF 12

Maintenance Cost for Dry & Wet System

projected as 5% of Total Capital Cost*

Dry system => (0.05)($15,840,000)
= $792,000

Wet system => (0.05)($10,560,000)
= $528,000

Amorization Factor

interest rate = 11.5%**

life = 20 years

$$\text{factor} = \frac{.115}{1-(1+.115)^{-20}} = 0.1296$$

Yearly amorization

wet scrubber => (10,560,000)(0.1296) = $1,368,576
use $1,369,000

dry scrubber => (15,840,000)(0.1296) = $2,052,864
use $2,053,000

---

* from "Guidance for Lowest Achievable Emission ... Organic Compounds; EPA-450/3-79-024

** from "Hillsborough County Resource Recovery Project, System Configuration Report"

HDR

PROJECTS McKay Bay

SUBJECT SO2 Control Equipment Cost

COMPUTED JWS CHECKED DATE 7-10-81 PAGE 11 OF 12

Annual Cost & Annual Cost/Ton of Solid Waste

Wet System

Amorization	1,369,000
Energy	264,000
Materials	169,000
Labor	66,000
Maintenance	528,000
Waste Disposal	144,000
Total Yearly Cost	$2,540,000
Cost/Ton Solid Waste	$4.24

HDR

PROJECTS McKAY BAY

SUBJECT SO_2 Control Equipment Cost

COMPUTED JWS CHECKED ______ DATE 7-10-81 PAGE 12 OF 12

Dry System

Amorization	2,053,000
Energy	371,000
Materials	205,000
Labor	88,000
Maintenance	792,000
Waste Disposal	102,000
Total Yearly Cost	3,611,000
Cost/Ton Solid Waste	$6.03

HDR
Henningson, Durham & Richardson

TELEPHONE CONVERSATION RECORD

Project McKAY BAY Project No. 1998-01-07

Time Date 6-22-81 Arch./Engr.

~~Call to~~ Call from Mr. Gaudette; Research-Cottrell

Discussion, Agreement &/or Action

- cost of a wet SO_2 control system for 2-1000 tpd solid waste fired facilities is \$6,000,000

- cost excludes:
  - foundation
  - electrical connecting wiring
  - material unloading equipment
  - wastewater treatment

- pressure drop - 5.5 inches; includes provision for ductwork losses

- waste generated → $\frac{\text{lbs of } SO_2}{hr} \times \frac{129}{64} \times \frac{1}{200}$

  + 10% for impurities

HDR

Henningson, Durham & Richardson

TELEPHONE CONVERSATION RECORD

Project McKAY BAY Project No. R1999-01-07

Time _____ Date 6-24-81 Arch./Engr. _____

Call to P. B. Slakey
DB Gas Cleaning Corp. Call from _____

Discussion, Agreement &/or Action

- the cost for a SO_2 wet scrubber given in Mr. Slakey's letter of 6-25-81 includes an ESP;
- wet system utilizes 10 to 15 per cent less lime compared to a dry system
- dry system designed for 250,000 acfm uses 3,000 lbs/hr. of lime; a linear relationship exists between acfm and lime usage
- dry system designed for 250,000 acfm uses 60 gpm of water
- for a wet system with recirculation; water usage is approximately 0.001 gallons/acfm

D B Gas Cleaning Corp
Environmental Control Equipment
Member of the Deutsche Babcock Group

505 Wakara Way
P.O. Box 8198
Salt Lake City, Utah 84108
801-583-4059
Telex 381-511

June 25, 1981

HDR
8404 Indian Hills Drive
Omaha, Nebraska 68114

Att: Mr. Joseph Schilli

Re: Tampa Florida
Refuse Fired Power Plant

Dear Joe,

We are enclosing a general catalog which covers all the areas of equipment which DB Gas Cleaning supplies. We also enclose a copy of our Dry Absorption brochure which gives more details on our capabilities in this area.

For your budget planning on th Tampa plant we have generated the following figures. For 1000 ton/ day unit of gas flow is approximately 260,000ACFM. Dry Absorption System including absorption tower and baghouse furnished and installed, less foundations and electrical work, will cost between $20.00 and $22.00/ ACFM.

For this unit the utility requirements will be approximately:

reagent: 3,000lbs/hr
water: 60gpm
power: 150HP
compressed air: 1,000CFM at 100 psi

The utility usage for the smaller units will be proportional. For the 250 ton/ day smaller units with a gas flow of approximately 65,000ACFM we would estimate the dry scrubber system to cost approximately $26.00/ ACFM.

With a wet type system is proposed for either the large or the small unit the cost would run approximately 30-35% more than a comparable dry system. The reagent usage would be approximately 10% less than with the dry system.

We appreciate your interest in DB Gas Cleaning equipment and we look forward to being of service to you and your client.

Sincerely,

DB GAS CLEANING CORPORATION

PBSlakey

P.B. Slakey
Vice President

Enclosure

CC: Gene Mayernick
Mayernick Associates

PBS:as

FROM: RESEARCH-COTTRELL

Exhibit 10

BUDGET PRICING

I. Required Information

- A. Gas Volume
  1. Actual cubic feet per minute at specific temperature and pressure.
- B. SO_2 Removal Requirement
  1. Inlet SO_2 - lb./hr.
  2. Outlet SO_2 - lb./hr.
  3. Efficiency

II. Estimate

- A. Tower size and number
  1. From the inlet volume flowrate (V_1), temperature (T_1), and pressure (P_1), calculate standard volume flowrate (V_2).

     $$V_2 = \left(\frac{520}{(T_1+460)}\right) \text{ X } (P_2/P_1)^{*}\ V_1$$

     Where T_1 = °F
  2. From V_2 calculate saturated gas volume flowrate (V_3).

     $$V_3 = V_2 \times 0.92 \times 1.37$$
  3. From V_2 calculate cross section area of tower (A).

     $$A = V_3/540$$

---

* At elevation 0' P_1 = 760 mm Hg = P_2 (standard)
3000' P_1 = 680 " , P_2/P_1 = 1.12
4000' P_1 = 655 " , P_2/P_1 = 1.16
5000' P_1 = 633 " , P_2/P_1 = 1.20
6000' P_1 = 610 " , P_2/P_1 = 1.25

Exhibit 10

II. <u>Estimate</u>

3. Continued

A. If $A > 1236$ ft^2 (40' Ø), then more than 1 tower is required.

B. Table A is reference.

B. Budget Pricing

1. With size and number of towers use Graph I to determine budget price of FGD "standard scope".*

(a) "Standard Scope"

(i) <u>includes</u>

material & erection absorber trains complete with ducting, dampers, access, reheat, piping, pumping, instrumentation & controls, carbon steel construction with linings for corrosion protection

(ii) <u>excludes</u>

foundations, field electrical, site preparation, limestone unloading and long-term storage, primary and secondary dewatering.

2. Adders

(a) Alloy materials +20% (Graph I)

(b) Primary & secondary dewatering

(i) oxidized + 3% (Graph I)

(ii) unoxidized (thickeners)

- calculated thickener diameter (ft) from:

$$\text{Dia.} = \sqrt{0.764 \text{ (lbs. } SO_2 \text{ removed/hr.)}}$$

- budget price from Graph II add to oxidized adder of 3%

---

* In using Graph I for budget price for system comprised of 5 or more towers, add appropriate budget prices for 1 to 4 towers - e.g.

5 towers each 32' Ø add 4 @ \$21MM+1@ \$6.8MM

6 towers each 38' Ø add 4 @ \$27.3MM+2@ \$13.7MM

Exhibit 10

III. Process Information

A. Required Limestone

1. (lbs. SO_2 removed/hr.) x (100/64) x $(1.05)^{**}$ x $(1/0.9)^{*}$ x (1/2000) = tons of limestone required per hour.

   ** stoichiometric ratio (95% utilization)

   * limestone purity (90%)

B. Waste Generated

1. Unoxidized ($Ca\ SO_3 \cdot \frac{1}{2} H_2O$), "sulfite"

   a. (lbs. SO_2 removed/hr.) x (129/64) x (1/200) = tons of $Ca\ SO_3 \cdot \frac{1}{2} H_2O$ per hour.

      (1) add 10% of required limestone (impurities).

   b. for quantity of slurry leaving quencher divide (1) by 0.15 (15% solids).

   c. for quantity of slurry leaving thickener (primary dewatering) divide (1) by 0.35 (35%% solids).

   d. for quantity of slurry leaving vacuum filters, divide (1) by 0.65 (65% slurry).

2. Oxidized ($Ca\ SO_4 \cdot 2H_2O$), "sulfite", "gypsum".

   a. (lbs. SO_2 removed/hr.) x (172/64) x (1/2000) = tons of gypsum/hr.

      (1) add 10% of required limestone (impurities).

   b. for quantity of slurry leaving quencher divide (1) by 0.15 (15% slurry).

   c. for quantity of slurry leaving primary dewatering (hydroclones) divide (1) by 0.5 (50% solids).

   d. for quantity of slurry leaving secondary dewatering (vacuum filters) divide (1) by 0.8 (80% slurry).

Exhibit 10

III. C. Pressure Losses

1.	Absorber Tower	4.5 inches W.C.
2.	Reheater (if any)	2.0 inches W.C.
3.	Ductwork	1.0 inches W.C.
4.	Stock	1.0 inches W.C.
	Total	8.5 inches W.C.

D. Power Consumption (Hp)

1. Fan (forced draft) (<u>not</u> <u>test</u> <u>block</u> <u>conditions</u>)

$$\text{brake hp} = \frac{1.524 \times 10^{-4} (V_1) (8.5)}{0.85} =$$ ____

* for induced draft fan use V_3 instead of V_1.

2. Pumps

a. Quencher

$$\text{brake hp} = \frac{(V_3/1000) \times \overbrace{(20) \times (100) \times (1.09)}^{2180}}{(3957) \times (0.75) = 2968} =$$ ____

b. Absorber

$$= \frac{(V_3/1000) \times \overbrace{(20) \times (100) \times (1.09)}^{2180}}{(3957) \times (0.75) = 2968} =$$ ____

c. Reagent feed .... = 20

d. Total ____

3. Agitators

a. Absorber

$$Hp = \frac{[(V_3/1000) \times (50) \times (5)]}{1600 + 0.001 (500{,}000 - [*])} =$$ ____

* = numerator

Exhibit 10

III. D. Power Consumption (Hp) continued

3. Agitators

b. Quencher

$$Hp = \frac{\left[(V_3/1000) \times (20) \times (5) \right]}{1600 + 0.001\ (500{,}000 - [\quad])} = \underline{\qquad}$$

c. Sub Total ______

d. Oxidized material add 20% (to c) ______

e. Total ______

4. Total Power Consumption 1+2+3 ______

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Solid Waste Processing Division of ASME

DRY SYSTEM EMISSION CONTROL FOR MUNICIPAL INCINERATORS

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ABSTRACT

The control of gaseous and particulate emissions from municipal incinerators well within regulatory limits, with essentially zero opacity, requiring skills already available in the facility, and with a solid discharge has been demonstrated in commercial installations in the U.S.A. and Japan.

INTRODUCTION

The disposal of municipal waste is a microcosm of our total pollution problem. The mere disposal of the waste creates additional pollution problems. Landfill creates leaching pollution. Reduction of volume by combustion creates air pollution and solid waste disposal. Scrubbing creates liquid waste. Yet, as in all other pollution problems, recovery of useful values can be achieved, thermal value by incineration, materials recovery by sorting and separation.

The most effective process for disposal of solid waste thus far developed is incineration, often coupled with thermal recovery. A significant reduction in mass is achieved and heat is recovered. There are still, however, gaseous and particulate emissions that must be contained.

The noxious gaseous emissions and the range of concentrations encountered are:

Compound	ppm
HCl	50-1500
SO.	20-250
HF	3-30

The particulate concentration is of the order of 5 g/Nm^3 with a significant level (>30 percent) of submicron particulate.

