

May 31, 1994

FACT SHEET

FINAL AIR TOXICS RULE FOR THE SECONDARY LEAD SMELTER INDUSTRY

TODAY'S ACTION...

- ◆ The Environmental Protection Agency (EPA) is today issuing a final rule to reduce air toxics emissions from secondary lead smelters. Air toxics are those pollutants known or suspected of causing cancer or other serious health effects.
- ◆ Secondary lead smelters produce lead from scrap and provide the primary means for recycling lead-acid automotive batteries. Approximately 95% of all lead-acid batteries are recycled at secondary lead smelters.

WHAT ARE THE HEALTH AND ENVIRONMENTAL BENEFITS?

- ◆ EPA's final rule will reduce emissions of air toxics, including 1,3-butadiene---a human carcinogen, by about 1,400 tons annually, representing a 67 percent reduction from current levels.
- ◆ EPA's rule will also reduce emissions of other pollutants, including particulate matter (e.g. soot, dust), and carbon monoxide. Exposure to carbon monoxide can cause adverse health effects, including fatigue, nausea and respiratory problems; carbon monoxide emissions will be reduced by 88,000 tons annually. Particulate matter emissions will be reduced by 150 tons annually. Exposure to particulate matter can cause serious respiratory problems and can even lead to premature deaths.

WHO WILL BE AFFECTED BY THE FINAL RULE?

- ◆ The Clean Air Act Amendments of 1990 requires EPA to regulate emissions of 189 listed toxic air pollutants. EPA's final standard will apply to both major and area sources that comprise the Secondary Lead Smelter Industry. Major sources are defined as those sources that emit 10 tons annually of one or more of a listed pollutant or 25 tons or more of a combination of pollutants. Area sources are defined as those sources that emit hazardous air pollutants in quantities less than that of major sources.
- ◆ The Secondary Lead Smelter Industry is comprised of 23 smelters (15 major sources and 8 area sources) located in 13 States. The final rule requires the application of maximum achievable control technology (MACT) for these sources as defined by the Clean Air Act.

WHAT DOES THE FINAL RULE REQUIRE?

- ◆ Secondary lead smelters perform three basic unit operations: battery breaking, smelting, and refining and alloying. Battery breaking is accomplished by either crushing or cutting battery cases into pieces. The plastic, spent acid, and leaded materials are then separated. Lead bearing materials are processed in one of three types of smelting furnaces: blast, reverberatory, or rotary. Molten lead from these furnaces is further processed in refining kettles and subsequently cast into molds. The waste stream from the furnaces, called slag, is either returned to the primary smelting furnace or treated in a separate furnace dedicated to slag cleaning to recover additional lead.
- ◆ There are three types of emission sources at secondary lead facilities. The regulation addresses each of these emissions points---process sources, process fugitive sources, and fugitive dust sources.
- ◆ The monitoring, recordkeeping, and reporting requirements are outlined in the final rule.

HOW MUCH WILL THE RULE COST?

- ◆ The nationwide annual cost of the rule will be about \$2.0 million. The total capital cost of the rule will be about \$4.0 million. The capacity of the industry to recycle lead-acid batteries will not be adversely affected.

FOR MORE INFORMATION...

Anyone with a computer and a modem can download the rule from the Clean Air Act Amendments bulletin board of EPA's electronic Technology Transfer Network by calling (919) 541-5742 (look under "Recently Signed Rules"). For further information about how to access the board, call (919) 541-5384. For further information about the rule, contact Phil Mulrine at (919) 541-5289.

FACILITIES NATIONWIDE AFFECTED BY THE FINAL SECONDARY LEAD

SMELTER AIR TOXICS REGULATION

1. Sanders Lead Co. - Troy, Alabama
2. GNB, Inc. - Vernon, California
3. RSR Corp. - City of Industry, California
4. Gulf Coast Recycling, Inc. - Tampa, Florida
5. GNB, Inc. - Columbus, Georgia
6. Exide Corp. - Muncie, Indiana
7. Refined Metals Corp. - Beech Grove, Indiana
8. RSR Corp. - Indianapolis, Indiana
9. Delatte Metals - Ponchatoula, Louisiana
10. Schuylkill Metals Corp. - Baton Rouge, Louisiana
11. Gopher Smelting & Refining, Inc. - Eagan, Minnesota
12. Doe Run Co. - Boss, Missouri
13. Schuylkill Metals Corp. - Forest City, Missouri
14. RSR Corp. - Middletown, New York
15. Master Metals, Inc. - Cleveland, Ohio
16. East Penn Manufacturing Co. - Lyon Station, Pennsylvania
17. Exide Corp. - Reading, Pennsylvania
18. General Smelting & Refining Co. - College Grove, Tennessee
19. Refined Metals Corp. - Memphis, Tennessee
20. GNB, Inc. - Frisco, Texas
21. Tejas Resources, Inc. - Terrell, Texas
22. PBX, Inc. - Norwalk, Ohio
23. Ross Metals - Rossville, Tennessee

↑ GCR 15
one of 23 in
country

Effective Date
of Rule 6/23/95

§ 9.1 OMB approvals under the Paperwork Reduction Act.

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40 CFR citation	OMB control no.
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National Emission Standards for Hazardous Air Pollutants for
Source Categories

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63.548 - 63.550	2060-0296
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PART 63--[AMENDED]

1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401 et seq.

2. Part 63 is revised by adding subpart X to read as follows:

Subpart X--National Emission Standards for Hazardous Air
Pollutants from Secondary Lead Smelting
Secs.

63.541 Applicability.

63.542 Definitions.

63.543 Standards for process sources.

63.544 Standards for process fugitive sources.

63.545 Standards for fugitive dust sources.

63.546 Compliance dates.

63.547 Test methods.

63.548 Monitoring requirements.

63.549 Notification requirements.

63.550 Recordkeeping and reporting requirements.

Subpart X--National Emission Standards for Hazardous Air
Pollutants from Secondary Lead Smelting

§ 63.541 Applicability.

(a) The provisions of this subpart apply to the following affected sources at all secondary lead smelters: blast, reverberatory, rotary, and electric smelting furnaces; refining kettles; agglomerating furnaces; dryers; process fugitive sources; and fugitive dust sources. The provisions of this subpart do not apply to primary lead smelters, lead refiners, or lead remelters.

(b) Table 1 of this subpart specifies the provisions of subpart A that apply and those that do not apply to owners and operators of secondary lead smelters subject to this subpart.

TABLE 1. GENERAL PROVISIONS APPLICABILITY TO SUBPART X

Reference	Applies to subpart X	Comment
63.1	Yes	
63.2	Yes	
63.3	Yes	
63.4	Yes	
63.5	Yes	
63.6 (a), (b), (c), (e), (f), (g), (i) and (j)	Yes	
63.6 (d) and (h)	No	No opacity limits in rule
63.7	Yes	
63.8	Yes	
63.9 (a), (b), (c), (d), (e), (g), (h) (1-3), (h) (5-6), and (j)	Yes	
63.9 (f) and (h) (4)	No	No opacity or visible emission limits in subpart X
63.10	Yes	
63.11	No	Flares will not be used to comply with the emission limits.
63.12 to 63.15	Yes	

§ 63.542 Definitions

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

Agglomerating furnace means a furnace used to melt into a solid mass flue dust that is collected from a baghouse.

Bag leak detection system means systems that include, but are not limited to, devices using triboelectric, light scattering, and other effects to monitor relative or absolute particulate matter emissions.

Battery breaking area means the plant location at which lead-acid batteries are broken, crushed, or disassembled and separated into components.

Blast furnace means a smelting furnace consisting of a vertical cylinder atop a crucible, into which lead-bearing charge materials are introduced at the top of the furnace and combustion air is introduced through tuyeres at the bottom of the cylinder, and that uses coke as a fuel source and that is operated at such a temperature in the combustion zone (greater than 980 °C) that lead compounds are chemically reduced to elemental lead metal.

Blast furnace charging location means the physical opening through which raw materials are introduced into a blast furnace.

Dryer means a chamber that is heated and that is used to remove moisture from lead-bearing materials before they are charged to a smelting furnace.

Dryer transition piece means the junction between a dryer and the charge hopper or conveyor, or the junction between the dryer and the smelting furnace feed chute or hopper located at the ends of the dryer.

Electric furnace means a smelting furnace consisting of a vessel into which reverberatory furnace slag is introduced and that uses electrical energy to heat the reverberatory furnace slag to such a temperature (greater than 980 °C) that lead compounds are reduced to elemental lead metal.

Enclosure hood means a hood that covers a process fugitive emission source on the top and on all sides, with openings only for access to introduce or remove materials to or from the source and through which an induced flow of air is ventilated.

Fugitive dust source means a stationary source of hazardous air pollutant emissions at a secondary lead smelter that is not associated with a specific process or process fugitive vent or stack. Fugitive dust sources include, but are not limited to, roadways, storage piles, materials handling transfer points, materials transport areas, storage areas, process areas, and buildings.

Furnace and refining/casting area means any area of a secondary lead smelter in which: (1) smelting furnaces are located; or (2) refining operations occur; or (3) casting operations occur.

Materials storage and handling area means any area of a secondary lead smelter in which lead-bearing materials (including, but not limited to, broken battery components, slag, flue dust, and dross) are stored or handled between process steps including, but not limited to, areas in which materials are stored in piles, bins, or tubs, and areas in which material is prepared for charging to a smelting furnace.

Partial enclosure means a structure that incorporates walls or partitions on at least three sides or three-quarters of the circumference of an area to screen the material or process equipment located therein to prevent the entrainment of particulate matter into the air.

Pavement cleaning means the use of vacuum equipment, water sprays, or a combination thereof to remove dust or other accumulated material from the paved areas of a secondary lead smelter.

Plant roadway means any area of a secondary lead smelter that is subject to vehicle traffic, including traffic by fork lifts, front-end loaders, or vehicles carrying whole batteries or cast lead ingots. Excluded from this definition are employee and visitor parking areas, provided they are not subject to traffic by vehicles carrying lead-bearing materials.

Process fugitive emission source means a source of hazardous air pollutant emissions at a secondary lead

smelter that is associated with lead smelting or refining but is not the primary exhaust stream from a smelting furnace and is not a fugitive dust source. Process fugitive sources include, but are not limited to, smelting furnace charging points, smelting furnace lead and slag taps, refining kettles, agglomerating furnaces, and drying kiln transition pieces.