The higher concentrations of HCl (~ 1000 ppm) are generally present in the combustion gases emitted in European and Japanese incinerators. The concentrations of HCl in U.S. and Canadian incinerators are, at present, of the order of 50-300 ppm. The indications are that these will rise as the trend toward plastic packaging increases to the level present in European and Japanese incinerators.

Regulations regarding HCl emissions are:

Japan	250 ppm
Germany	200 ppm
Italy	50 ppm
U.S.A.	No Federal requirements

In the U.S., particulate emissions are restricted by EPA to 0.22 g/Nm^3 corrected to 12 percent CO_2 for existing incinerators and 0.18 g/Nm^3 corrected to 12 percent CO_2 for new installations. With normal good practice for incinerator operation these values are equivalent to 0.11 g/Nm^3 and 0.09 g/Nm^3 respectively for the outlet gas. Some states are more restrictive with permissible emissions as low as 50 percent of the recommended EPA regulations.

Opacity is generally restricted to less than 20 percent.

European and Japanese practice in meeting the particulate and acid gas regulations had been the use of electrostatic precipitators for particulate removal followed by wet scrubbing for the removal of acid gases. This practice is frowned upon by authorities because of the requirement for discharge of liquid waste and the appearance of a pervasive plume if the particulate is not reduced below 0.04 g/Nm^3 and acid gas concentrations below 20 ppm.

Thus, a more acceptable and more economically viable process was required in order to meet the regulatory requirements and the financial capability of the communities, the producers of solid waste.

The criteria for an emission control system for incineration are as follows:

1. Compatibility with skills available in the operators of incinerators.

2. Reduction of particulate emissions to levels consistently below the regulatory requirements.

3. Future capability for reduction of acid gas emissions to levels below the most stringent requirements established in other countries.

4. Reduction of visible plume to opacities below 10 percent.

5. Prevention of liquid discharge.

The reasons for these criteria are as follows:

TABLE 1 SYSTEM CHARACTERISTICS FOR MUNICIPAL INCINERATOR EMISSION CONTROL

Compatibility	Material handling skills
Particulate	Emissions less than 0.1 g/Nm^3 (corr. 12 percent CO_2)
Acid Gas	Emissions less than 10 ppm
Plume	Less than 10 percent
Discharge	To be solid

1. Compatibility – If new skills are required beyond material handling, additional manpower must be added. A three-man addition is equivalent to a capital investment of $750,000 per installation.

2. Particulate – The trend in incinerator regulation based on state of the art is toward a particulate level of 0.1 g/Nm^3 corrected to 12 percent CO_2. In addition, emissions above 0.04 g/Nm^3 will result in a visible stack emission because of nucleation of the particulates in the humid exhaust.

3. Gas Emissions – Inasmuch as other countries and individual communities have already placed restrictions on acid gas emissions and EPA is now evaluating the technology, there will probably be government pressure to control these emissions in the near future. In addition, high concentrations of acid gases in a humid stack result in an intensification of plume appearance.

4. Plume Appearance – The opacity of a steam plume is a function of particulate and acid gas content as well as ambient conditions. Since the inherent humidity in incineration is equivalent to a dew point range of 115-140 F (66C-88C), the potential for plume appearance even without additional humidification is high.

5. Liquid Discharge – The original mode of acid gas recovery was via scrubbing subsequent to an electrostatic precipitator. This not only resulted in plume intensification but a complex water treatment system as well as discharge of soluble chloride and fluoride salts. Both Japan and Germany have placed approval restrictions on such installations.

As a result of this evaluation, it was determined that a dry scrubbing system was essential to meet all the criteria. The system consists of the following components [1-3] (Fig. 1).

1. Quench Reaction – The simultaneous reduction in temperature and neutralization of acid gases by a size-temperature responsive spray of a neutralizing agent, resulting in a dry particulate product at the outlet of the unit.

2. Submicron particulate capture in the duct via use of a "dry venturi" providing the efficiency of particulate capture equivalent to an 80 in. w.g. (20 kPa) wet venturi but operating at a 1/2 in w.g. (0.1 kPa) pressure drop.

3. Filtration of the entire gas by a baghouse or an electrostatic precipitator. Because of the removal of acid gases the acid dew point no longer controls the operating temperature of the electrostatic precipitator

The proprietary quench reactor (upflow with large particulate removal or downflow) has a responsive droplet size mechanism such that lower inlet temperatures result in the formation of smaller droplets. Inasmuch as vaporization rates are lower with lower inlet temperatures, the smaller droplet size compensates for this decrease in kinetics, thus establishing consistent performance.

The dry venturi, [4] installed as a spool piece in the duct provides for the capture of the hydrophobic submicron particulates at a pressure drop of ½ in. w.g. (0.1 kPa) with a capture efficiency equal to that achieved in an 80 in. w.g. (20 kPa) pressure drop wet venturi (Table 2). The targets are solid and available locally.

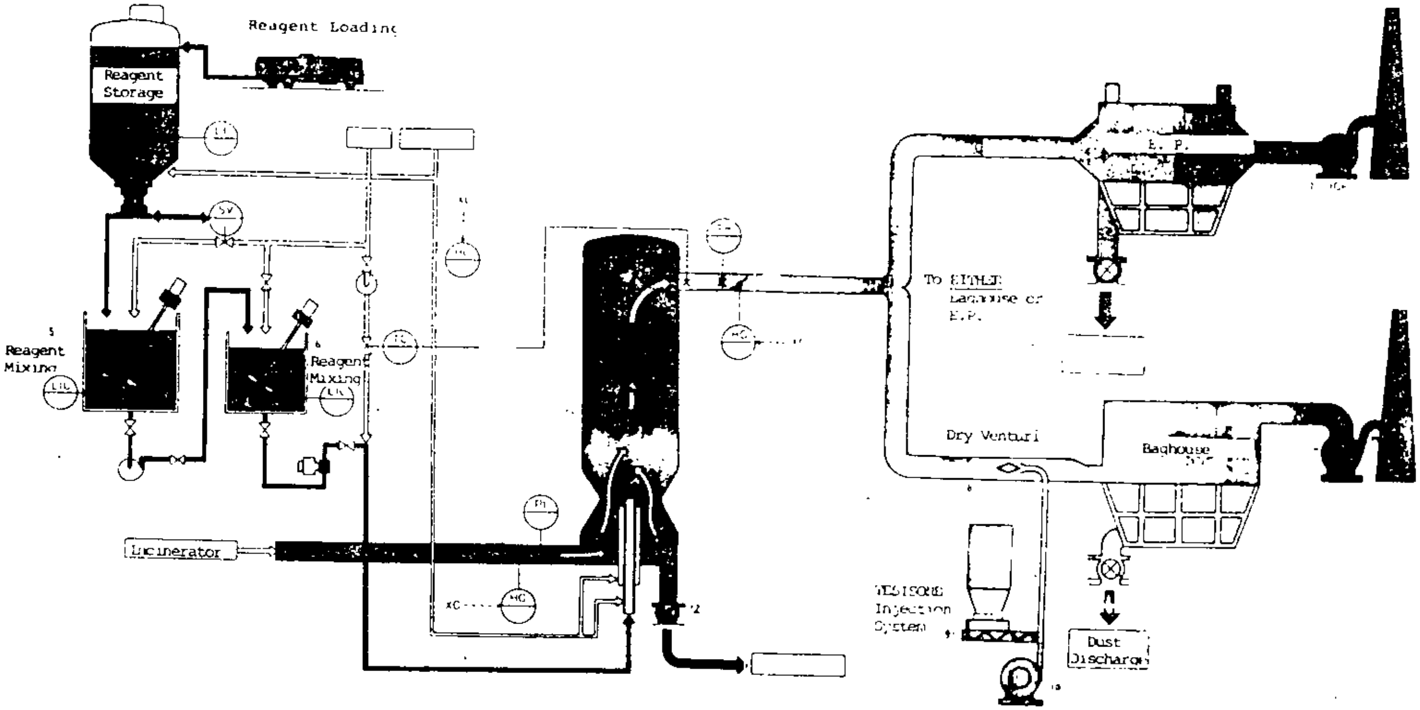


FIG. 1 FLOW SHEET WITH BUGHOUSE AND ELECTROSTATIC PRECIPITATOR

TABLE 2 COMPARISON OF PREDICTED CAPTURE PERFORMANCE:

Wet Venturi and Dry Venturi

Particle Size Captured Microns	Wet Venturi		Dry Venturi Capture	
	ΔP mm H_2O	Efficiency Percent	ΔP mm H_2O	Efficiency Percent
0.3	250	54-64	15	85-90
	630	72-78		
	1250	80-86		
	2000	82-90		
0.5	250	77-80	15	92-95
	630	84-90		
	1250	88-95		
	2000	92-99		
1.0	250	88-95	15	99-100
	630	94-100		
	1250	96-100		
	2000	100		

The neutral salts created in the quench reactor, the agglomerated particulates from the dry venturi, and the supermicron particulates from the incinerator may now be removed from the gas stream by either a baghouse or an electrostatic precipitator.

TABLE 3 TOTAL OPERATING COSTS · TELLER EMISSION CONTROL SYSTEM – MUNICIPAL INCINERATORS (BAGHOUSE)

	$/yr	$/ton	$/ton Less Amortization
Lime ($35/ton)	6,500	0.072	
Power ($0.03/kWh)	58,500	0.650	
TESISORB ($35/ton)	18,000	0.200	
Amortization (15 year)	133,000	1.477	
Labor ($20,000/MY)	20,000	0.220	
Maintenance	25,000	0.278	
Total	261,000	2.897 (3.193/t)	1.420 (1.565/t)

If no precipitator is presently installed, the baghouse is preferred. The bases are lower capital cost and acid gas removal.

In conjunction with dry venturi operation, the baghouse shake cycle is extended to 12-18 hr inasmuch as the major portion of the submicron particulates are agglomerated. Thus, the rate of pressure drop rise is minimal and the shake cycle is

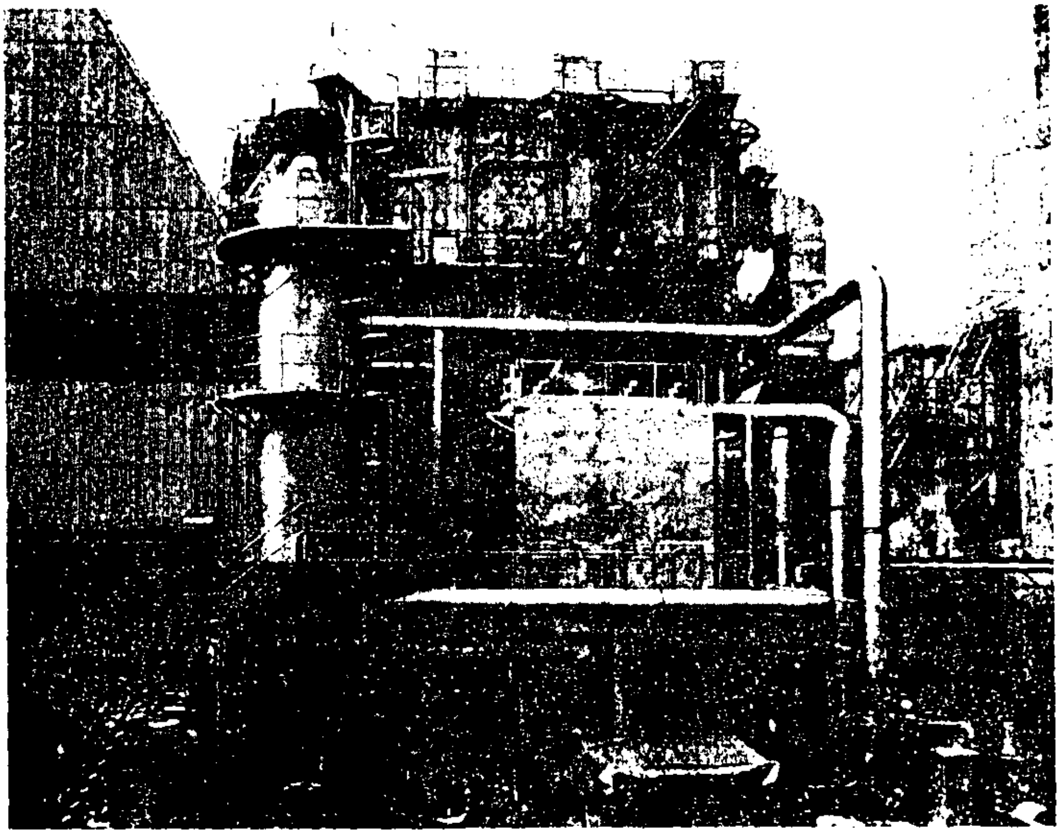


FIG. 2 ISOGO PILOT UNIT

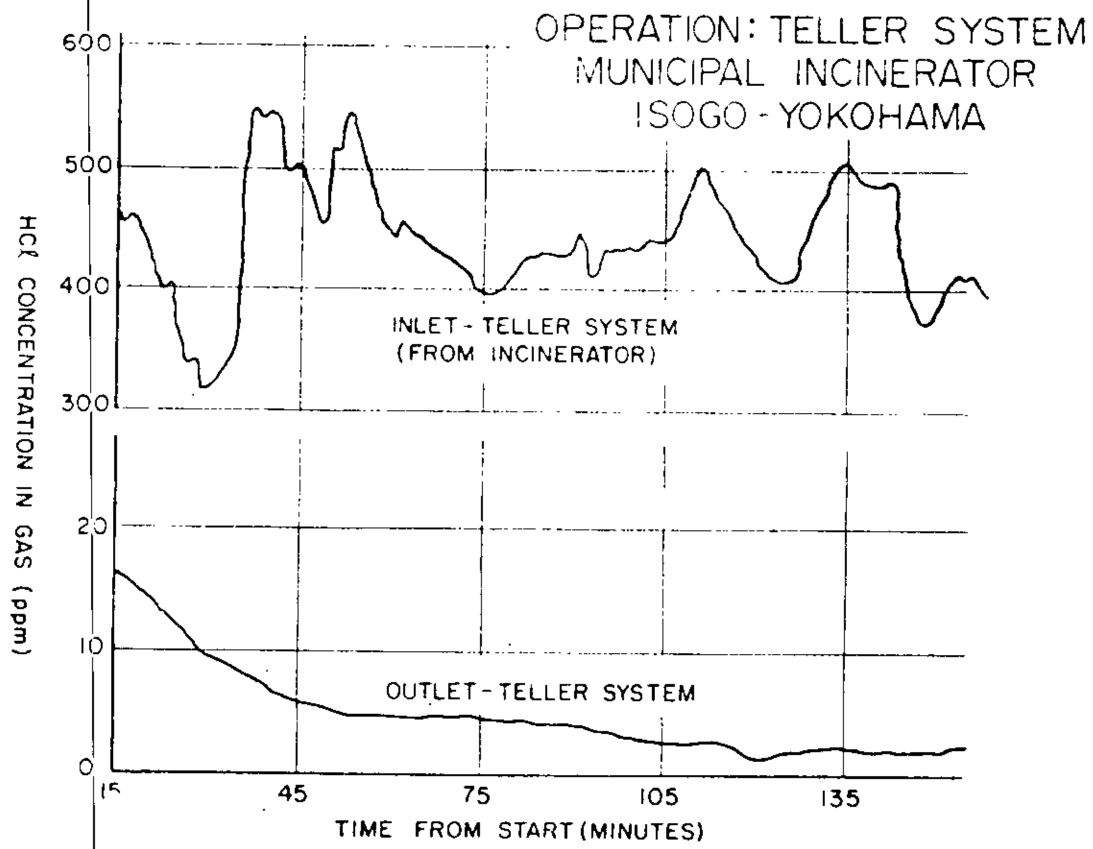


FIG. 3 ISOGO HCl TESTS

small. As a result, a thick cake is created in the baghouse.

The result is a flywheel effect. It is known that the acid gas emissions from an incinerator are highly variable. If all of the neutralization is to be conducted in the quench reactor, then either the quantity of neutralizing agent must be introduced responsively to the inlet concentration or, in order to avoid the unreliability of analytical instrument response, the neutralizing agent feed rate must be fed at the maximum requirement.

However, because the Teller system permits a buildup of solids in the baghouse, an *average* rate of reagent feed is permissible. During low acid gas emission periods, the excess reagent accumulates in the cake, and is available for reaction during high acid gas emission periods.

The behavior pattern of a constant system emission with variable inlets was observed in pilot tests at Isogo, Yokohama (Figs. 2 and 3).

The overall acid gas performance for the baghouse system is reduction from 300-1000 ppm HCl to 3-6 ppm and 50-250 ppm SO_2 to 5-30 ppm. Particulate emissions are of the order of 0.06 g/Nm^3 corrected to 12 percent CO_2.

Where an electrostatic precipitator is used as the final downstream collector, the acid gas performance is still within acceptable range with a 90 percent efficiency for HCl and an 85 percent efficiency for SO_2.

The system (Fig. 1) has the following characteristics:

1. Compatibility
   Primarily solids handling one slurry handling system
2. Particulate
   Emissions less than 50 percent of present requirements (EPA)
3. Gas Emissions
   Approximately 15 percent of the lowest required internationally
4. Plume Appearance
   Zero opacity when the ambient temperature

is above 50F (10C). With ambient temperature below 50F (10C) a disconnected steam plume is evident with a life of approximately 100 ft (30 m).

5. Discharge
   Solid product – free flowing.

The overall system pressure drop is approximately 8 in. w.g. (1.99 kPa).

For a 300 tpd (272 t/d) municipal incinerator the estimated operating costs for 300 operating days/yr are shown in Table 3.

For retrofit of an existing electrostatic precipitator installation, costs are shown in Table 4.

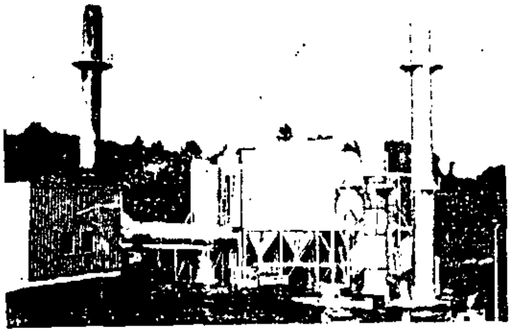


FIG. 4 FRAMINGHAM INSTALLATION

TABLE 4 TOTAL OPERATING COSTS – TELLER EMISSION CONTROL SYSTEM – MUNICIPAL INCINERATORS – ELECTROSTATIC PRECIPITATOR

	$/yr	$/ton	$/ton Less Amortization
Lime ($35/ton)	10,000	0.111	
Power ($0.03/kWh)	40,000	0.444	
TESISORB	18,000	0.200	
Amortization (15 year)*	180,000	2.000	
Labor ($20,000/year)	20,000	0.220	
Maintenance	80,000	0.899	
Total	348,000	3.864	1.864
		(4.259/t)	(2.055/t)

*If not paid off prior to installation of Teller components.

Thus total emission control compatible with the needs of the community and with acceptable discharge from aesthetic, pollutant, and by product characteristics can be achieved within reasonable economic limits. This has been demonstrated on a 300 tpd (272 t/d) municipal incinerator in Framingham, Massachusetts (Fig. 4) and a 150 tpd (136 t/d) municipal incinerator at Yokohama, Japan.

Key Words
Absorption
Dust
Emission
Environment
Gases
Incineration
Pollution

APPENDIX F:

WASTE QUANTITIES

Waste Quantities

A. PURPOSE

To verify the annual quantity of solid waste generated in Hillsborough County and determine if a solid waste generation rate of 4.3 lb/cap/day determined previously should be used for resource recovery procurement activities.

B. SUMMARY

a) This analysis indicated that 539,400 tons rather than the projected 495,000 tons was disposed of in Hillsborough County in 1980. We propose the use of the lower tonnage as the basis for the RFP procurement documents.

b) The analysis showed a unit waste generation rate of 4.7 lb/cap/day which was higher than the projected rate of 4.3 lb/cap/day. To conservatively estimate the quantities, we propose the use of the lower rate of 4.3 lb/cap/day as the basis for the RFP procurement documents and when it is to the County's advantage, increase the baseline quantities.

C. DISCUSSION

1. Introduction

As part of the work program, solid waste records were collected and analyzed to determine an appropriate waste generation rate to be used to estimate future waste quantities generated in Hillsborough County. The previous consultant, Brown & Caldwell, used a unit waste generation rate of 4.3 pounds/capita/day. HDR will determine if this waste generation rate is appropriate based upon the additional year of data that has been collected since Brown & Caldwell did their analysis in 1979. The updated unit waste generation factor will be used to estimate the future quantities of solid waste that will have to be accommodated by a solid waste management system.

2. Waste Quantities

Two sanitary landfills are currently in operation in Hillsborough County: the Northwest Landfill and Hillsborough Heights. These two landfills receive all of the waste disposed in the County. In the past, other landfills were also used.

The Ruskin Landfill was operational until August 1978 when its waste was diverted to the Taylor Road Landfill. Plant City's landfill was operational through September 1979 when its waste was diverted to the Taylor Road Landfill. Furthermore, the Tampa Incinerator was operational until December 1979, when its waste was also diverted to the Taylor Road Landfill. The Taylor Road Landfill was replaced by the Hillsborough Heights Landfill and daily operation was contracted to Waste Management, Inc. on February 11, 1980. Hillsborough County also operates the South County Transfer Station which hauls all of its waste to the Hillsborough Heights Landfill.

Scale data from the Hillsborough Heights Landfill is available for most of 1980. Scale data of the incoming waste stream is also available from the Transfer Station. Other pertinent data concerning the waste stream includes estimates of the total volume in cubic yards of the waste going to the landfills which do not or did not operate scales. For the months when no information on the waste stream was available; reasonable estimates of the incoming waste were made by the scale attendants.

TABLE A-1 - HILLSBOROUGH COUNTY 1980 SOLID WASTE DATA BY MONTH

	Northwest Landfill		Hillsborough Heights	
	Estimated Cu. Yards	Est. Tons @ 350 lb/c.y.	Tons	Total Tons
Jan.	53,206	9,311	28,896	38,207
Feb.	52,827	9,244	10,791 (1)	30,035
Mar.	58,050	10,159	33,634	43,793
Apr.	56,871	9,952	37,557	47,509
May	56,418	9,874	36,916	46,790
June	57,818	10,119	37,162	47,281
July	60,440	10,577	39,402	49,979
Aug.	61,150	10,701	38,514	49,215
Sept.	60,501	10,588	37,953	48,541
Oct.	83,391	14,593	33,614	48,207
Nov.	55,002	9,625	33,472	43,097
Dec.	60,859	10,650	36,097	46,747
Total	716,533	125,392	414,008	539,400

(1) Waste Management, Inc. (WMI) assumed operational control of the landfill in 1980. Scales were installed on February 11, and only a partial month of scale data is available.

Table A-2 shows the total waste quantities going into each landfill for the years 1978 and 1979.

TABLE A-2 - TOTAL WASTE QUANTITIES FOR 1978 AND 1979

	1978 Cubic Yards	Tons	1979 Cubic Yards	Tons
Northwest Landfill	755,085	132,140	838,538	146,744
Taylor Road	1,026,286	179,600	912,434	159,675
Tampa Incinerator	---	180,000	---	188,738
Plant City	---	10,514	---	8,370 (1)
Ruskin	55,844 (2)	9,773	Closed	Closed
Total	1,837,215	512,027	1,750,972	503,527

(1) The Plant City Landfill closed October 1, 1979 and the waste was diverted to the Taylor Road Landfill.