Refining kettle means an open-top vessel that is constructed of cast iron or steel and is indirectly heated from below and contains molten lead for the purpose of refining and alloying the lead. Included are pot furnaces, receiving kettles, and holding kettles.

Reverberatory furnace means a refractory-lined furnace that uses one or more flames to heat the walls and roof of the furnace and lead-bearing scrap to such a temperature (greater than 980 °C) that lead compounds are chemically reduced to elemental lead metal.

Rotary furnace (also known as a rotary reverberatory furnace) means a furnace consisting of a refractory-lined chamber that rotates about a horizontal axis and that uses one or more flames to heat the walls of the furnace and lead-bearing scrap to such a temperature (greater than 980 °C) that lead compounds are chemically reduced to elemental lead metal.

Secondary lead smelter means any facility at which lead-bearing scrap material, primarily but not limited to

lead-acid batteries, is recycled into elemental lead by smelting.

Smelting means the chemical reduction of lead compounds to lead metal in high-temperature furnaces including, but not limited to, blast furnaces, reverberatory furnaces, rotary furnaces, and electric furnaces.

Total enclosure means a building with a roof and walls or partitions on all sides or the entire circumference to shelter the materials and/or process equipment located therein to prevent the entrainment of particulate matter into the air and with openings only to allow access and egress for people and vehicles.

Vehicle wash means a device for removing dust and other accumulated material from the wheels, body, and underside of a vehicle to prevent the inadvertent transfer of lead-contaminated material to another area of a secondary lead smelter or to public roadways.

Wet suppression means the use of water, water combined with a chemical surfactant, or a chemical binding agent to prevent the entrainment of dust into the air from fugitive dust sources.

§ 63.543 Standards for process sources.

(a) No owner or operator of a secondary lead smelter shall discharge or cause to be discharged into the atmosphere from any existing, new, or reconstructed blast, reverberatory, rotary, or electric smelting furnace any

gases that contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains of lead per dry standard cubic foot).

(b) [Reserved]

(c) No owner or operator of a secondary lead smelter with a collocated blast furnace and reverberatory furnace shall discharge or cause to be discharged into the atmosphere from any existing, new, or reconstructed blast furnace or reverberatory furnace any gases that contain total hydrocarbons in excess of 20 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide, except as allowed under (c)(1) and (c)(2) of this section.

(1) No owner or operator of a secondary lead smelter with a collocated blast furnace and reverberatory furnace shall discharge or cause to be discharged into the atmosphere from any existing blast furnace any gases that contain total hydrocarbons in excess of 360 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide, during periods when the reverberatory furnace is not operating.

(2) No owner or operator of a secondary lead smelter with a collocated blast furnace and reverberatory furnace shall discharge or cause to be discharged into the atmosphere from any blast furnace that commences construction or reconstruction after June 9, 1994, any gases

that contain total hydrocarbons in excess of 70 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide, during periods when the reverberatory furnace is not operating.

(d) No owner or operator of a secondary lead smelter with only blast furnaces shall discharge or cause to be discharged into the atmosphere from any existing blast furnace any gases that contain total hydrocarbons in excess of 360 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide.

(e) No owner or operator of a secondary lead smelter with only blast furnaces shall discharge or cause to be discharged into the atmosphere from any blast furnace that commences construction or reconstruction after June 9, 1994, any gases that contain total hydrocarbons in excess of 70 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide.

(f) If the owner or operator of a blast furnace or collocated blast and reverberatory furnace combines the blast furnace charging process fugitive emissions with the blast furnace process emissions and discharges them to the atmosphere through a common emission point, then compliance with the applicable total hydrocarbon concentration limit under paragraph (c) of this section shall be determined downstream from the point at which the two emission streams are combined.

(g) If the owner or operator of a blast furnace or a collocated blast and reverberatory furnace does not combine the blast furnace charging process fugitive emissions with the blast furnace process emissions and discharges such emissions to the atmosphere through separate emission points, then the total hydrocarbon emission rate for the blast furnace process fugitive emissions shall not be greater than 0.20 kilograms per hour (0.44 pounds per hour).

(h) The standards for process sources are summarized in table 2.

TABLE 2. SUMMARY OF STANDARDS FOR PROCESS SOURCES

Furnace configuration	Lead compounds (milligrams per dry standard cubic meter)	Total hydrocarbons	Citation
Collocated reverberatory/blast (when both furnaces operating)	2.0	20 parts per million by volume ^a	\$ 63.543(a), (c)
(when reverberatory furnace not operating)	2.0	360 parts per million by volume ^a (existing)	\$ 63.543(a), (c)(1)
		70 parts per million by volume ^a (new) ^b	\$ 63.543(a), (c)(2)
Blast	2.0	360 parts per million by volume ^a (existing)	\$ 63.543(a), (d)
		70 parts per million by volume ^a (new) ^b	\$ 63.543(e)
		0.20 kilograms per hour ^c	\$ 63.543(g)
Reverberatory, rotary, and electric	2.0	None	\$ 63.543(a)

^a Total hydrocarbons emission limits are as propane at 4 percent carbon dioxide to correct for dilution, based on a 3-hour average.

^b New sources include those furnaces that commence construction or reconstruction after June 9, 1994.

^c Applicable to blast furnace charging process fugitive emissions that are not combined with the blast furnace process emissions prior to the point at which compliance with the total hydrocarbons concentration standard is determined.

§ 63.544 Standards for process fugitive sources.

(a) Each owner or operator of a secondary lead smelter shall control the process fugitive emission sources listed in (a)(1) through (a)(6) of this section by complying with either paragraph (b) or (c) of this section.

(1) Smelting furnace and dryer charging hoppers, chutes, and skip hoists;

(2) Smelting furnace lead taps and molds;

(3) Smelting furnace slag taps and molds;

(4) Refining kettles;

(5) Dryer transition pieces; and

(6) Agglomerating furnace product taps.

(b) All process fugitive emission sources listed in (a)(1) through (a)(6) of this section shall be controlled by an enclosure hood meeting the requirements of (b)(1), (b)(2), or (b)(3) of this section except those meeting the requirements of paragraph (c) of this section. All enclosure hoods shall be ventilated to a control device that shall not discharge to the atmosphere any gases that contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains of lead per dry standard cubic foot).

(1) All process fugitive enclosure hoods except those specified for refining kettles and dryer transition pieces shall be ventilated to maintain a face velocity of at least

90 meters per minute (300 feet per minute) at all hood openings.

(2) Process fugitive enclosure hoods required for refining kettles in paragraph (a) of this section shall be ventilated to maintain a face velocity of at least 75 meters per minute (250 feet per minute).

(3) Process fugitive enclosure hoods required over dryer transition pieces in paragraph (a) of this section shall be ventilated to maintain a face velocity of at least 110 meters per minute (350 feet per minute).

(c) All process fugitive emission sources listed in (a)(1) through (a)(6) of this section except those controlled by hoods meeting the requirements of (b)(1) through (b)(3) of this section shall be located in a total enclosure that is ventilated to achieve an air velocity into the enclosure at all doorway openings of not less than 75 meters per minute (250 feet per minute). This enclosure shall be ventilated to a control device that shall not discharge to the atmosphere any gases that contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains per dry standard cubic foot).

(d) All dryer emission vents and agglomerating furnace emission vents shall be ventilated to a control device that shall not discharge to the atmosphere any gases that contain lead compounds in excess of 2.0 milligrams of lead per dry

standard cubic meter (0.00087 grains per dry standard cubic foot).

(e) The standards for process fugitive sources are summarized in table 3.

TABLE 3. SUMMARY OF STANDARDS FOR PROCESS FUGITIVE SOURCES

Fugitive emission source	Control device lead compound emission limit (milligrams per dry standard cubic meter)	Enclosed hood or doorway face velocity (meters/minute)	Citation
<u>Control Option I</u>			
Smelting furnace and dryer charging hoppers, chutes, and skip hoists	2.0	90 ^a	§ 63.544(b)
Smelting furnace lead taps and molds	2.0	90 ^a	§ 63.544(b)
Smelting furnace slag taps and molds	2.0	90 ^a	§ 63.544(b)
Refining kettles	2.0	75 ^a	§ 63.544(b)
Dryer transition pieces	2.0	110 ^a	§ 63.544(b)
Agglomerating furnace process vents and product taps	2.0	90 ^a	§ 63.544(b)
<u>Control Option II</u>			
Enclosed building ventilated to a control device	2.0	75 ^b	§ 63.544(c)
<u>Applicable to Both Control Options</u>			
Dryer and agglomerating furnace emission vents	2.0	--	§ 63.544(d)

^a Enclosure hood face velocity applicable to those process fugitive sources not located in an enclosed building ventilated to a control device.

^b Building doorway air velocity measured at all doorways that are normally open during operations.

§ 63.545 Standards for fugitive dust sources.

(a) Each owner or operator of a secondary lead smelter shall prepare and at all times operate according to a standard operating procedures manual that describes in detail the measures that will be put in place to control fugitive dust emission sources within the areas of the secondary lead smelter listed in (a)(1) through (a)(5) of this section.

- (1) Plant roadways;
- (2) Battery breaking area;
- (3) Furnace area;
- (4) Refining and casting area; and
- (5) Materials storage and handling area.

(b) The standard operating procedures manual shall be submitted to the Administrator or delegated authority for review and approval.

(c) The controls specified in the standard operating procedures manual shall at a minimum include the requirements of (c)(1) through (c)(5) of this section.

(1) Plant roadways - paving of all areas subject to vehicle traffic and pavement cleaning twice per day of those areas, except on days when natural precipitation makes cleaning unnecessary or when sand or a similar material has been spread on plant roadways to provide traction on ice or snow.

(2) Battery breaking area - partial enclosure of storage piles, wet suppression applied to storage piles with sufficient frequency and quantity to prevent the formation of dust, and pavement cleaning twice per day; or total enclosure of the battery breaking area in a structure meeting the requirements of 40 CFR 265.1101(a) and (c) and ventilation of the enclosure to a control device.

(3) Furnace area - partial enclosure and pavement cleaning twice per day; or total enclosure in a structure meeting the requirements of 40 CFR 265.1101(a) and (c) and ventilation of the enclosure to a control device.

(4) Refining and casting area - partial enclosure and pavement cleaning twice per day; or total enclosure in a structure meeting the requirements of 40 CFR 265.1101(a) and (c) and ventilation of the enclosure to a control device.

(5) Materials storage and handling area - partial enclosure of storage piles, wet suppression applied to storage piles with sufficient frequency and quantity to prevent the formation of dust, vehicle wash at each exit from the area, and paving of the area; or total enclosure of the area in a structure meeting the requirements of 40 CFR 265.1101(a) and (c) and ventilation of the enclosure to a control device and a vehicle wash at each exit.

(d) The standard operating procedures manual shall require that daily records be maintained of all wet

suppression, pavement cleaning, and vehicle washing activities performed to control fugitive dust emissions.

(e) No owner or operator of a secondary lead smelter shall discharge or cause to be discharged into the atmosphere from any building or enclosure ventilation system any gases that contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains of lead per dry standard cubic foot).

(f) [Reserved]

(g) [Reserved]

§ 63.546 Compliance dates.

(a) Each owner or operator of an existing secondary lead smelter shall achieve compliance with the requirements of this subpart no later than [Insert date 24 months after

publication of the final rule]. → 6/23/95 + 2 years = 6/23/97

(b) Each owner or operator of a secondary lead smelter that commences construction or reconstruction after June 9, 1994, shall achieve compliance with the requirements of this subpart by [Insert date of publication of final rule] or upon startup of operations, whichever is later.

§ 63.547 Test methods.

(a) The following test methods in appendix A of part 60 of this chapter in (a)(1) through (a)(5) of this section shall be used to determine compliance with the emission standards for lead compounds under §§ 63.543(a), 63.544(b), (c), and (d), and 63.545(e):

(1) Method 1 shall be used to select the sampling port location and the number of traverse points.

(2) Method 2 shall be used to measure volumetric flow rate.

(3) Method 3 shall be used for gas analysis to determine the dry molecular weight of the stack gas.

(4) Method 4 shall be used to determine moisture content of the stack gas.

(5) Method 12 shall be used to determine compliance with the lead compound emission standards. The minimum sample volume shall be 0.85 dry standard cubic meters (30 dry standard cubic feet) and the minimum sampling time shall be 60 minutes for each run. Three runs shall be performed and the average of the three runs shall be used to determine compliance.

(b) The following test methods in appendix A of part 60 listed in paragraphs (b)(1) through (b)(5) of this section shall be used, as specified, to determine compliance with the emission standards for total hydrocarbons under § 63.543(c), (d), (e), and (g):

(1) Method 1 shall be used to select the sampling port location to determine compliance under § 63.543(c), (d), (e), and (g).

(2) Method 2 shall be used to measure volumetric flow rate to determine compliance under § 63.543(g).

(3) The Single Point Integrated Sampling and Analytical Procedure of Method 3B shall be used to measure the carbon dioxide content of the stack gases to determine compliance under § 63.543(c), (d), and (e).

(4) Method 4 shall be used to measure moisture content of the stack gases to determine compliance under § 63.543(c), (d), (e), and (g).

(5) Method 25A shall be used to measure total hydrocarbon emissions to determine compliance under § 63.543(c), (d), (e), and (g). The minimum sampling time shall be 1 hour for each run. A minimum of three runs shall be performed. A 1-hour average total hydrocarbon concentration shall be determined for each run and the average of the three 1-hour averages shall be used to determine compliance. The total hydrocarbon emissions concentrations for determining compliance under § 63.543(c), (d), and (e) shall be expressed as propane and shall be corrected to 4 percent carbon dioxide, as described in paragraph (c) of this section.

(c) For the purposes of determining compliance with the emission limits under § 63.543(c), (d), and (e), the measured total hydrocarbon concentrations shall be corrected to 4 percent carbon dioxide as listed in paragraphs (c)(1) through (c)(2) of this section in the following manner:

(1) If the measured percent carbon dioxide is greater than 0.4 percent in each compliance test, the correction factor shall be determined by using equation (1).

$$F = \frac{4.0}{CO_2} \quad (1)$$

where:

F = correction factor (no units)
 CO₂ = percent carbon dioxide measured using Method 3B, where the measured carbon dioxide is greater than 0.4 percent.

(2) If the measured percent carbon dioxide is equal to or less than 0.4 percent, then a correction factor (F) of 10 shall be used.

(3) The corrected total hydrocarbon concentration shall be determined by multiplying the measured total hydrocarbon concentration by the correction factor (F) determined for each compliance test.

(d) Compliance with the face velocity requirements under § 63.544(b) and (c) for process fugitive enclosure hoods shall be determined by the following test methods in paragraphs (d)(1) or (d)(2) of this section.

(1) Owners and operators shall calculate face velocity using the procedures in paragraphs (d)(1)(i) through (d)(1)(iv) of this section.

(i) Method 1 shall be used to select the sampling port location in the duct leading from the process fugitive enclosure hood to the control device.

(ii) Method 2 shall be used to measure the volumetric flow rate in the duct from the process fugitive enclosure hood to the control device.

(iii) The face area of the hood shall be determined from measurement of the hood. If the hood has access doors, then face area shall be determined with the access doors in the fully open position.

(iv) Face velocity shall be determined by dividing the volumetric flow rate determined in paragraph (d)(1)(ii) by the total face area for the hood determined in paragraph (d)(1)(iii).

(2) The face velocity shall be measured directly using the procedures in paragraphs (d)(2)(i) through (d)(2)(vi) of this section.

(i) A propeller anemometer or equivalent device shall be used to measure hood face velocity.

(ii) The propeller of the anemometer shall be made of a material of uniform density and shall be properly balanced to optimize performance.

(iii) When the anemometer is mounted with the propeller shaft in a horizontal position, the threshold velocity of the anemometer shall not exceed 15 meters per minute (50 feet per minute) as determined by a procedure equivalent to that in Method 14 of appendix A of part 60.

(iv) The measurement range of the anemometer shall extend to at least 300 meters per minute (1,000 feet per minute).

(v) A known relationship shall exist between the anemometer signal output and air velocity, and the anemometer must be equipped with a suitable readout system.

(vi) Hood face velocity shall be determined for each hood during normal operation with all access doors in the open position and by placing the anemometer in the plane of the hood opening.

(e) Owners and operators shall measure doorway air velocity to determine compliance with the doorway velocity requirement for enclosed buildings in § 63.544(c) using the procedures in paragraphs (e)(1) and (e)(2) of this section.

(1) Owners and operators shall use a propeller anemometer or equivalent device meeting the requirements of paragraphs (d)(2)(ii) through (d)(2)(v) of this section.

(2) Doorway air velocity into the building shall be determined for each doorway in the open position during normal operation by placing the anemometer in the plane of the doorway opening.

§ 63.548 Monitoring requirements.

(a) Owners and operators of secondary lead smelters shall prepare, and at all times operate according to, a standard operating procedures manual that describes in detail procedures for inspection, maintenance, and bag leak

detection and corrective action plans for all baghouses (fabric filters) that are used to control process, process fugitive, or fugitive dust emissions from any source subject to the lead emission standards in §§ 63.543, 63.544, and 63.545, including those used to control emissions from building ventilation. This provision shall not apply to process fugitive sources that are controlled by wet scrubbers.

(b) The standard operating procedures manual for baghouses required by paragraph (a) of this section shall be submitted to the Administrator or delegated authority for review and approval.

(c) The procedures specified in the standard operating procedures manual for inspections and routine maintenance shall, at a minimum, include the requirements of paragraphs (a)(1) through (a)(12) of this section.

(1) Daily monitoring of pressure drop across each baghouse cell.

(2) Daily visual observation of baghouse discharge or stack.

(3) Daily visual inspection to ensure that dust is being removed from hoppers.

(4) Daily check of compressed air supply for pulse-jet baghouses.

(5) Daily visual inspection of isolation dampers for proper operation.

(6) Daily monitoring of cleaning cycle by observing meters or control panel instrumentation.

(7) Weekly visual inspection of bag cleaning mechanisms for proper functioning.

(8) Weekly check of bag tension on reverse air and shaker type baghouses.

(9) Monthly visual inspection of baghouse interior for air leaks.

(10) Monthly inspection of bags and bag connections.

(11) Monthly inspection of fans for wear, material buildup, and corrosion.

(12) Continuous operation of a bag leak detection system.

(d) The procedures specified in the standard operating procedures manual for maintenance shall, at a minimum, include a preventative maintenance schedule that is consistent with the baghouse manufacturer's instructions for routine and long-term maintenance.

(e) The bag leak detection system required by paragraph (a)(12) of this section, shall meet the specifications and requirements of paragraphs (e)(1) through (e)(5) of this section.

(1) The bag leak detection system must be capable of detecting particulate matter emissions at concentrations of 1.0 milligram per actual cubic meter (0.00044 grains per actual cubic foot) or less.

(2) The bag leak detection system sensor must provide output of relative or absolute particulate matter emissions.

(3) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in particulate emissions is detected.

(4) For negative pressure or induced air baghouses, the bag leak detector must be installed downstream of the baghouse and upstream of any wet acid gas scrubber. For positive pressure baghouses, a bag leak detector must be installed in each baghouse compartment or cell. Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(5) The bag leak detection system shall be installed and operated in a manner consistent with available guidance from the U.S. Environmental Protection Agency or, in the absence of such guidance, the manufacturer's written specifications and recommendations for installation, operation, and calibration of the system. The calibration of the system shall, at a minimum, consist of establishing the relative baseline output level by adjusting the sensitivity and the averaging period of the device, and establishing the alarm set points and the alarm delay time. The system must be fully operational at the time of the initial lead compliance test required to demonstrate compliance with the applicable lead emission standard under §§ 63.543, 63.544, or 63.545. The owner or operator shall

not adjust the sensitivity, averaging period, alarm set points, or alarm delay time after the initial lead compliance test unless a test is performed to demonstrate compliance with the applicable lead emission standard after the adjustments are made.

(f) The standard operating procedures manual required by paragraph (a) of this section shall include a corrective action plan that specifies the procedures to be followed in the case of a bag leak detection system alarm. The corrective action plan shall include, at a minimum, the procedures used to determine and record the time and cause of the alarm as well as the corrective actions taken to correct the control device malfunction or minimize emissions as specified in paragraphs (f)(1) and (f)(2) of this section.