(2) The Ruskin Landfill closed August 1, 1978 and the waste was diverted to the Taylor Road Landfill.

Special Note: Waste quantities contain some white goods, demolition waste and tires.

Another minor problem with the 1980 waste quantities is that not all incoming vehicles using the Hillsborough Heights Landfill crossed the scale. For example, some cars, some tire loads, and some cash customers bypassed the scales. Records indicate that an average of 3100 cars and pickup trucks bypassed the scales each month in 1980. The peak number of cars and pickup trucks that passed the scales was 3428 vehicles in August 1980. The least amount of cars and pickup trucks bypassing the scales occurred during November when 2765 vehicles were recorded. The quantities hauled by these types of vehicles was determined to be insignificant. But, beginning in 1981, all incoming wastes will be weighted at Hillsborough Heights. This operating requirement will improve the data for future solid waste management planning activities in Hillsborough County.

3. Population Projections

Table A-3 lists the estimated population projections for Hillsborough County. These projections were obtained from the Hillsborough County City-County Planning Commission publication entitled, "Population and Housing Estimates, April 1, 1970 - April 1, 1980."

TABLE A-3 - POPULATION PROJECTIONS FOR HILLSBOROUGH COUNTY

Year	Population Projection
1980	630,698
1985	757,300
1990	848,500
1995	939,300
2000	1,030,000

4. Unit Waste Generation Factor

The unit waste generation factor is simply a per capita waste generation rate. The factor is calculated by dividing the total tonnage of waste disposed by the contributing population. Using the data presented in Table 4 and a countywide population of 630,698, the County's unit waste generation factor for 1980 was computed to be 4.7 pounds per capita per day. The 1979 data indicated a 4.7 pounds per capita per day was computed. The 1978 data equated to 4.8 pounds per capita per day rate.

In previous analyses, a unit waste generation rate of 4.3 pounds per capita per day was determined. This rate is approximately 8.5% less than the rate computed by HDR and this differential is small when determining unit waste generation rates. To be conservative, the 4.3 pounds per capita per day rate will be used in projecting waste quantities delivered to resource recovery facilities.

From our perspective, the unit factor of 4.3 pounds per capita per day is a reasonable estimate when compared to unit waste generation factors found in other HDR projects such as Pinellas County, Florida; DeKalb County, Georgia; Fort Worth, Texas; and Phoenix, Arizona. Furthermore, it is assumed that the unit waste factors will remain constant in the future. This assumption provides a reasonable compromise between past predictions of rising per capita waste generation rates and some recent indication of the trend toward slight decreases in the per capita waste generation rates.

Table A-4 lists the solid waste tonnage projections for Hillsborough County. These projections are based on the population projections listed in Table 3 and a constant unit waste generation rate of both 4.7 and 4.3 pounds per capita per day.

TABLE A-4 - SOLID WASTE PROJECTIONS FOR HILLSBOROUGH COUNTY

Year	Waste Quantity (Tons) 4.7 lb/cap/day	Resource Recovery Quantity 4.3 lb/cap/day
1980	539,000	495,000
1985	647,000	594,000
1990	725,000	666,000
2000	880,000	808,000

5. Seasonal Variations

Figure A-1 depicts the seasonal variation of waste quantities for the years 1978, 1979 and 1980. Figure A-2 gives reference to which months are above or below the average monthly waste generation percentage of 8.33% (100% - 12 months = 8.33%).

6. Solid Waste Composition

Local solid waste composition data was extracted from the Phase II Project Draft Report. This sampling program determined the composition of the municipal solid waste stream in Hillsborough County.

The sampling survey spanned six continuous days per month in each of the following months: November 1979, February 1980, May 1980 and August 1980.

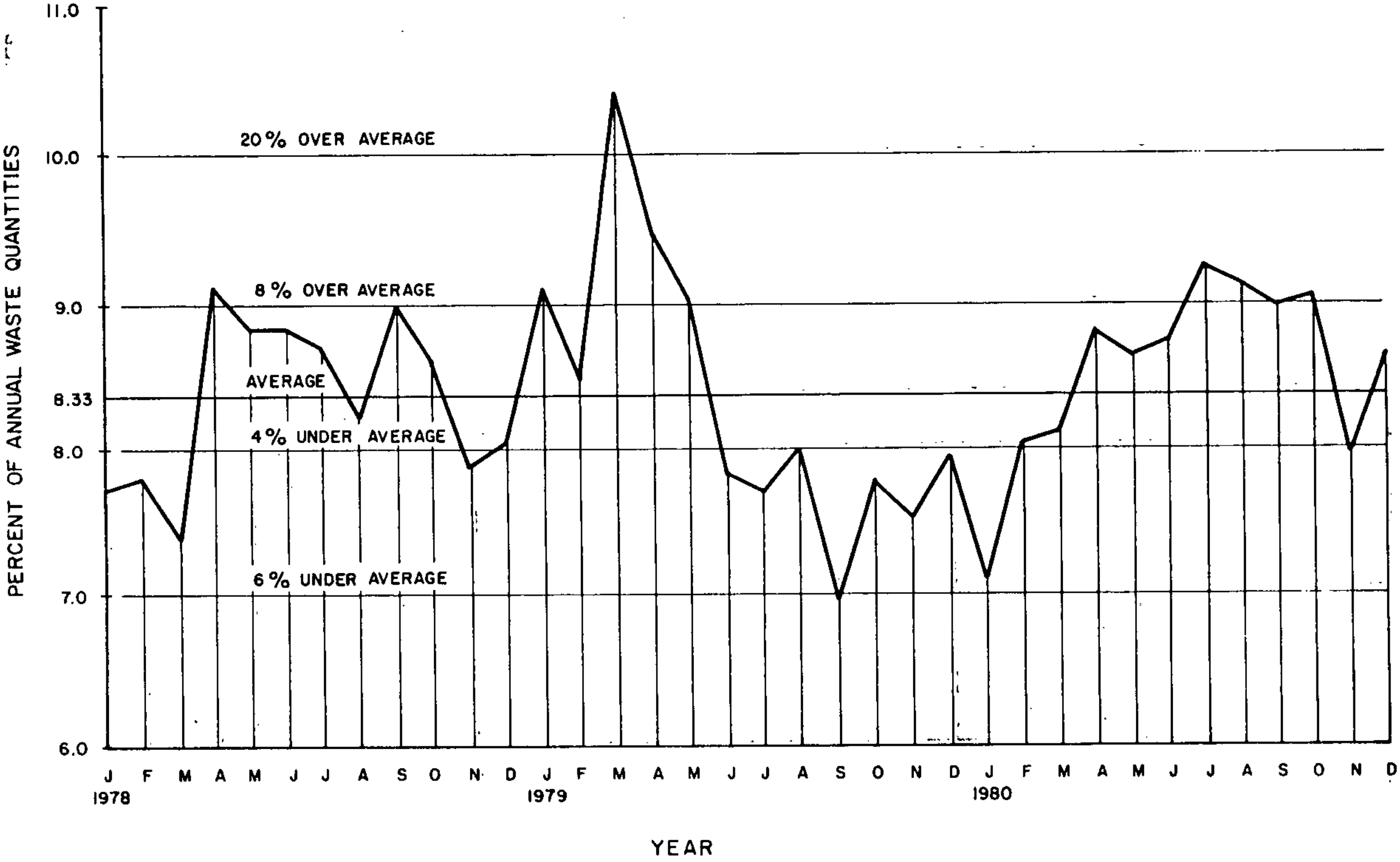


FIGURE A-1

SEASONAL VARIATIONS IN SOLID WASTE QUANTITIES
1978-1980

Table A-5 summarizes the seasonal variation in the waste stream composition. The percentage of combustibles was the highest at 89.8% in August 1980, and the lowest at 80.3% in February 1980.

TABLE A-5 - STUDY AREA MSW COMPOSITION COMPARISON

Category	Waste Stream Composition, Percent November 1979(1)	February 1980(2)	May 1980(3)	August 1980(4)	Average (5)
Combustibles					
Paper					
Miscellaneous paper	33.4	33.1	27.2	24.4	29.5
Newspaper	11.2	7.6	9.6	9.4	9.4
Food and organics	9.5	16.2	7.9	4.8	9.6
Wood and garden	18.7	13.8	17.9	42.1	25.6
Rubber, leather, and textile	2.8	3.8	4.5	4.5	3.9
Plastics	6.2	5.8	6.1	4.6	5.7
Subtotal combustibles	81.8	80.3	83.1	89.8	83.7
Noncombustibles					
Ferrous					
Heavy	1.2	2.4	1.1	0.1	1.2
Light	4.0	4.7	2.9	2.3	3.5
Aluminum	1.1	1.0	.7	0.8	0.9
Other nonferrous metals	0.0	0.0	.5	0.0	0.1
Glass	7.9	8.3	9.2	6.0	7.9
Rocks, dirt, ash and miscellaneous	4.0	3.3	2.4	1.0	2.7
Subtotal noncombustibles	18.2	19.7	16.9	10.2	16.3

(1) Average wet weight from a 6-day sampling survey from November 12 to November 17, 1979.

(2) Average wet weight from a 6-day sampling survey from February 4 to February 9, 1980.

(3) Average wet weight from a 6-day sampling survey from May 5 to May 10, 1980.

(4) Average wet weight from a 6-day sampling survey from August 4 to August 9, 1980.

(5) Based on the November, February, May and August results.

Source: Hillsborough County Resource Recovery Planning Study, Chapter 2.

Table A-6 illustrates the seasonal variation of the higher heating value and moisture content of the solid waste. The heating value was lowest in May 1980, the highest values occurred in the months of November 1979 and August 1980. This local data correlates reasonably with HDR and other's sampling programs listed in Table A-7 and its use should provide a reasonable basis for the procurement activities.

TABLE A-6 - STUDY AREA HIGH HEAT VALUE, PROXIMATE ANALYSES

	High Heat Value, Btu per Pound				
Category	November 1979(1)	February 1980(2)	May 1980(3)	August 1980(4)	Average
Combustible fraction, as received	5750	5290	4910	5290	5310
Combustible fraction, moisture free	8100	7560	7220	7780	7660
MSW, as received	4710	4250	4080	4750	4450
MSW, moisture free	6630	6070	6000	6980	6420
Average Moisture %	29	30	32	32	-

(1) Based on a 6-day sampling survey from November 12 to November 17, 1979.

(2) Based on a 6-day sampling survey from February 4 to February 9, 1980.

(3) Based on a 6-day sampling survey from May 5 to May 10, 1980.

(4) Based on a 6-day sampling survey from August 4 to August 9, 1980.

Source: Hillsborough County Resource Recovery Planning Study, Chapter 2.

Special wastes can comprise a significant amount of the waste that is landfilled. Included in these wastes are large amounts of shrimp, tires, dead animals, lumber, and construction wastes. These non-processable wastes will go directly to the landfills and bypass any waste processing facilities. By selecting the 4.3 unit waste generation rate, we are of the opinion the special wastes have been adequately included in the total waste quantities listed in Table 4.