(1) The procedures used to determine the cause of the alarm must be initiated within 30 minutes of the alarm.

(2) The cause of the alarm must be alleviated by taking the necessary corrective action(s) which may include, but not be limited to, paragraphs (f)(1)(i) through (f)(2)(vi) of this section.

(i) Inspecting the baghouse for air leaks, torn or broken filter elements, or any other malfunction that may cause an increase in emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media, or otherwise repairing the control device.

(iv) Sealing off a defective baghouse compartment.

(v) Cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system.

(vi) Shutting down the process producing the particulate emissions.

(g) The owner or operator of a secondary lead smelter that uses a wet scrubber to control particulate matter and metal hazardous air pollutant emissions from a process fugitive source shall monitor and record the pressure drop and water flow rate of the wet scrubber during the initial test to demonstrate compliance with the lead emission limit under § 63.544(d). Thereafter, the owner or operator shall monitor and record the pressure drop and water flow rate at least once every hour and shall maintain the pressure drop and water flow rate no lower than 30 percent below the pressure drop and water flow rate measured during the initial compliance test.

(h) The owner or operator of a blast furnace or collocated reverberatory and blast furnace subject to the total hydrocarbon standards in § 63.543(c), (d), or (e), must comply with the requirements of either paragraph (h)(1) or (h)(2) of this section, to demonstrate continuous compliance with the total hydrocarbon emission standards.

(1) Continuous Temperature Monitoring:

(i) The owner or operator of a blast furnace or a collocated reverberatory furnace and blast furnace subject to the total hydrocarbon emission standards in § 63.543(c), (d), or (e) shall install, calibrate, maintain, and continuously operate a device to monitor and record the temperature of the afterburner or the combined blast furnace and reverberatory furnace exhaust streams consistent with the requirements for continuous monitoring systems in subpart A, General Provisions.

(ii) The owner or operator of a blast furnace or a collocated reverberatory furnace and blast furnace subject to the total hydrocarbon emission standards shall monitor and record the temperature of the afterburner or the combined blast furnace and reverberatory furnace exhaust streams every 15 minutes during the total hydrocarbon compliance test and determine an arithmetic average for the recorded temperature measurements.

(iii) To remain in compliance with the standards for total hydrocarbons, the owner or operator must maintain an afterburner or combined exhaust temperature such that the average temperature in any 3-hour period does not fall more than 28 °C (50 °F) below the average established in paragraph (h)(1)(ii) of this section. An average temperature in any 3-hour period that falls more than 28 °C (50 °F) below the average established in

paragraph (h)(1)(ii) of this section, shall constitute a violation of the applicable emission standard for total hydrocarbons under § 63.543(c), (d), or (e).

(2) Continuous Monitoring of Total Hydrocarbon Emissions:

(i) The owner or operator of a secondary lead smelter shall install, operate, and maintain a total hydrocarbon continuous monitoring system and comply with all of the requirements for continuous monitoring systems found in subpart A, General Provisions.

(ii) Allowing the 3-hour average total hydrocarbon concentration to exceed the applicable total hydrocarbon emission limit under § 63.543 shall constitute a violation of the applicable emission standard for total hydrocarbons under § 63.543(c), (d), or (e).

§ 63.549 Notification requirements.

(a) The owner or operator of a secondary lead smelter shall comply with all of the notification requirements of § 63.9 of subpart A, General Provisions.

(b) The owner or operator of a secondary lead smelter shall submit the fugitive dust control standard operating procedures manual required under § 63.545(a) and the standard operating procedures manual for baghouses required under § 63.548(a) to the Administrator or delegated authority along with a notification that the smelter is seeking review and approval of the these plans and

procedures. Owners or operators of existing secondary lead smelters shall submit this notification no later than [Insert date 18 months after publication of the final rule]. The owner or operator of a secondary lead smelter that commences construction or reconstruction after June 9, 1994, shall submit this notification no later than 180 days before startup of the constructed or reconstructed secondary lead smelter, but no sooner than [Insert date of publication of final rule].

§ 63.550 Recordkeeping and reporting requirements.

(a) Each owner or operator of a secondary lead smelter shall maintain for a period of 5 years, records of the information listed in paragraphs (a)(1) through (a)(8) of this section.

(1) The results of initial and subsequent compliance tests for lead compounds and total hydrocarbons.

(2) An identification of the date and time of all bag leak detection system alarms, their cause, and an explanation of the corrective actions taken.

(3) If an owner or operator chooses to demonstrate continuous compliance with the total hydrocarbon emission standards under § 63.543(c), (d), or (e) by employing the method allowed in § 63.548(h)(1), the records shall include the output from the continuous temperature monitor, an identification of periods when the 3-hour average temperature fell below the minimum established under

§ 63.548(h)(1), and an explanation of the corrective actions taken.

(4) If an owner or operator chooses to demonstrate continuous compliance with the total hydrocarbon emission standard under § 63.543(c), (d), or (e) by employing the method allowed in § 63.548(h)(2), the records shall include the output from the total hydrocarbon continuous monitoring system, an identification of the periods when the 3-hour average total hydrocarbon concentration exceeded the applicable standard and an explanation of the corrective actions taken.

(5) Records of maintenance, calibration, or other procedures required by this rule for any monitoring system used to demonstrate compliance with an applicable requirement.

(6) Any recordkeeping required as part of the practices described in the standard operating procedures manual required under § 63.545(a) for the control of fugitive dust emissions.

(7) Any recordkeeping required as part of the practices described in the standard operating procedures manual for baghouses required under § 63.548(a).

(8) Records of the pressure drop and water flow rate for wet scrubbers used to control metal hazardous air pollutant emissions from process fugitive sources.

(b) The owner or operator of a secondary lead smelter shall comply with all of the reporting requirements under § 63.10 of the General Provisions. The submittal of reports shall be no less frequent than specified under § 63.10(e)(3) of the General Provisions. Once a source reports a violation of the standard or excess emissions, the source shall follow the reporting format required under § 63.10(e)(3) until a request to reduce reporting frequency is approved.

(c) The reports required under paragraph (b) of this section shall include the information specified in paragraphs (c)(1) through (c)(6) of this section.

(1) The report shall include records of all alarms from the bag leak detection system specified in § 63.548(e).

(2) The report shall include a description of the procedures taken following each bag leak detection system alarm pursuant to § 63.548(f)(1) and (2).

(3) The report shall include the information specified in either paragraph (c)(3)(i) or (c)(3)(ii) of this section, consistent with the monitoring option selected under § 63.548(h).

(i) A record of the temperature monitor output, in 3-hour block averages, for those periods when the temperature monitored pursuant to § 63.548(h)(1) fell below the level established in § 63.548(h)(1).

(ii) A record of the total hydrocarbon concentration, in 3-hour block averages, for those periods when the total hydrocarbon concentration being monitored pursuant to § 63.548(h)(2) exceeds the relevant limits established in § 63.543(c), (d), and (e).

(4) The reports required under paragraph (b) of this section shall contain a summary of the records maintained as part of the practices described in the standard operating procedures manual for baghouses required under § 63.548(a) including an explanation of the periods when the procedures were not followed and the corrective actions taken.

(5) The reports required under paragraph (b) of this section shall contain an identification of the periods when the pressure drop and water flow rate of wet scrubbers used to control process fugitive sources dropped below the levels established in § 63.548(g) and an explanation of the corrective actions taken.

(6) The reports required under paragraph (b) of this section shall contain a summary of the fugitive dust control measures performed during the required reporting period, including an explanation of the periods when the procedures outlined in the standard operating procedures manual pursuant to § 63.545(a) were not followed and the corrective actions taken. The reports shall not contain copies of the daily records required to demonstrate compliance with the

requirements of the standard operating procedures manuals
required under §§ 63.545(a) and 63.548(a).

[BILLING CODE: 6560-50-P]



Florida Department of Environmental Protection

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Governor

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Virginia B. Wetherell
Secretary

March 7, 1994

Mr. Larry Carlson
Lake Engineering, Inc.
Suite 500, 35 Glenlake Parkway
Atlanta, Georgia 30328

Re: Department's Review of Preapplication Modeling Results for Gulf Coast Recycling's PSD Permit Application

Dear Mr. Carlson:

The Department has reviewed your December 29, 1993, letter and the accompanying computer diskettes containing preapplication sulfur dioxide (SO₂) Ambient Air Quality Standards (AAQS) modeling results for Gulf Coast Recycling's PSD permit application. This letter responds to preapplication information only and does not constitute a PSD completeness review. That review begins only after Gulf Coast Recycling submits a PSD application to the Department along with the appropriate processing fee. We are providing the following comments as guidance for submitting the AAQS portion of your PSD application.

1. In order for a modeling analysis to show attainment of the AAQS, you must add a representative background concentration to the modeled concentrations. You did not include this concentration in your analysis. This background concentration should be representative of the overall air quality entering the region and of any sources which were not explicitly modeled (i.e., natural and unidentified sources). Normally, this concentration is a nonzero value and is based on air quality monitoring data collected in the vicinity of a proposed project or source. You have not provided sufficient evidence that this background concentration should be zero. In our November 24, 1993, letter to you responding to your proposed modeling protocol, you were advised to use a background concentration based on an annual average concentration taken from the Davis Island monitor near Gulf Coast Recycling. You were to add this value of 24 ug/m³ to your modeled impacts for all averaging times. Therefore, the argument that your modeling results indicate that Gulf Coast Recycling does not significantly contribute to modeled exceedances of the SO₂ AAQS in Gulf Coast's impact area is only partially correct. Since the modeling considered only the impacts from Gulf Coast Recycling and other modeled sources, your analysis would not be fully correct until the effects of an added background concentration are included.

Mr. Larry Carlson

March 1, 1994

Page Two

2. However, based upon your concern with double counting of source impacts and our review of the modeling information you have provided us, we have reconsidered the background concentration value for this project. In order to minimize double counting of source impacts, we have chosen a background concentration value obtained from another monitor some distance away from Gulf Coast Recycling and most of the sources input into the modeling. This monitor located in the southwestern portion of the county (TECO Big Bend Road SO₂ monitor 1800-021-G02) would less likely be impacted by sources included in the modeling. The background concentration obtained from this monitor is 6 ug/m³ and is the highest annual average reported during the past three years. You should add this value to the modeled concentrations for all averaging times or else follow the alternative procedure given below.