WASTE COMPOSITIONAL ANALYSES

	HDR STUDIES								
	IOWA		MINNESOTA			CALIFORNIA			
SOLID WASTE COMPONENT	DUBUQUE (RES)	DUBUQUE (COMM)	ST CLOUD (RES)	ST CLOUD (COMM)	OLMSTEAD CO (RES-COMM)	COLTON (RES)	COLTON (COMM)	SAN DIEGO (RES)	SAN DIEGO (COMM)
PAPER	37.0	42.2	37.0	36.1	33.4	26.9	35.4	38.6	44.1
CARDBOARD	3.5	11.0	14.0	22.6	12.8	6.2	20.4	6.8	22.8
PLASTIC	5.3	7.8	4.1	3.7	5.6	2.8	4.5	3.6	7.5
WOOD	0.6	1.0	2.3	1.6	2.0	2.2	4.5	1.4	3.9
FOOD WASTE	10.6	7.4	17.5	11.7	14.6	3.4	2.6	2.8	5.5
YARD WASTE	25.1	7.2	0.6	0	9.1	40.8	13.6	33.7	2.3
TEXTILES	2.3	1.7	3.6	4.4	3.2	2.5	6.3	2.3	2.6
RUBBER (LEATHER)	0.2	0	1.0	1.6		0.9	1.3	1.1	0.7
RESIDUE			2.6		1.7				
TOTAL PERCENT COMBUSTIBLE	84.6	78.3	82.7	85.0	80.7	85.7	88.6	90.3	89.4
FERROUS	8.8	13.6	8.0	8.8	9.5	5.5	5.6	4.5	5.2
ALUMINUM	1.1	1.1	0.5	0.3	0.8	0.6	0.6	1.0	0.8
GLASS	5.4	6.7	8.8	5.9	9.0	5.5	2.9	4.0	4.3
RESIDUE	0.1	0.3				2.7	2.3	0.2	0.3
TOTAL PERCENT NON COMBUSTIBLE	15.4	21.7	17.3	15.0	19.3	14.3	11.4	9.7	10.6
BTU/lb (AS RECEIVED)	3653	4796	3793	4155		4878.00		6456.00	
BTU/lb (DRY)	7010	8173							
BTU/lb (AVERAGE)	3600	5300	4000						
% MOISTURE	41.1	36.6	39.4	33.6		28.0		21.9	20.9
% RESIDUE	15.1	8.7	14.1	18.9					
CARBON	29.1	40.8	23.9	29.9					
HYDROGEN	2.3	2.2	5.1	3.3					
OXYGEN	11.6	11.2	16.5	16.7					
NITROGEN	0.52	0.37	0.64	0.56					
CHLORINE	0.17	0.15	0.25	1.47					
SULFUR	0.02	0.02	0.12	0.53					

	HDR STUDIES						
	MONTANA				MICHIGAN	ARIZONA	
SOLID WASTE COMPONENT	MISSOULA	BUTTE	BILLINGS	GREAT FALLS	MARQUETTE (RES-COMM)	PHOENIX (RES)	PHOENIX (COMM)
PAPER	25.0	24.3	24.9	26.9	46.6	43.7	50.8
CARDBOARD	10.3	7.0	10.1	8.2			
PLASTIC	4.3	6.1	6.1	4.2	7.0	4.1	5.3
WOOD	2.2	0.1	1.0	1.5	0.8	1.3	2.3
FOOD WASTE	12.9	21.9	20.5	13.6	13.8	12.2	12.5
YARD WASTE	29.6	14.3	12.2	28.0	10.0	17.2	6.9
TEXTILES	3.2	3.9	6.0	2.7	3.2	3.8	2.5
RUBBER (LEATHER)							
RESIDUE						5.7	6.5
TOTAL PERCENT COMBUSTIBLE	87.5	77.6	80.8	85.1	81.4	88.0	86.8
FERROUS	6.2	9.0	9.0	6.7	8.1	4.9	5.6
ALUMINUM	1.4	2.5	1.8	1.7	1.3	0.9	0.5
GLASS	4.9	10.9	8.4	6.5	8.7	6.2	7.1
RESIDUE					0.5		
TOTAL PERCENT NON COMBUSTIBLE	12.5	22.4	19.2	14.9	18.6	12.0	13.2
	AVG: 5039						
BTU/lb (AS RECEIVED)	4843	6049	4519	4748		5000	
BTU/lb (DRY)	7746	7402	7739	7278			
BTU/lb (AVERAGE)							
% MOISTURE	37.8	26.6	41.3	34.9		29.1	32.5
% RESIDUE	13.3	8.7	11.3	11.9			
CARBON	43.7	45.7	43.0	41.5			
HYDROGEN	6.2	6.6	6.2	5.6			
OXYGEN	35.2	39.1	37.5	39.6			
NITROGEN	0.88	1.01	1.07	0.68			
CHLORINE	0.60	0.49	0.75	0.45			
SULFUR	0.12	0.11	0.31	0.23			

	HDR STUDIES					
	GEORGIA		FLORIDA	ILLINOIS		
SOLID WASTE COMPONENT	DEKALB (RES)	DEKALB (COMM)	ST PETERSBURG (RES)	SPRINGFIELD (RES)	SPRINGFIELD (COMM)	SPRINGFIELD (RES-COMM)
PAPER	37.3	58.2	31.4	27.6	21.7	25.9
CARDBOARD				4.2	22.7	9.4
PLASTIC	3.5	4.5	1.3	5.3	5.1	5.3
WOOD	1.3	2.5	1.9	1.7	3.9	2.3
FOOD WASTE	3.9	2.7	0.8	15.5	18.6	16.4
YARD WASTE	26.6	0.5	46.7	21.0	2.3	15.6
TEXTILES	3.2	3.3	2.9	3.9	1.5	3.2
RUBBER (LEATHER)	0.7	0.6	0	0.4	0.1	0.3
RESIDUE	13.2	10.7		4.2	1.5	3.3
TOTAL PERCENT COMBUSTIBLE	89.7	83.0	85.0	83.8	77.4	81.9
FERROUS	5.5	10.7	5.4	7.1	12.4	8.6
ALUMINUM	1.0	1.0	1.0	0.7	0.6	0.7
GLASS	3.8	5.3	5.7	5.8	8.3	6.5
RESIDUE			2.9	2.6	1.3	2.3
TOTAL PERCENT NON COMBUSTIBLE	10.3	17.0	15.0	16.2	22.6	18.1
BTU/lb (AS RECEIVED)	4810	5227		5470.0	4972.9	5330.8
BTU/lb (DRY)				7680.3	7953.6	7756.0
BTU/lb (AVERAGE)					5331	
% MOISTURE	37.1	32.1		28.6	37.5	34.1
% RESIDUE	9.7			12.2	10.3	11.6
CARBON				42.8	44.3	43.2
HYDROGEN				5.2	5.1	5.2
OXYGEN				39.6	39.4	39.6
NITROGEN				0.6	0.6	0.6
CHLORINE	0.04			0.09	0.06	0.08
SULFUR	0.09			0.06	0.18	0.11

	ALTERNATE SOURCE			
SOLID WASTE COMPONENT	WISCONSIN REGION I (RES)	WISCONSIN REGION I (COMM)	NCRR (RES-COMM)	EPA 4TH REPT
PAPER	25.4	27.4	42.7	35.0
CARDBOARD	10.2	36.1		
PLASTIC	3.2	3.3	1.7	3.8
WOOD	5.3	10.0	2.5	3.8
FOOD WASTE	17.2	11.0	14.6	14.9
YARD WASTE	24.1	-	12.5	16.3
TEXTILES	2.1	0.9	2.4	1.7
RUBBER (LEATHER)			1.8	2.6
RESIDUE	0.3	3.6		
TOTAL PERCENT COMBUSTIBLE	87.8	92.3	78.2	78.0
FERROUS	6.4	5.4	8.2	9.8
ALUMINUM	1.1	0.1	0.9	
GLASS	4.7	2.0	10.3	10.5
RESIDUE		0.2	2.4	1.6
TOTAL PERCENT NON COMBUSTIBLE	12.2	7.7	21.8	21.9
BTU/lb (AS RECEIVED)				
BTU/lb (DRY)				
BTU/lb (AVERAGE)				
% MOISTURE				
% RESIDUE				
CARBON				
HYDROGEN				
OXYGEN				
NITROGEN				
CHLORINE				
SULFUR				

TABLE 4

For the purposes of RFP procurement it is assumed that the waste stream delivered to resource recovery facilities will have the following characteristics:

Combustibles - 80%
Ferrous - 5%
Aluminum - 1%
Other Non Ferrous Metals - 0.1%

Average higher heating value - 4500 Btus/lb. @ moisture content of 30%

E. CONCLUSIONS:

The primary purpose of this analysis was to confirm the quantity of waste that would be available for resource recovery in Hillsborough County. Our analysis indicated that more than the 1980 projected tonnage of 495,000 tons was disposed. Our analysis indicated that approximately 539,400 tons were disposed during 1980.

Since all waste is now being weighed at the Hillsborough Heights Landfill, we are proposing to use for the RFP procurement documents the lower tonnage of 495,000 tons (4.3 lbs/capita/day) as the basis for future projections. We will monitor the additional records and as more definitive data becomes available, we may recommend an increase in the quantity available for resource recovery when it is advantageous to the county.

APPENDIX G:

VISIBILITY SCREENING ANALYSIS PROCEDURE

HDR

Project McKAY BAY REFUSE-TO-ENERGY PROJECT

Subject VISIBILITY SCREENING ANALYSIS PROCEDURE

Computed CHA Date 6/22/81 Checked DWM Date 6/22/81 Page 1 of 2

LEVEL I ANALYSIS

REF: EPA 450/4-8-031 NOV80
"WORKBOOK FOR ESTIMATING
VISIBILITY IMPAIRMENT.

Q = FACILITY I & II

Q_{PART} = 0.67 METRIC TONS PER DAY - PARTICULATES

Q_{NO_2} = 3.10 METRIC TONS PER DAY - NO_2

Q_{SO_2} = 2.80 METRIC TONS PER DAY - SO_2

X = 88.5 KM - DISTANCE BETWEEN EMISSIONS SOURCE (McKAY BAY) AND CLOSEST BOUNDARY OF A CLASS I AREA (CHASSAHOWITZKA NATIONAL WILDLIFE REFUGE)

σ_z = 90 METERS - VERTICAL DISPERSION COEFFICIENT AS A FUNCTION OF DOWNWIND DISTANCE FROM THE SOURCE.

P = PLUME DISPERSION PARAMETER

$$P = \frac{2.0 \times 10^8}{\sigma_z \times (X)} = \frac{2.0 \times 10^8}{90 \times 88.5} = 2.51 \times 10^4$$

τ_{PART} = OPTICAL THICKNESS

$$\tau_{PART} = 10 \times 10^{-7} P\, Q_{PART} = (10 \times 10^{-7})(2.51 \times 10^4)(0.67)$$

$$\tau_{PART} = 1.68 \times 10^{-2}$$

τ_{NO_2} = OPTICAL THICKNESS

$$\tau_{NO_2} = 1.7 \times 10^{-7} P\, Q_{NO_2} = (1.7 \times 10^{-7})(2.51 \times 10^4)(3.1)$$

$$\tau_{NO_2} = 1.32 \times 10^{-2}$$

r_{VO} = 25 KM - REGIONAL BACKGROUND VISUAL RANGE VALUE (FIGURE 13)