3. If you believe the background concentration given above is still not representative of an appropriate background concentration for use in Gulf Coast's air quality analysis, you may try to further refine this estimate by using the procedure given in Sections 9.2.2 and 9.2.3 of the "Guideline on Air Quality Models (Revised)" (EPA-450/2/-78-027R), (1986), supplement A (1987) and supplement B (1993) to obtain an alternative background concentration to add to the modeled results.

If you have any further modeling questions, please call Cleve Holladay at 904-488-1344.

Sincerely,



C.H. Fancy, P.E.

Chief

Bureau of Air Regulation

CHF/cgh

cc: Jerry Campbell, EPCHC
Bill Thomas, DEP/SWD
Doug Beason, DEP/OGC
John Bunyak, NPS
Joyce Morales-Caramella, GCR

6 ug/m³
vs. 24



Lawton Chiles
Governor

Florida Department of
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11-24-93

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Virginia B. Wetherell
Secretary

November 24, 1993

Mr. Larry Carlson
Lake Engineering, Inc.
Suite 500, 35 Glenlake Parkway
Atlanta, Georgia 30328

Re: Department's Review of Your October 15 and October 19 letters concerning Modeling Protocol for Gulf Coast Recycling Permit No. AO29-173310

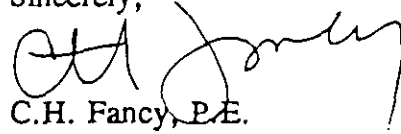
Dear Mr. Carlson:

The Department has reviewed your October 15 and October 19, 1993 letters concerning the modeling protocol for Gulf Coast Recycling and we have the following comments:

1. The Prevention of Significant Deterioration (PSD) rule requirements contained in F.A.C. Rule 17-212.400, the Air Quality Models guidance contained in F.A.C. Rule 17-210.500, the Ambient Air Quality Standards guidance contained in F.A.C. Rule 17-272.300, and the Maximum Allowable Increases (PSD increments) guidance contained in F.A.C. Rule 17-272.500 direct that estimates of concentrations of pollutants in the ambient air be made by using air quality modeling. In addition, the "Guideline on Air Quality Models (Revised)" (1986), supplement A(1987) and supplement B (1993) states in Section 11.2.2 that "Modeling is the preferred method for determining emission limitations for both new and existing sources. When a preferred model is available, model results alone (including background) are sufficient. Monitoring will normally not be accepted as the sole basis for emission limitation determination in flat terrain areas." Therefore, in preparing the PSD application for Gulf Coast Recycling, you should do the air quality analysis using concentrations predicted by modeling, except that monitor data may be used to determine the background concentration for use in the ambient air quality standards analysis (AAQS).
2. In order to determine a background concentration for the AAQS analysis, the Department will permit Gulf Coast to use the highest annual average during the past three years taken from the Davis Island SO₂ monitor (4360-0350-G02) for all SO₂ averaging times. This value is 24 ug/m³ and it should be added to the modeled impacts for the appropriate averaging times.

If you have any further modeling questions, please call Cleve Holladay at 904-488-1344.

Sincerely,



C.H. Fancy, P.E.

Chief

Bureau of Air Regulation

CHF/cgh

cc: Jerry Kissel, HCEPC
Bill Thomas, DEP/SWD
Doug Beason, DEP/OGC
John Bunyak, NPS
Jewell Harper, USEPA
Joyce Morales-Caramella, GCR



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Virginia B. Wetherell
Secretary

September 24, 1993

Mr. Larry Carlson
Lake Engineering, Inc.
Suite 500, 35 Glenlake Parkway
Atlanta, Georgia 30328

Re: Department's Review of Modeling Protocol for Gulf Coast Recycling Permit
Number AO29-173310

Dear Mr. Carlson:

The Department has reviewed your modeling protocol and we have the following comments:

1. The "Guideline on Air Quality Models" (EPA, 1986a) including Supplements A (1987) and B (1993), the New Source Workshop Manual (Draft, EPA, 1990), and Chapters 17-212.400 and 17-210.500, F.A.C., provide EPA and FDEP modeling guidance. In addition, for determining impacts on PSD Class I areas, the department follows the recommendations of the Interagency Workgroup on Air Quality Modeling (TWAQM). These recommendations are contained in the "Interagency Workgroup on Air Quality Modeling (TWAQM) Phase I Report: Interim Recommendation for Modeling Long Range Transport and Impacts on Regional Visibility (EPA-454/R-93-015). This document can be downloaded from the EPA's Support Center for Regulatory Air Models: Bulletin Board System (SCRAM BBS). The SCRAM BBS phone number is (919)-541-5742. The applicant must also evaluate the impacts of all toxic emissions due to the project for comparison with the Florida Air Toxics Reference Concentrations (formerly called "No Threat Levels" or "NTL's"). We have attached a copy of the "Florida Air Toxics Permitting Strategy" along with the most recent table of Florida Air Reference Concentrations for various toxic chemicals to aid you in this evaluation.
2. Based on guidance contained in the above mentioned documents, the required air quality analyses for the national ambient air quality standards (AAQS) and prevention of significant (PSD) increments are carried out in the proposed project's significant impact area (SIA). The SIA is a circular area with a radius extending from the source to (1) the most distant point where approved dispersion modeling predicts a significant impact from the project will occur, or (2) a modeling receptor distance of 50 km,

whichever is less. The highest modeled pollutant concentration for each averaging time is used to determine whether the source will have a significant ambient impact for that pollutant. The SIA used for the air quality analysis of a particular pollutant is the largest of these averaging time areas determined for that pollutant.

The model runs to determine ambient impacts and PSD increment consumption will be based on the size of the SIA. Your suggested receptor network is satisfactory out to 10 km for the screening phase. However, if your SIA is greater than 10 km, the network should be expanded beyond 10 km to fill in the SIA. Refined modeling should be performed using a finer mesh receptor grid centered over any critical receptors identified in the screening phase and using a full year's meteorological data for the year containing the meteorological conditions which impacted the critical receptors. Because the dimensions of the Class I areas are fixed, the Department has established the use of specified receptor networks in the Class I areas. The receptor network for the Chassahowitzka Wilderness Area is attached.

3. The Department has identified the SO₂ sources that need to be modeled for this application. These sources are included in the attachment. There are three inventories of sources: one for the AAQS analysis, one for the PSD Class II increment analysis, and one for the PSD Class I increment analysis. The PSD increment inventories include both increment consuming PSD sources and increment expanding PSD sources.

4. Since the Department is following the IWAQM guidelines for evaluating air quality impacts on PSD Class I areas, the applicant must evaluate the project's impact on the Chassahowitzka Wilderness Area even though this project is greater than 50 km from the Class I area. This evaluation includes a cumulative PSD Class I increment impact analysis, if necessary, and an air quality related values (AQRV) analysis.

Because of the IWAQM guidelines, the Class I source inventory is more extensive than the Class II inventory. In addressing the Class I increment impacts, the applicant must first model the project's impact on the Class I receptors provided in the attachment. The highest impacts are compared to the National Park Service's (NPS) recommended significance levels of 0.48 ug/m³, 0.07 ug/m³, and 0.025ug/m³ for the 3-hour, 24-hour and annual averaging times, respectively. If the project's impacts are less than the NPS significance levels, then the increment analysis is concluded. If the impacts are greater, then a cumulative PSD Class I increment impact analysis is done using the inventory provided and inputting it into ISCST2. If exceedances of the PSD Class I increments are modeled using this method, then the project impacts alone may be modeled with ISCST2 at the exceedance receptors during the periods which the exceedances occurred. If the project's impact on the exceedance receptors are all less than the NPS significant levels, then the analysis is concluded. If not, then modeling must be performed using the long-range transport model MESOPUFF II. The impacts from this modeling are then compared with the PSD Class I increments. If exceedances of the PSD Class I increments are modeled using MESOPUFF II, the

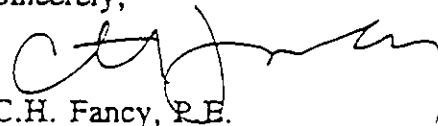
project's impacts alone may again be modeled for comparison with the NPS significance levels at the exceedance receptors during the periods when the exceedances occurred. If the project's impact are greater than the significance levels, then projected emissions from the project must be reduced.

The AQRV analysis evaluates potential effects of the project on vegetation, wildlife, soils, aquatic resources, and visibility. This analysis must be performed regardless of whether the project's impacts are less than the NPS significance levels. Depending upon the project's predicted impacts, the analysis may, however, require at the simplest level only a literature review or at the most complex level a deposition analysis using MESOPUFF II in addition to the literature review.

5. The Davis Island SO₂ monitor (4360-0350-G02) is the closest monitor to this project. The data collected from this monitor can be used to establish background SO₂ concentrations to be used with the modeling results to determine compliance with the AAQS. Based on 1992 data from this monitor, the Department has recommended that the SO₂ background concentrations to be used in the AAQS analysis are the following: 21 ug/m³, annual average; 93 ug/m³, 24-hour average (second highest 24-hour monitored value in 1992); 304 ug/m³, 3-hour average (second highest 3-hour monitored value in 1992). These concentrations should be added to the modeled impacts for the appropriate averaging times.

The remainder of the modeling protocol as outlined in your letter is satisfactory. If you have any further modeling questions, please call Cleve Holladay at 904-488-1344.

Sincerely,



C.H. Fancy, P.E.

Chief

Bureau of Air Regulation

Attachments

CHF/cgh

cc: Jerry Kissel, HCEPC
Bill Thomas, DEP/SWD
Doug Beason, DEP/OGC
John Bunyak, NPS
Jewell Harper, USEPA

ATTACHMENT 2

*PSD Class 1
Receptors
Chassahowitzka*

UTME (km)	UTMW (km)
340.3	3165.7
340.3	3167.7
340.3	3169.8
340.7	3171.9
342.0	3174.0
343.0	3176.2
343.7	3178.3
342.4	3180.6
341.1	3183.4
339.0	3183.4
336.5	3183.4
334.0	3183.4
331.5	3183.4

Gulf Coast SO2 AAQS Inventory									
Owner	Co	Dist from GCR (km)	UTME (km)	UTMW (km)	SO2 (g/s)	Height (m)	Temp (K)	Velocity (m/s)	Diam (m)
Gulf Coast Recycling	HI	0.0	364.0	3093.5	47.12	45.72	344.1	37.49	0.61
Griffin	HI	2.6	364.1	3096.4	0.06	15.24	505.2	6.71	0.85
Couch Construction	HI	3.4	362.1	3096.7	2.14	12.50	449.7	20.12	1.25
Cargill/Nutrena	HI	3.6	360.8	3095.8	0.05	4.88	483.0	8.84	0.30
Hills Co RRF	HI	4.3	368.2	3092.7	21.40	50.00	491.0	18.30	1.80
Tampa McKay Bay	HI	4.3	360.0	3091.9	21.42	45.70	449.7	21.30	1.34
Weyerhaeuser	HI	4.6	362.8	3098.3	0.55	7.62	463.6	5.49	0.61
Royster	HI	4.7	362.8	3098.4	0.55	7.62	533.0	8.53	0.76
Nitram	HI	4.9	362.5	3089.0	3.11	27.43	399.7	10.67	1.37
CLM Chloride Metals	HI	5.7	361.8	3088.3	21.02	30.00	375.0	20.00	0.61
TECO Hooker's Pt	HI	6.5	358.0	3091.0	41.33	85.34	419.1	6.10	3.44
TECO Hooker's Pt	HI	6.5	358.0	3091.0	41.33	85.34	438.0	5.49	3.44
TECO Hooker's Pt	HI	6.5	358.0	3091.0	57.04	85.34	434.1	7.92	3.66
TECO Hooker's Pt	HI	6.5	358.0	3091.0	56.95	85.34	421.9	7.32	3.66
TECO Hooker's Pt	HI	6.5	358.0	3091.0	84.55	85.34	448.0	10.97	1.42
TECO Hooker's Pt	HI	6.5	358.0	3091.0	107.86	85.34	434.1	22.25	2.87
TECO Gannon	HI	7.4	360.0	3087.5	760.28	93.27	415.8	28.65	3.05
TECO Gannon	HI	7.4	360.0	3087.5	483.59	93.27	419.6	38.40	3.23
TECO Gannon	HI	7.4	360.0	3087.5	567.25	93.27	426.9	22.86	3.05
TECO Gannon	HI	7.4	360.0	3087.5	690.73	93.27	423.6	23.16	4.45
TECO Gannon	HI	7.4	360.0	3087.5	1148.49	93.27	433.0	24.69	5.36
TECO Gannon	HI	7.4	360.0	3087.5	1.38	10.67	816.3	136.55	1.52
Cargill/Gardinier	HI	11.3	363.4	3082.4	9.60	38.40	328.0	11.56	2.44
Cargill Fertilizer	HI	11.3	362.9	3082.5	98.70	45.72	339.7	9.20	2.44
Cargill Fertilizer	HI	11.3	362.9	3082.5	54.61	21.34	344.1	11.28	2.74
Cargill Fertilizer	HI	11.3	362.9	3082.5	4.01	40.54	315.2	15.24	2.13
TECO Big Bend	HI	18.9	361.9	3075.0	9949.35	149.35	404.7	12.80	7.32
TECO Big Bend	HI	18.9	361.9	3075.0	654.00	149.35	341.9	17.98	7.32
TECO Big Bend	HI	18.9	361.9	3075.0	79.18	22.86	770.8	18.59	4.27
TECO Big Bend	HI	18.9	361.9	3075.0	11.30	10.67	816.3	136.20	1.50
FPL Bartow	PI	24.2	342.4	3082.6	882.44	91.44	424.7	31.09	2.74
FPL Bartow	PI	24.2	342.4	3082.6	729.04	91.44	408.0	34.44	3.35
FPL Bartow	PI	24.2	342.4	3082.6	1.81	9.14	541.3	5.18	0.91
FPL Bartow	PI	24.2	342.4	3082.6	196.55	13.72	771.9	22.25	5.27
FPL Higgins	PI	27.7	336.5	3098.4	322.30	53.00	423.0	7.30	3.80
FPL Higgins	PI	27.7	336.5	3098.4	25.20	16.76	727.4	7.47	3.80
Cons. Minerals	HI	29.9	393.8	3096.3	27.00	46.33	298.0	12.14	1.77
Pinellas RRF	PI	30.3	335.2	3084.1	94.40	49.07	504.7	26.82	2.38
CF Ind-Plant City	HI	32.9	388.0	3116.0	19.98	7.62	560.8	17.74	1.07
CF Ind-Plant City	HI	32.9	388.0	3116.0	88.28	33.53	316.3	19.69	1.52
CF Ind-Plant City	HI	32.9	388.0	3116.0	109.20	60.35	353.0	16.40	2.44
CF Ind-Plant City	HI	32.9	388.0	3116.0	2.97	28.65	326.3	7.93	3.05
CF Ind-Plant City	HI	32.9	388.0	3116.0	39.57	54.86	313.6	8.18	2.80
FPL Bayboro	PI	33.6	338.8	3071.3	197.80	12.20	755.0	6.40	7.00
Mobil Nichols	PO	35.5	398.3	3084.3	27.90	25.90	342.0	14.10	2.29
IMC New Wales	PO	35.6	396.6	3078.9	315.00	60.70	350.0	15.31	2.60
Conserve Nichols	PO	35.6	398.4	3084.2	52.50	45.70	352.0	12.00	2.30
Royster, Piney Point	MA	39.4	348.7	3057.3	49.40	60.98	328.0	8.08	2.36
FPL Manatee	MA	39.7	367.2	3054.1	1587.60	152.10	425.8	23.61	7.92

Royster Mulberry	PO	43.6	406.7	3085.2	36.82	61.00	360.0	12.20	2.13
CF Ind-Bartow	PO	45.8	408.5	3082.5	11.90	36.40	339.0	16.11	2.13
CF Ind-Bartow	PO	45.8	408.5	3082.5	142.80	63.41	361.0	7.28	2.13
Lakeland Larsen	PO	46.2	409.3	3102.8	112.08	50.29	444.1	6.86	3.05
Lakeland Larsen	PO	46.2	409.3	3102.8	29.11	30.48	783.2	28.22	5.79
W.R. Grace-Seminole	PO	46.4	409.8	3087.0	143.77	60.96	347.0	34.00	1.52
Evans Boiler	PA	46.5	383.3	3135.8	28.70	12.20	505.0	11.90	1.00
Evans Dryer	PA	46.5	383.3	3135.8	34.00	25.90	346.0	17.30	1.00
TECO Polk	PO	46.5	402.5	3067.4	49.68	45.72	400.0	16.76	5.79
TECO Polk	PO	46.5	402.5	3067.1	17.64	45.72	389.0	16.15	4.42
TECO Polk	PO	46.5	402.5	3066.8	38.82	22.86	785.0	27.43	5.49
TECO Polk	PO	46.5	402.3	3067.5	8.20	60.70	1033.0	10.70	1.40
Lakeland MacIntosh	PO	46.9	409.2	3106.1	367.24	45.72	402.4	21.29	2.74
Lakeland MacIntosh	PO	46.9	409.3	3102.8	500.10	76.20	350.0	19.70	4.88
Farmland	PO	47.3	409.5	3080.1	67.16	30.48	355.0	9.27	2.29
Farmland	PO	47.3	409.5	3080.1	50.40	45.72	355.0	11.55	2.44
Agrico So.Pierce	PO	48.8	407.5	3071.3	130.09	45.73	350.0	39.06	1.60
FPC Polk	PO	53.7	414.4	3073.9	49.44	34.40	400.0	40.50	4.10
Hardee PS	HA	54.5	404.8	3057.4	277.60	22.90	389.0	23.90	4.88
USSAC	PO	57.5	416.1	3068.6	126.00	53.40	355.0	15.91	2.59

Emission Inventory for PSD Class I Analysis for SO2

County	Facility	UTM		SO2 (g/s)	Height (m)	Temperature (K)	Velocity (m/s)	Diameter (m)
		East	North					
Hardee	Hardee Power Station	404.8	3,057.4	92.53	22.90	389.0	23.90	4.88
Hardee	Hardee Power Station	404.8	3,057.3	92.53	22.90	389.0	23.90	4.88
Hardee	Hardee Power Station	404.8	3,057.5	92.53	22.90	389.0	23.90	4.88
Hillsborough	CF Industries	388.0	3,116.0	88.20	33.50	316.0	19.50	1.50
Hillsborough	CF Industries proposed D	388.0	3,116.0	54.60	60.35	353.0	17.77	2.41
Hillsborough	CF Industries proposed C	388.0	3,116.0	54.60	60.35	353.0	17.77	2.41
Hillsborough	CF Industries baseline C	388.0	3,116.0	-50.40	60.35	353.0	16.40	2.41
Hillsborough	CF Industries baseline D	388.0	3,116.0	-50.40	60.35	353.0	16.40	2.41
Hillsborough	CF Industries	388.0	3,116.0	-105.00	18.80	316.0	18.80	1.52
Hillsborough	Cargill Fertilizer (Gardinier) SAP #7	363.4	3,082.4	46.20	45.72	355.0	9.20	2.29
Hillsborough	Cargill Fertilizer (Gardinier) SAP #8	363.4	3,082.4	52.50	45.72	355.0	8.61	2.41
Hillsborough	Cargill Fertilizer (Gardinier) SAP #9	363.4	3,082.4	54.60	45.72	344.0	12.50	2.74
Hillsborough	Cargill Fertilizer (Gardinier) dryer	363.4	3,082.4	-28.89	20.73	310.0	13.12	1.07
Hillsborough	Cargill Fertilizer (Gardinier) SAP #4, 5, 6	363.4	3,082.4	-196.30	22.60	322.0	19.51	1.52
Hillsborough	Cargill Fertilizer (Gardinier) SAP #7	363.4	3,082.4	-50.71	45.72	355.0	9.20	2.29
Hillsborough	TECO Big Bend - Unit 4	361.9	3,075.0	654.70	149.40	342.2	19.81	7.32
Hillsborough	TECO Big Bend - Units 1 & 2	361.9	3,075.0	-2,436.00	149.40	422.0	28.65	7.32
Hillsborough	TECO Big Bend - Unit 3	361.9	3,075.0	-1,218.00	149.40	418.0	14.33	7.32
Hillsborough	Mobil Dig-4 boiler (AMAX)	394.8	3,067.7	0.60	8.20	505.0	7.57	0.41
Hillsborough	Mobil Dig-4 dryer (AMAX)	394.9	3,069.8	1.90	30.50	334.0	7.26	1.82
Osceola	FPC/Intercession City prop turbines/7 EA	446.3	3,126.0	124.40	15.24	819.8	56.21	4.21
Osceola	FPC/Intercession City prop turbines/7 FA	446.3	3,126.0	110.40	15.24	880.8	32.07	7.01
Pinellas	Pinellas Co Resource Recovery Facility	335.3	3,084.4	62.24	49.10	522.0	27.72	2.74
Polk	Lakeland City Power CT (Larsen)	409.2	3,102.8	29.11	30.48	783.2	28.22	5.79
Polk	Lakeland McIntosh 3	409.5	3,105.8	500.10	76.20	350.0	19.70	4.88