HDR

Project MCKAY BAY REFUSE-TO-ENERGY PROJECT

Subject VISIBILITY SCREENING ANALYSIS PROCEDURE

Computed ELM Date 6/22/81 Checked DWM Date 6/22/81 Page 2 of 2

$\tau_{AEROSOL}$ - PRIMARY & SECONDARY AEROSOL

$$\tau_{AEROSOL} = (1.06 \times 10^{-5})(r_{V0})(Q_{PART} + 1.31\, Q_{SO_2})$$

$$\tau_{AEROSOL} = (1.06 \times 10^{-5})(25)(.67 + 1.31\,(2.80))$$

$$\tau_{AEROSOL} = 1.15 \times 10^{-3}$$

C_1 = PLUME CONTRAST AGAINST THE SKY

$$C_1 = -\frac{\tau_{NO2}}{\tau_{PART} + \tau_{NO_2}}\left[1 - EXP\left(-\tau_{PART} - \tau_{NO_2}\right)\right]\left[EXP\left(-0.78\,\frac{X}{r_{V0}}\right)\right]$$

$$C_1 = -\frac{1.32 \times 10^{-2}}{1.68 \times 10^{-2} + 1.32 \times 10^{-2}}\left[1 - EXP\left(-1.68 \times 10^{-2} - 1.32 \times 10^{-2}\right)\right]\left[EXP\left(-.78\,\frac{88.5}{25}\right)\right]$$

$$C_1 = -8.06 \times 10^{-4} \longleftarrow$$

C_2 = PLUME CONTRAST AGAINST TERRAIN

$$C_2 = \left[1 - \left(\frac{1}{C+1}\right) EXP\left(-\tau_{PART} - \tau_{NO_2}\right)\right]\left[EXP\left(-1.56\,\frac{X}{r_{V0}}\right)\right]$$

$$C_2 = \left[1 - \left(\frac{1}{-8.06 \times 10^{-4} + 1}\right) EXP\left(-1.68 \times 10^{-2} - 1.32 \times 10^{-2}\right)\right]\left[EXP\left(-1.56\,\frac{88.5}{25}\right)\right]$$

$$C_2 = 1.17 \times 10^{-4} \longleftarrow$$

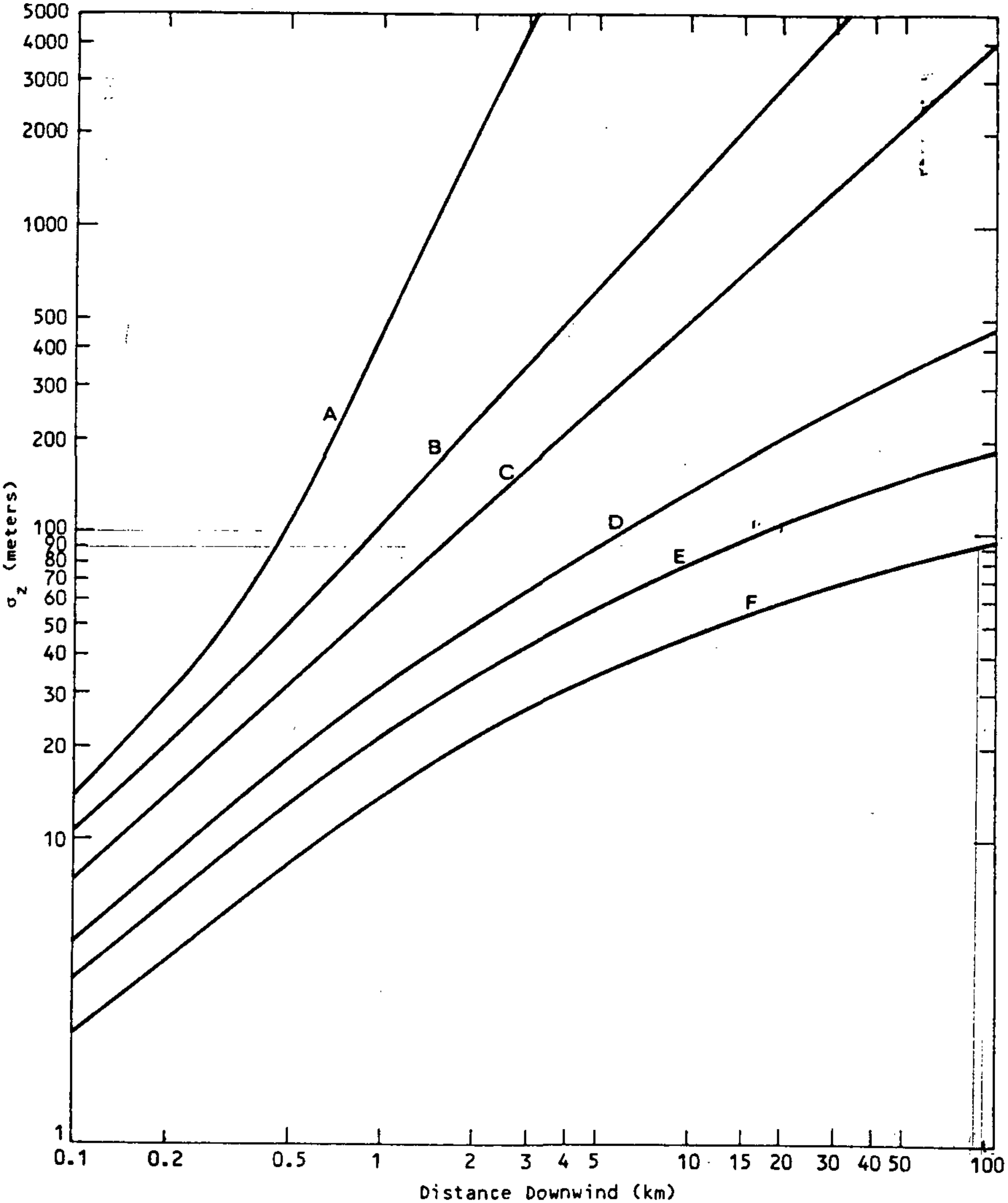
C_3 = CHANGE IN SKY/TERRAIN CONTRAST CAUSED BY PRIMARY AND SECONDARY AEROSOL

$$C_3 = 0.368\left[1 - EXP\left(-\tau_{AEROSOL}\right)\right]$$

$$C_3 = 0.368\left[1 - EXP\left(-1.15 \times 10^{-3}\right)\right]$$

$$C_3 = 4.23 \times 10^{-4} \longleftarrow$$

NOTE: SINCE THE ABSOLUTE VALUES OF C_1, C_2 & C_3 ARE ALL LESS THAN 0.10 IT IS HIGHLY UNLIKELY THAT THE EMISSIONS SOURCE WOULD CAUSE ADVERSE VISIBILITY IMPAIRMENT IN CLASS I AREAS; THEREFORE FURTHER ANALYSIS OF POTENTIAL VISIBILITY IMPACTS WOULD BE UNNECESSARY.



Source: Turner (1969).

Figure 12. Vertical dispersion coefficient (σ_Z) as a function of downwind distance from the source

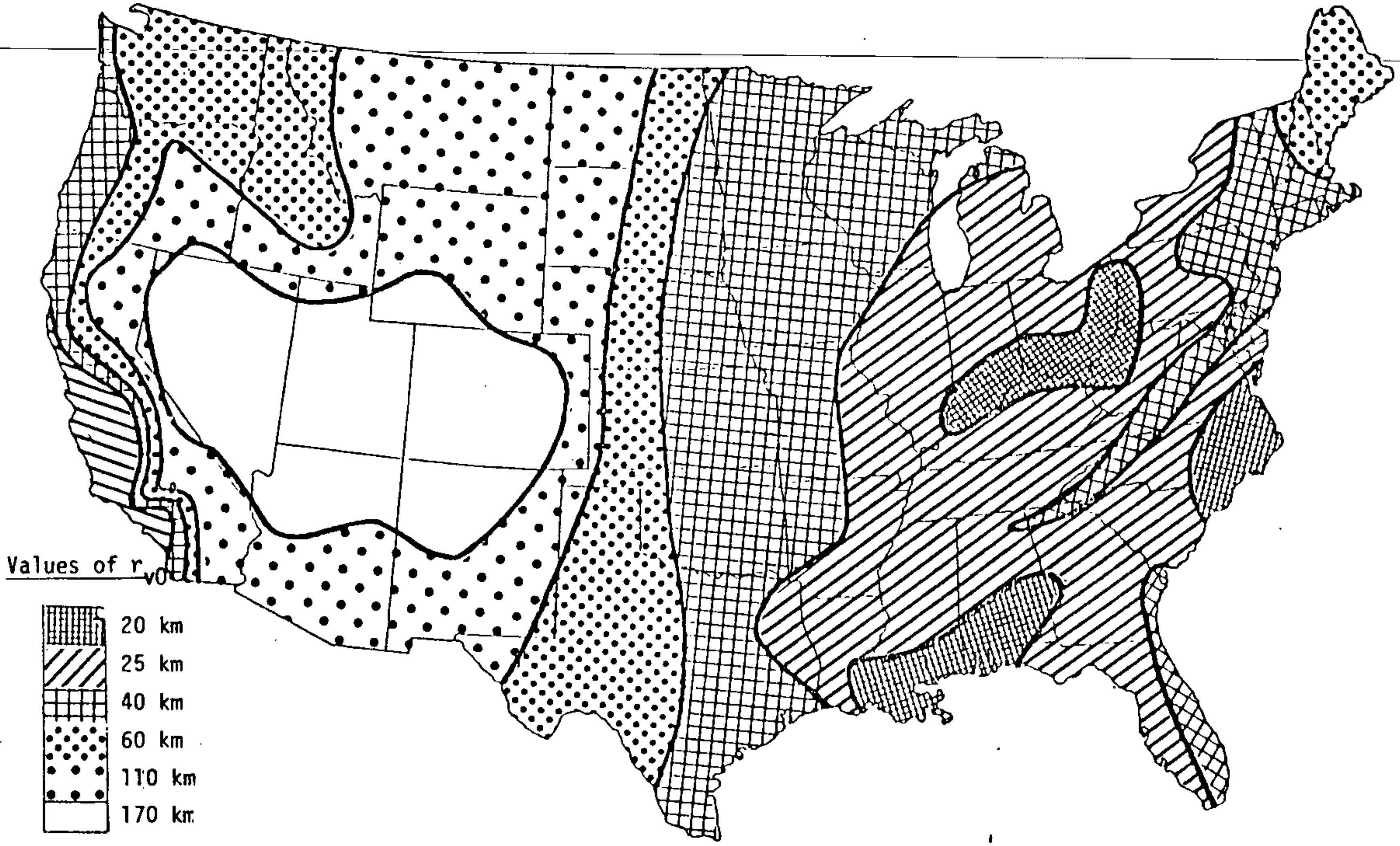


Figure 13. Regional background visual range values (r_{v0}) for use in level-1 visibility screening analysis procedure.

APPENDIX H:

EMISSION INFORMATION FOR FACILITY I

1/3

HDR

Henningson, Durham & Richardson

TELEPHONE CONVERSATION RECORD

Project Hillsborough / Mc'Kay Bay Project No. 1998-01-07

Time 9:30am Date 3/30/81 Arch./Engr. Easel Roberts

Call to Call from Bob Nespachall WMI.

Discussion, Agreement &/or Action

Bob called to relay the emission data in grams/second and in gr/dscf at 50% xs air and/or 12% CO_2.