Emission Inventory for PSD Class 1 Analysis for SO2

County	Facility	UTM		SO2 (g/s)	Height (m)	Temperature (K)	Velocity (m/s)	Diameter (m)
		East	North					
Polk	WR Grace/Seminole SAP #3	409.8	3,087.0	143.77	60.96	347.0	34.00	1.52
Polk	WR Grace/Seminole SAP #4	409.8	3,087.0	-40.32	60.96	347.0	25.10	1.52
Polk	WR Grace/Seminole SAP #5	409.8	3,087.0	-40.32	60.96	347.0	25.10	1.52
Polk	WR Grace/Seminole SAP #6	409.8	3,087.0	-40.32	60.96	347.0	25.10	1.52
Polk	WR Grace/Seminole dryer	409.8	3,087.0	-39.66	15.24	327.0	17.32	2.04
Polk	WR Grace/Seminole SAP #1	409.8	3,087.0	-108.00	45.72	352.0	16.50	1.37
Polk	WR Grace/Seminole SAP #2	409.8	3,087.0	-108.00	45.72	352.0	16.50	1.37
Polk	WR Grace/Seminole SAP #3	409.8	3,087.0	-52.50	45.72	311.0	16.70	1.32
Polk	Mobil Mining & Minerals SR 676 #4 dryer	398.3	3,084.3	2.44	25.90	339.0	15.20	2.29
Polk	Mobil Mining & Minerals SR 676 boiler	398.3	3,084.3	-13.89	28.40	340.0	19.24	1.09
Polk	Mobil Mining & Minerals SR 676 boiler	398.3	3,084.3	-0.87	4.00	522.0	1.80	0.80
Polk	Royster #1	406.7	3,085.2	-152.70	51.00	356.0	9.90	2.13
Polk	Royster #2	406.7	3,085.2	35.70	61.00	360.0	12.20	2.13
Polk	US Agri-Chem Hwy 60 dryer	413.2	3,086.3	-3.41	15.80	332.0	10.01	1.81
Polk	US Agri-Chem Hwy 60 SAP	413.2	3,086.3	-42.00	28.96	305.0	7.50	2.12
Polk	US Agri-Chem Hwy 630 H2SO4 1	416.1	3,068.6	63.00	53.40	355.0	15.91	2.59
Polk	US Agri-Chem Hwy 630 H2SO4 2	416.1	3,068.6	63.00	53.40	355.0	15.91	2.59
Polk	US Agri-Chem Hwy 630 H2SO4 X	416.2	3,068.7	-78.80	29.00	314.0	6.77	3.02
Polk	US Agri-Chem Hwy 630 GTSP	416.0	3,069.0	-18.27	28.35	330.0	17.60	1.52
Polk	CF Industries DAP 1-3	408.5	3,082.5	3.97	36.40	339.0	16.11	2.13
Polk	CF Industries H2SO4 5	408.5	3,082.5	50.40	63.41	361.0	10.88	2.13
Polk	CF Industries H2SO4 6	408.5	3,082.5	50.40	63.41	370.0	7.28	2.13
Polk	CF Industries H2SO4 7	408.5	3,082.5	42.00	67.10	351.0	9.80	2.40
Polk	CF Industries H2SO4 1	408.5	3,082.5	-60.90	30.49	350.0	12.20	1.37
Polk	CF Industries H2SO4 2	408.5	3,082.5	-110.25	30.49	350.0	10.37	1.68

Emission Inventory for PSD Class I Analysis for SO2

County	Facility	UTM		SO2 (g/s)	Height (m)	Temper- ature (K)	Velocity (m/s)	Diameter (m)
		East	North					
Polk	CF Industries H2SO4 3	408.5	3,082.5	-107.10	30.49	364.0	4.27	2.74
Polk	CF Industries H2SO4 4	408.5	3,082.5	-174.83	30.49	358.0	7.93	2.13
Polk	CF Industries H2SO4 5	408.5	3,082.5	-226.80	63.41	358.0	10.67	2.13
Polk	CF Industries H2SO4 6	408.5	3,082.5	-170.10	63.41	359.0	10.37	2.13
Polk	Farmland Industries 3, 4 H2SO4	409.5	3,079.5	67.16	30.48	355.0	9.27	2.29
Polk	Farmland Industries 5 H2SO4	409.5	3,079.5	41.96	45.72	355.0	9.65	2.44
Polk	Farmland Industries 1, 2 H2SO4	409.5	3,079.5	-83.98	30.48	311.0	20.18	1.37
Polk	Agrico Pierce dryers 1, 2	404.1	3,079.0	-24.32	24.38	339.0	12.94	1.52
Polk	Agrico Pierce dryers 3, 4	404.1	3,079.0	-23.00	24.38	339.0	18.82	2.43
Polk	Agrico South Pierce H2SO4	407.5	3,071.3	-75.60	45.73	350.0	26.40	1.60
Polk	Agrico South Pierce H2SO4	407.5	3,071.3	113.50	45.73	350.0	39.06	1.60
Polk	Agrico South Pierce DAP plant	407.5	3,071.3	4.41	38.10	328.0	14.60	3.10
Polk	Conserve Inc. rock dryer	398.4	3,084.2	-3.88	24.40	339.0	12.90	1.52
Polk	Conserve Inc.	398.4	3,084.2	42.00	45.70	352.0	10.30	2.30
Polk	Conserve Inc.	398.4	3,084.2	-54.60	30.50	308.0	18.90	1.80
Polk	IMC New Wales DAP	396.6	3,078.9	5.54	36.60	319.1	20.15	1.81
Polk	IMC New Wales multiphos	396.6	3,078.9	4.80	52.40	314.0	15.80	1.40
Polk	IMC New Wales SAP #1, 2, 3 projected	396.6	3,078.9	189.00	61.00	350.0	15.31	2.60
Polk	IMC New Wales SAP #4, 5 projected	396.6	3,078.9	126.00	60.70	350.0	15.31	2.60
Polk	IMC New Wales rock dryer	396.6	3,078.9	-34.27	21.00	347.0	18.60	2.13
Polk	IMC New Wales SAP #1, 2, 3 baseline	396.6	3,078.9	-146.00	61.00	350.0	14.28	2.60
Polk	IMC New Wales AFI Plant	396.6	3,078.9	0.20	52.40	322.0	13.10	2.40
Polk	Mobil-Electrophos boiler	405.6	3,079.4	-6.53	7.32	464.0	3.23	0.91
Polk	Mobil-Electrophos boiler	405.6	3,079.4	-10.05	6.10	464.0	7.71	0.91
Polk	Mobil-Electrophos rock dryer	405.6	3,079.4	-21.81	18.29	350.0	6.79	1.83

Emission Inventory for PSD Class I Analysis for SO2

County	Facility	UTM		SO2 (g/s)	Height (m)	Temperature (K)	Velocity (m/s)	Diameter (m)
		East	North					
Polk	Mobil - Electrophos calciner	405.6	3,079.4	-7.11	25.61	306.0	6.97	2.11
Polk	Mobil - Electrophos coke dryer	405.6	3,079.4	-3.17	18.29	322.0	22.87	0.70
Polk	Mobil - Electrophos furnace	405.6	3,079.4	-47.25	29.27	314.0	8.52	2.11
Polk	Auburndale Cogeneration	420.8	3,103.3	6.35	48.80	411.0	14.30	5.49
Hillsborough	Hillsborough Co Resource Recovery Facility	368.2	3,092.7	21.40	50.00	491.0	18.30	1.80
Pasco	Proposed Pasco Co Cogeneration Facility	385.6	3,139.0	5.04	30.48	384.3	17.11	3.35
Polk	Ridge Cogeneration	416.7	3,100.4	13.80	99.10	350.0	14.54	3.05
Hillsborough	Tampa City McKay Bay Refuse-to-Energy	360.0	3,091.9	21.42	45.70	449.7	21.30	1.34
Hernando	Asphalt Pavers No. 3	359.9	3,162.4	2.25	12.20	377.0	10.58	1.37
Hernando	Asphalt Pavers No. 4	361.4	3,168.4	1.76	8.50	357.4	10.95	1.08
Hillsborough	CLM CHI	361.8	3,088.3	21.02	30.00	375.0	20.00	0.61
Pasco	Couch Construction - Odessa (asphalt)	340.7	3,119.5	7.25	9.14	436.0	22.30	1.40
Pasco	Couch Construction - Zephyrhills (asphalt)	390.3	3,129.4	3.54	6.10	422.0	21.00	1.38
Pasco	Driscoll Paving (Asphalt)	340.6	3,119.2	0.23	12.20	339.0	6.47	3.05
Hernando	ER Jahna (lime dryer)	386.7	3,155.8	0.82	10.67	327.0	8.99	1.81
Pasco	Evans Packing	383.3	3,135.8	0.20	12.30	466.2	9.20	0.40
Hernando	FDOC boiler #3	382.2	3,166.1	2.99	9.14	478.0	4.57	0.61
Hernando	Florida Mining & Materials kiln 2	356.2	3,169.9	1.45	32.01	394.2	9.90	4.27
Hernando	Florida Crushed Stone kiln 1	360.0	3,162.4	98.40	97.60	442.0	23.23	4.88
Citrus	Crystal River 4	334.2	3,204.5	1,008.80	182.90	398.0	21.00	6.90
Citrus	Crystal River 5	334.2	3,204.5	1,008.80	182.90	398.0	21.00	6.90
Citrus	Crystal River 1	334.2	3,204.5	-314.00	152.00	422.0	42.10	4.57
Citrus	Crystal River 2	334.2	3,204.5	-1,859.00	153.00	422.0	42.10	4.88
Volusia	FPC/DeBary prop turbines	465.7	3,197.2	466.40	15.24	819.8	56.21	4.21
Pinellas	Hospital Corp of AM boiler #1	333.4	3,141.0	0.08	10.98	533.0	4.00	0.31
Hillsborough	Couch Construction	362.1	3,096.7	2.14	12.50	449.7	20.12	1.25