Emissions for 250 TPD unit

Particulate

35.6 - 97gm/s

27.1 lb/T - 73.8 lb/T

ave 55.4gm/s ≈ 42.2 lb/T

Concentrations

3.62 gm/DNCM @ 7% CO_2

2.53 gr/dscf @ 12% CO_2 & 68°F

6.02 gm/dNCM @ 50% xs air 0°C

2.45 gr/dscf @ 50% xs air 68°F

HDR

Henningson, Durham & Richardson

TELEPHONE CONVERSATION RECORD

Project ______ Project No. ______

Time ______ Date 3/30/81 Arch./Engr. Easel Roberts

Call to ______ Call from Bob Nesrochall WMI

Discussion, Agreement &/or Action

Sulfur Dioxide

3.06 gm/s – 5.18gm/s

2.3 lb/T – 3.9 lb/T

ave 3.78 gm/s

Concentration

0.24 gm/dNCM @ 7% CO_2 0°C

0.41 gm/dNCM @ 50% xs air 0°C

0.172 gr/dscf @ 12% CO_2 68°F

0.167 gr/dscf @ 50% xs air 68°F

Nitrogen Oxides

4.17 gm/s – 6.53 gm/s

3.2 lb/T – 5.0 lb/T

ave 4.95 gm/s ≈ 3.8 lb/T

Concentrations

0.323 gm/dNCM 7% CO_2 0°C

0.537 gm/dNCM 50% xsair 0°C

0.22 gr/dscf 12% CO_2 68°F

0.22 gr/dscf ~~12% CO_2 68~~
50% XS 68°F

3/3

HDR
Henningson, Durham & Richardson

TELEPHONE CONVERSATION RECORD

Project ______________ Project No. 1998-01 07

Time ______ Date 5/30/81 Arch./Engr. Basel Roberts

Call to ______________ Call from Bob Masonchall WMI

Discussion, Agreement &/or Action

Carbon Monoxide

0.29 gM/s − 0.42 gms/s

0.22 lb/T − 0.32 lb/T

ave 0.33 gm/s ≈ 0.25 lb/T

Concentration

0.11 gM/dNCM @ 7% CO_2 & 0°C

0.19 gm/dNCM @ 50% xs & 0°C

0.008 gr/dscf @ 12% CO_2 & 68°F

0.007 gr/dscf @ 50% xs & 68°F

Hydrocarbons

0.143 gM/s − 0.232 gM/s

0.11 lb/T − 0.18 lb/T

ave 0.17 gm/s ≈ 0.131 lb/T

Concentrations

0.011 gm/dNCM @ 7% CO_2 & 0°C

0.019 gm/dNCM @ 50% xs air & 0°C

0.008 gr/dscf @ 12% CO_2 & 68°F

0.007 gr/dscf @ 50% xs air & 68°F

APPENDIX I:

AUGUST 7, 1980 PSD PREAMBLE

E. ROBERTS.

federal register

Thursday
August 7, 1980

Part III

Environmental Protection Agency

Requirements for Preparation, Adoption, and Submittal of Implementation Plans; Approval and Promulgation of Implementation Plans

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 51, 52, and 124

[FRL 1538-2]

Requirements for Preparation, Adoption, and Submittal of Implementation Plans; Approval and Promulgation of Implementation Plans

AGENCY: Environmental Protection Agency.

ACTION: Final rules.

SUMMARY: In response to the decision of the U.S. Court of Appeals for the D.C. Circuit in *Alabama Power Company* v. *Costle*, EPA is today amending its regulations for the prevention of significant deterioration of air quality, 40 CFR 51.24, 52.21. Today's amendments also include regulatory changes affecting new source review in nonattainment areas, including restrictions on major source growth (40 CFR 52.24) and requirements under EPA's Emission Offset Interpretative Ruling (40 CFR Part 51, Appendix S) and Section 173 of the Clean Air Act (40 CFR 51.18 (j)).

DATES: The regulatory amendments announced here come into effect on August 7, 1980. State Implementation Plan revisions meeting today's regulatory changes are to be submitted to EPA within nine months after this publication.

FOR FURTHER INFORMATION CONTACT: James B. Weigold, Standards Implementation Branch (MD-15), Office of Air Quality Planning and Standards, Research Triangle Park, N.C. 27711, 919/541-5292.

SUPPLEMENTARY INFORMATION: The contents of today's preamble are listed in the following outline. A section entitled Summary of PSD Program has been added to provide a concise narrative overview of this program.

Outline

I. Summary of PSD Program

The purpose of this summary is to help those people who are unfamiliar with the PSD program gain an understanding of it. Because this summary seeks to condense the basic PSD rules, it may not precisely reflect the amendments announced in this notice. Should there be any apparent inconsistency between the summary and the remainder of the preamble and the regulations, the remaining preamble and the regulations shall govern.

A. PSD Allows Industrial Growth Within Specific Air Quality Goals

The basic goals of the prevention of significant air quality deterioration (PSD) regulations are (1) to ensure that economic growth will occur in harmony with the preservation of existing clean air resources to prevent the development of any new nonattainment problems; (2) to protect the public health and welfare from any adverse effect which might occur even at air pollution levels better than the national ambient air quality standards; and (3) to preserve, protect, and enhance the air quality in areas of special natural recreational, scenic, or historic value, such as national parks and wilderness areas.

States are required to develop SIP revisions for PSD pursuant to regulations published today. *See* 40 CFR 51.24, "Requirements for Preparation, Adoption and Submittal of Implementation Plans." If EPA approves the proposed PSD plan, the state can then implement its own program. In the absence of an approved state PSD plan, another portion of today's regulations will govern PSD review. *See* 40 CFR 52.21, "Approval and Promulgation of Implementation Plans." EPA will implement this regulation itself if the state does not submit an approvable PSD program of its own.

States can identify in their SIPs the local land use goals for each clean area through a system of area classifications. A "clean" area is one whose air quality is better than that required by the National Ambient Air Quality Standards. Each classification differs in the amount of growth it will permit before significant air quality deterioration would be deemed to occur. Significant deterioration is said to occur when the amount of new pollution would exceed the applicable maximum allowable increase ("increment"), the amount of which varies with the classification of the area. The reference point for determining air quality deterioration in an area is the baseline concentration, which is essentially the ambient concentration existing at the time of the first PSD permit application submittal affecting that area. To date, only PSD increments for sulfur dioxide and particulate matter have been established. Increments or alternatives

Administrator did not intend to require BACT. For example, the proposal could be interpreted as requiring BACT review for any pollutant emitted from a source that was modified, regardless of whether the emissions of the pollutant increased. However, that was not the Agency's intent.

If a new unit were added or if a modification were made to a unit at a source, but there are contemporaneous decreases in emissions elsewhere at the source, BACT is required only for the pollutants for which there is a net significant plant-wide increase. For example, consider the addition of a boiler whose emissions of PM, SO_2, and NO_x each exceed *de minimis* levels. If, at the same time, an emission unit of SO_2 elsewhere at the source were shut down, such that plant-wide emissions of SO_2 either do not increase or increase by less than a *de minimis* amount, BACT is required for the new boiler only for PM and NO_x. Of course, BACT will not be required if there is no significant plant-wide increase in emissions of any pollutant. Similarly, if an existing emissions unit of a source were modified such that there is an emissions increase for one or more pollutants, but not all, BACT is required only for the pollutants for which there is both a net increase at the unit and a net significant plant-wide increase.

The above final policy governing the applicability of BACT to modifications is also consistent with existing policy under section 111, which the court said should govern modification concerns. The applicable regulation, 40 CFR 60.14(a), states that "any physical or operational change to an existing facility which results in an increase in the emissions rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification within the meaning of section 111 of the Act. Upon modification, an existing facility shall become an affected facility *for each pollutant to which a standard applies and for which there is an increase in the emissions rate* to the atmosphere." (Emphasis added.)

The regulation cited above makes two important statements about the applicability requirements. First, the BACT requirements apply only with regard to those pollutants for which there has been a net significant increase. This was emphasized by the Alabama Power decision: "Congress wished to apply the permit process, then only where industrial changes might increase pollution in an area, not where an existing plant changed its operations in ways that produced no pollution increase * * *. The interpretation of 'modification' as requiring a net increase is thus consistent with the purpose of the Act * * *. The EPA has properly exempted from best available control technology (BACT) and ambient air quality review those 'modifications' of a source that do not produce a net increase in any pollutant." 13 ERC at 2043.

Second, BACT is required for net significant increases of *any* pollutant regulated under the Act, regardless of the category of source involved or the emissions standards generally applicable to it. Section 165(a)(4) of the Act requires application of BACT "for each pollutant subject to regulation under this Act" emitted from a subject facility. 42 U.S.C. 7475(a)(4). This includes not only criteria pollutants but also all pollutants regulated under NSPS or NESHAP. In this manner, BACT can complement the NSPS process by extending coverage to additional source types and units and perhaps identifying candidates for future NSPS and NESHAP regulations.

XVI. Monitoring

In *Alabama Power*, the court held that section 165(e)(1) of the Act requires an ambient air quality analysis for each pollutant subject to regulation under the Act that a proposed source or modification would emit, prior to applying for a PSD permit. Since existing PSD regulations require monitoring only for criteria pollutants emitted in major amounts, EPA responded to the June 18, 1979 *per curiam* opinion by proposing to require, for criteria and noncriteria pollutants, an air quality analysis that would generally include monitoring data. In order to gather and analyze the appropriate data necessary to apply for a PSD permit, a proposed source would have to establish an appropriate monitoring network or would have to gather and analyze representative air monitoring data resulting from ongoing monitoring activities.

As proposed, preconstruction monitoring data was required as part of the air quality analysis when: (1) the estimated ambient impact of any new pollutant emissions from the stationary source or modification would be larger than the pollutant specific *de minimis* air quality concentration (Table B); or (2) the new emissions or net emissions increases for the pollutant would be major (100/250 tons per year). In addition to this rule, EPA proposed that a case-by-case analysis of the proposed stationary source or modification which would impact on a Class I area be conducted even though the anticipated impact would fall below the *de minimis* level. Later, in October 1979, EPA provided further guidance for applying these requirements in the draft revision of the *Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD)*, OAQPS 1.2–096, U.S. EPA, Office of Air Quality Planning and Standards and Office of Research and Development, RTP, NC 27711.

The proposal stated that certain noncriteria pollutants (sulfuric acid mist, carbon disulfide, carbonyl sulfide, methyl mercaptan, dimethyl disulfide, and dimethyl sulfide) were lacking measurement methods approved by EPA. Until such time as approved techniques would become available, the Agency proposed to use mathematical modeling to estimate the air quality resulting from the emissions of these pollutants. Considering these limitations and the general lack of experience in monitoring on a routine basis, the Administrator proposed to implement noncriteria pollutant monitoring requirements on a case-by-case basis.

In addition to the pre-application monitoring requirements already described, EPA's proposal included discretionary authority for requiring post-construction monitoring to determine the effects of the new emissions on existing air quality. For cases in which larger pollutant emission impacts are anticipated, post-construction monitoring can be a particularly useful aid in adjusting modeling results used to predict concentrations resulting from the source's operation. The approach was thought to be responsive to the *Alabama Power* decision which required EPA to use monitors to help refine modeling techniques. Accordingly, EPA proposed to generally require post-construction monitoring from large sources of particulate matter and sulfur dioxide. Other sources whose emissions are estimated to result in air quality levels approaching an allowable increment or a NAAQS could also be required to submit post-construction monitoring data. The rule promulgated today is consistent with the proposal.

The Administrator believed that the required monitoring data would be most productive in checking the accuracy of models and, in some cases, could be used to calculate increment consumption. If an applicant or other party believes that a model required by EPA had either overpredicted or underpredicted the air quality impact of a source, EPA stated that monitoring data would be evaluated to the extent possible to determine whether adjustments would be necessary. EPA anticipated that the future development of more sophisticated monitoring techniques may permit increased use of monitoring data to track increment consumption and establish ambient baselines, as well as improve the level of confidence in modeling.

Lastly, EPA considered the approach needed to smoothly usher in the new monitoring requirements. The September 5 Federal Register indicated that EPA intended to require any additional monitoring requirements, as now necessary under *Alabama Power*, to be phased in. Later, in October 1979, the draft ambient monitoring guidelines specified that a three-month allowance would be subtracted from the time interval over which the owner must monitor to allow for procuring and setting up the necessary monitoring equipment. (*See* Transition).

There was a large response to EPA's proposal and draft monitoring guidelines—nearly 100 public comments and over 800 requests for the guidance document were received. The comments indicated general agreement with EPA's interpretation of the court's preliminary opinion. But some concern was expressed over certain specific portions of the proposal: (1) the limited technology available to monitor the noncriteria pollutants in the ambient air; (2) the large cost associated with gathering all the required air quality data for all regulated pollutants; (3) the identification process for "representative" data; and (4) the need for post-construction monitoring.

Subsequent to the publication of the September 5, 1979 proposal and the receipt of the public comment, the court issued its final decision on December 14, 1979. One important change the court made upon reconsideration of the June 18 opinion was "that section 165(e)(1) requires that *an analysis* be conducted, and that it be conducted for each pollutant regulated under the Act. But * * * that section 165(e)(1), standing alone does not require monitoring as *the* method of analysis to be employed in the fulfillment of its requirements." 13 ERC 1993, 2019. This ruling gave EPA more flexibility in defining the minimum requirements for a proper analysis of the noncriteria pollutants. "EPA might * * * choose *either* monitoring or modeling as the method of analysis * * *" *Id.* In other monitoring issues the court essentially affirmed its preliminary opinions.

Today, the Administrator is promulgating the proposed monitoring requirements with the noted exceptions. (*See* 40 CFR 51.24(m), 52.21(m)). EPA will generally require one year's worth of monitoring data as part of the air quality analysis for only the criteria pollutants. For the noncriteria and hazardous pollutants, modeling, not monitoring, will be the mechanism used to perform most detailed air quality analyses. However, there may be certain circumstances where monitoring may be the only option available to perform an adequate analysis for the noncriteria pollutants (e.g., when little or no data on emission inventories for the area of concern exist). In that case, EPA will require ambient monitoring for the noncriteria pollutants if there is an acceptable method for the monitoring of that pollutant. Presently, the Administrator has acceptable methods for measuring ambient concentrations of: (1) all the criteria pollutants; (2) mercury; (3) beryllium; (4) vinyl chloride; (5) fluorides; and (6) hydrogen sulfide. A list of acceptable methods and copies of the method description are available by writing to: U.S. EPA, Environmental Monitoring Systems Laboratory, Quality Assurance Division (MD-77), Research Triangle Park, N.C. 27711. Also, techniques to measure ambient total reduced sulfur and reduced sulfur compounds have been chosen and will be added to the list within the next several months. At this time there are no acceptable methods for measuring ambient levels of asbestos and sulfuric acid mist.

As EPA gains more experience from the PSD program with respect to noncriteria pollutant analysis and as the technology develops, the Administrator will consider an increased role for ambient monitoring within the required air quality analysis.

In addition to the exemptions given in the *de minimis* section of this Federal Register publication, EPA may not always require a source owner to establish a monitoring network when the data would not validate or improve the estimates made by the mathematical models. When the existing air pollution levels are conservatively estimated to be quite small and a monitoring network could not reliably measure the predicted background concentrations, EPA will generally not require the source owner to generate preconstruction monitoring data. Also, if the source owner has submitted preconstruction data for the source site, and the post-construction monitoring network could not measure a predicted degradation in the air quality, then EPA will generally not require the source owner to collect further monitoring data. More guidance for meeting all the monitoring requirements is given in the *Ambient Monitoring Guidelines for Prevention of Significant Deterioration* (PSD), EPA-450/4-80-012, July 1980, available from the Monitoring and Data Analysis Division, OAQPS, (MD-14), U.S. EPA, Research Triangle Park, N.C. 27711.

In the September 5, 1979 proposed regulations and the October 1979 draft of *Ambient Monitoring Guidelines for Prevention of Significant Deterioration* (PSD), EPA solicited comments on the use of representative air quality data to satisfy PSD monitoring requirements. Thirty-nine comments were received on the various aspects of the use of representative air quality data. The major responses were as follows: twenty-four commenters supported the use of existing representative air quality data, especially for remote areas. Five commenters wanted EPA to allow the use of bubbler data in lieu of continuous monitoring data, seven respondents believed that data older than two years should be allowed, and three objected to the quality assurance requirements for the representative data.

EPA has considered all of the comments and has taken the following actions:

(1) The use of existing representative air quality data will be permitted in lieu of monitoring, provided that the data meet the criteria in the above reference guideline.

(2) No bubbler data will be permitted because the data should be of the same quality as that obtained if the applicant monitored according to the requirements in the above referenced guideline. This guideline specifies monitoring must be done with continuous instruments to eliminate measurement biases associated with bubbler data. Continuous measurements are also more suitable for routine monitoring purposes in checking for compliance with short-term standards.

(3) EPA will allow the use of data, for preconstruction purposes only, collected in the three-year period preceding the permit application provided reference/equivalent quality assurance procedures were followed during the measurement period. The draft guideline has previously specified a two-year requirement.

(4) EPA reaffirms the intent that all monitoring data collected must have been collected in accordance with acceptable quality assurance procedures. The specifics of the minimum quality assurance program needed for collecting air quality data are contained in the referenced guideline.

Finally, the court held that EPA had failed to provide concrete guidance to the states for designating when less than one year of monitoring data would meet the required air quality analysis, as specifically allowed under section 165(e)(2). Such guidance is given under

APPENDIX J:

LOWEST ACHIEVABLE EMISSION RATE (LAER)

STATE'S IMPLEMENTATION PLAN
LOWEST ACHIEVABLE EMISSION RATE (LAER)

STATE	LAER LOCATION	LAER
Alabama	301:0509 Chapter 3, 3.2.2	1 lb/100lb refuse charged in incinerators of more than 50 tons/day. 2 lb/100 lb of refuse charged in all others.
Alaska	306:0502 18 AAC, 50.40	.3 gr/dscf for incinerators lb/hr, .2 gr for 200 1000 .1 gr for 1000 lb/hr.
Arizona	311:0526 Article 5, R9-3-504, Sec. 20	.1 gr/dscf
Arkansas	316:0503 Section 5b	250 lb/hr allowable particulate.
California	Air Pollution Aspects Of Resource Recovery	.01 gr/dscf at 12% CO_2 SO_2 Dry Scrubber for SO_2 and acid control
Colorado	326:0612 III C1, 2, 3	.1 gr/dscf for 50 ton/day, 0.08 gr/dscf for 50 ton/day, not to exceed 20% capacity.
Connecticut		
Delaware	336:0515 VII Sec. 2.1	.2 lb/hr for 100 lb/hr charging rate .4 - 200, .6 - 300, .8 - 400, 1.0 - 500, 2.0 - 1000, 3.5 - 2000, 5.0 - 3000.
Dis. of Columbia	341:0506 Sec. 8-2:709(e)	.08 gr/dscf for District owned incinerators
Florida	346-0512 Table II A, B	.1 gr/dscf for 50 ton/day, .08 gr/dscf for 50 tons/day.
Georgia	351:0507 C1, i,ii	.2 gr/dscf for 50 ton/day, .08 gr/dscf for 50 ton/day.
Hawaii	356:0508, Sec. 11.a	.2 lb/100 lb of refuse charged.
Idaho	361:0514 1-1502	.2 lb/100 lb of refuse burned.
Illinois	366:0552, e1, 2, 4	.05 gr/hscf for 60,000

		lb/hr, .08 for 2000 but 60,000 all other incinerators .1 gr/hscf.
Indiana	371:0519 Rule 2 Sec. 2-8A,B	.3 lb/1000 lb of dry exhaust gas corrected to 50% excess air all other .5 lb/1000 lb.
Iowa	376:0511 4.4(12) a, b	.2 gr/cf of exhaust gas adjusted to 12% CO_2 for 1000 lb/hr, .35 gr for 200 lb/hr.
Kansas	381:0510, 28-19-11 A1, 2, 3	.3 gr/dscf for 200 lb/hr, .2 gr/dscf for 200 20,000 lb/hr, .1 gr/dscf for 20,000 lb/hr.
Kentucky	386:0528, 401 kar 59.020	.1 gr/dscf for 50 tons/day, .08 gr/dscf to 50 tons/day.
Louisiana	391:0510, 20.6.1	.2 gr/dscf for all incinerators.
Maine	396;0505 Chap. 104, 2B, C	.2 gr/dscf for 50 tons/day, .08 gr/dscf for 50 tons/day
Maryland	401:0502, 10.18.05.03	.1 gr/dscf for all incinerators.
Massachusetts	406:0508 Table 8	Municipal--.05 gr/dscf, others--.05 gr/dscf for 50 tons/day, .1 gr/dscf for 50 tons/day.
Michigan	411:0510 Talbe 31 B1, 2	Municipal--.3 lb/1000 lb gas (Comm. Ind.--.3 lb/1000 lb or over 100 lb/hr.)
Minnesota	416:0509 APC 7 C1, 2, 3, 4	.2 gr/dscf for 200 lb/hr, .15 gr for 200 2000 lb/hr .1 gr for 2000 4000 lb/hr, .08 for 4000 lb/hr
Mississippi	421:0503 Sec 3.8a	.2 gr/dscf for all incinerators.
Missouri	426:0506 10 csr 10-2.090 C2, A1, 2	.2 gr/dscf for 200 lb/hr for all other .3 gr/dscf
Montana	431.0594 16.8.1406 (2)	.1 gr/dscf for all incinerators.
Nebraska	436.0550 Rule 7(1) a, b	/2 gr/dscf for 2000 lb/hr, .1 gr/dscf for 2000 lb/hr.
Nevada	441:0516 Art. 6--6.1,2	3 lb/ton for 2000 lb/hr, for

		2000 lb/hr use the follow equation: $E = 40.7 \times 10^{-5}C$ where E is the maximum allowable rate of emission of particulate in lb/hr and C is the rate of charge of dry refuse in lb/hr.
New Hampshire	446:0662 VI B, C, D	.3 gr/dscf for 200 lb/hr, .2 gr/dscf for 200 4000 lb/hr, .08/dscf for 4000 lb/hr.
New Jersey	451:0722 7:27 11.3 al, 2	Common incinerator .2 gr/dscf special incinerator .1gr/dscf
New Mexico		No Rule
New York	161:0522 Part 219.4 a, b, c, d, e, f	219.4 120 lb/hr
North Carolina		.2 lb/hr for 100 lb/hr, .4 for 200, 1.0 for 500 2.0 for 1000, 4.0 for 2000 lb/hr for a refuse charge between any two consecutive rates stated above, ue the following equation: E = 0.002 P where E is maximum allowable emission in lb/hr and P is refuse charged in lb/hr
North Dakota	471:0509 33-15-05-03	Refer to Table 5 = 94 lb/hr
Ohio	476:0543, 3745-17-09 (B)	.1 lb/100 lb of refuse charged for 100 lb/hr .2 lb/100 lb of refuse charged for 100 lb/hr.
Oklahoma	481:0509 5.2	100 lb/hr
Orgeon		.3 gr/dscf for 200 lb/hr, .1 gr/dscf for 200 lb/hr.
Pennsylvania	491:5070 123.12	.1 gr/dscf for all incinerators.
Puerto Rico	496:0510 5.3.1	.2 lb/100 lb of refuse. All incinerators 50 tons; 50 tons/day or less .4 lb/100 lb.
Rhode Island	501:0515 Reg 12.2.1, 2	Small incinerators--.16 gr/dscf large--.08 gr/dscf

South Carolina	506:1003 stand. 3A	.5 lb/106 btu of heat input to incinerator.
South Dakota		.08gr/dscf for 50 tons/day.
Tennessee	516.0554 1200-3-16.03 (3)	.08 gr/dscf for all incinerators.
Texas	521:0543 131.03.05	(521:0544) 100 lb/hr
Utah	Utah Air Conserv. Part	.08 dscf @ 12% CO_2
Vermont	531:0505 5.231 (2)	.1 lb/100 lb for 50 tons/day, .08 gr/dscf for 50 tons/day,
Virginia	536.0504 4.71	.14 gr/dscf for all incinerators.
Washington	541:0583 WAC 173-400-050	.1 gr/dscf all incinerators.
West Virginia	546:05 lb Reg. VI Sec. 4.01	E(lb/hr) = F x incinerator capacity (tons/hr) where F is a factor (See Table 1 546:0511 Sec. 4)
Wisconsin	551:0559 (5) 1a, b, c	.15 lb/100- lb of exhaust gas for 4000 lb of waste, .2 lb/1000 lb for 500 4000 lb of waste, .3 lb/1000 lb for 500 lb.
Wyoming	556:0505 Sec 14 G	Refer to Table 1 556:0506 .29/mmbtu