Emission Inventory for PSD Class 1 Analysis for SO2

County	Facility	UTM		SO2 (g/s)	Height (m)	Temperature (K)	Velocity (m/s)	Diameter (m)
		East	North					
Pinellas	Hospital Corp of AM boiler #2	333.4	3,141.0	0.08	10.98	533.0	4.00	0.3
Osceola	Kissimmee Util Exist	460.1	3,129.3	32.10	18.30	422.0	38.00	3.6
Lake	Proposed Lake Co Cogeneration Facility	434.0	3,198.8	5.04	30.48	384.3	17.13	3.3
Pasco	New Port Richey Hospital boiler #1	331.2	3,124.5	0.06	10.98	544.0	3.88	0.31
Pasco	New Port Richey Hospital boiler #2	331.2	3,124.5	0.03	10.98	544.0	3.88	0.31
Hernando	Oman Construction (Asphalt)	359.8	3,164.9	2.09	7.62	347.0	6.29	1.8
Orange	Orlando Util Stanton 1	483.5	3,150.6	601.00	167.60	325.7	21.60	5.8
Orange	Orlando Util Stanton 2	483.5	3,150.6	91.80	167.60	324.2	23.50	5.8
Pasco	Overstreet Paving (Asphalt)	355.9	3,143.7	3.67	9.14	408.0	16.00	1.30
Pasco	Pasco County Resource Recovery Facility	347.1	3,139.2	14.10	83.82	394.3	15.70	3.05
Hillsborough	Borden dryer	394.6	3,069.6	-6.48	30.48	344.0	14.79	1.82
Polk	Borden dryer	414.5	3,109.0	-5.29	17.07	333.0	8.26	2.34
Polk	Brewster Imperial dryer	404.8	3,069.5	-19.26	27.41	339.0	15.25	2.29
Polk	Dolime dryer	404.8	3,069.5	-5.68	27.41	333.0	20.67	1.52
Polk	Dolime boiler	404.8	3,069.5	-4.52	27.41	494.1	7.25	0.61
Polk	Estech/Swift dryer	411.5	3,074.2	-23.94	18.29	339.0	8.47	2.95
Polk	Estech/Swift dryer	411.5	3,074.2	-22.80	18.75	340.0	5.06	2.95
Polk	Estech/Swift SAP	411.5	3,074.2	-92.87	30.79	358.0	3.90	2.13
Hillsborough	Gen. Port Cement kiln 4	358.0	3,090.6	-62.99	35.97	505.2	17.61	2.74
Hillsborough	Gen. Port. Cement kiln 5	358.0	3,090.6	-69.30	45.42	494.1	5.80	3.81
Hillsborough	Stauffer boiler	325.6	3,116.7	-4.86	7.32	464.0	3.23	0.91
Hillsborough	Stauffer dryer	325.6	3,116.7	-1.50	18.29	322.0	22.87	0.70
Hillsborough	Stauffer furnace	325.6	3,116.7	-50.93	49.00	335.0	3.60	1.20
Hillsborough	Stauffer kiln	325.6	3,116.7	-7.36	25.61	306.0	6.97	2.13
Hillsborough	Stauffer roaster	325.6	3,116.7	-0.45	25.61	322.0	6.97	0.91

Emission Inventory for PSD Class I Analysis for SO2

County	Facility	UTM		SO2 (g/s)	Height (m)	Temper- ature (K)	Velocity (m/s)	Diameter (m)
		East	North					
Highlands	TECO Sebring Airport	464.3	3,035.4	55.62	45.72	441.3	24.17	1.83
Highlands	TECO Sebring Airport	464.3	3,035.4	55.62	45.72	449.7	24.35	1.83
Osceola	Kissimmee Cane Island	447.7	3,127.9	29.40	12.20	654.0	29.10	3.05
Polk	FPC Polk	414.4	3,073.9	12.36	34.40	400.0	40.50	4.10
Polk	FPC Polk	414.4	3,073.9	12.36	34.40	400.0	40.50	4.10
Polk	FPC Polk	414.4	3,073.9	12.36	34.40	400.0	40.50	4.10
Polk	FPC Polk	414.4	3,073.9	12.36	34.40	400.0	40.50	4.10
Polk	TRD Polk	402.5	3,067.4	49.68	45.72	400.0	16.76	5.79
Polk	TRD Polk	402.5	3,067.4	17.64	45.72	389.0	16.15	4.42
Polk	TRD Polk	402.5	3,067.4	38.82	22.86	785.0	27.43	5.49
Polk	TRD Polk	402.5	3,067.4	8.20	60.70	1033.0	10.70	1.40

County	Facility	UTM		SO2 (g/s)	Height (m)	Temperature (K)	Velocity (m/s)	Diameter (m)
		East	North					
Hardee	Hardee Power Station	404.8	3,057.4	92.53	22.90	389.0	23.90	4.88
Hardee	Hardee Power Station	404.8	3,057.3	92.53	22.90	389.0	23.90	4.88
Hardee	Hardee Power Station	404.8	3,057.5	92.53	22.90	389.0	23.90	4.88
Hillsborough	CF Industries	388.0	3,116.0	88.20	33.50	316.0	19.50	1.50
Hillsborough	CF Industries proposed D	388.0	3,116.0	54.60	60.35	353.0	17.77	2.44
Hillsborough	CF Industries proposed C	388.0	3,116.0	54.60	60.35	353.0	17.77	2.44
Hillsborough	CF Industries baseline C	388.0	3,116.0	-50.40	60.35	353.0	16.40	2.44
Hillsborough	CF Industries baseline D	388.0	3,116.0	-50.40	60.35	353.0	16.40	2.44
Hillsborough	CF Industries	388.0	3,116.0	-105.00	18.80	316.0	18.80	1.52
Hillsborough	Cargill Fertilizer (Gardiner) SAP #7	363.4	3,082.4	46.20	45.72	355.0	9.20	2.29
Hillsborough	Cargill Fertilizer (Gardiner) SAP #8	363.4	3,082.4	52.50	45.72	355.0	8.63	2.44
Hillsborough	Cargill Fertilizer (Gardiner) SAP #9	363.4	3,082.4	54.60	45.72	344.0	12.50	2.74
Hillsborough	Cargill Fertilizer (Gardiner) dryer	363.4	3,082.4	-28.89	20.73	310.0	13.12	1.07
Hillsborough	Cargill Fertilizer (Gardiner) SAP #4, 5, 6	363.4	3,082.4	-196.30	22.60	322.0	19.51	1.52
Hillsborough	Cargill Fertilizer (Gardiner) SAP #7	363.4	3,082.4	-50.71	45.72	355.0	9.20	2.29
Hillsborough	TECO Big Bend - Unit 4	361.9	3,075.0	654.70	149.40	342.2	19.81	7.32
Hillsborough	TECO Big Bend - Units 1 & 2	361.9	3,075.0	-2,436.00	149.40	422.0	28.65	7.32
Hillsborough	TECO Big Bend - Unit 3	361.9	3,075.0	-1,218.00	149.40	418.0	14.33	7.32
Hillsborough	Mobil Big-4 boiler (AMAX)	394.8	3,067.7	0.60	8.20	505.0	7.57	0.41
Hillsborough	Mobil Big-4 dryer (AMAX)	394.9	3,069.8	1.90	30.50	334.0	7.26	1.82
Osceola	FPC/Intercession City prop turbines/7 EA	446.3	3,126.0	124.40	15.24	819.8	56.21	4.21
Osceola	FPC/Intercession City prop turbines/7 FA	446.3	3,126.0	110.40	15.24	880.8	32.07	7.04
Pinellas	Pinellas Co Resource Recovery Facility	335.3	3,084.4	62.24	49.10	522.0	27.72	2.74
Polk	Lakeland City Power CF (Larsen)	409.2	3,102.8	29.11	30.48	783.2	28.22	5.79
Polk	Lakeland McIntosh 3	409.5	3,105.8	500.10	76.20	350.0	19.70	4.88
Polk	WR Grace/Seminole SAP #3	409.8	3,087.0	143.77	60.96	347.0	24.00	1.52
Polk	WR Grace/Seminole SAP #4	409.8	3,087.0	-40.32	60.96	347.0	25.10	1.52
Polk	WR Grace/Seminole SAP #5	409.8	3,087.0	-40.32	60.96	347.0	25.10	1.52

Emission Inventory for PSD Class 2 Analysis for SO2

County	Facility	UTM		SO2 (g/s)	Height (m)	Temper- ature (K)	Velocity (m/s)	Diameter (m)
		East	North					
Polk	WR Grace/Seminole SAP #6	409.8	3,087.0	-40.32	60.96	347.0	25.10	1.52
Polk	WR Grace/Seminole dryer	409.8	3,087.0	-39.66	15.24	327.0	17.32	2.04
Polk	WR Grace/Seminole SAP #1	409.8	3,087.0	-108.00	45.72	352.0	16.50	1.37
Polk	WR Grace/Seminole SAP #2	409.8	3,087.0	-108.00	45.72	352.0	16.50	1.37
Polk	WR Grace/Seminole SAP #3	409.8	3,087.0	-52.50	45.72	311.0	16.70	1.52
Polk	Mobil Mining & Minerals SR 676 #4 dryer	398.3	3,084.3	2.44	25.90	339.0	15.20	2.29
Polk	Mobil Mining & Minerals SR 676 calciner	398.3	3,084.3	-13.89	28.40	340.0	19.24	1.09
Polk	Mobil Mining & Minerals SR 676 calciner	398.3	3,084.3	-0.87	4.00	522.0	1.80	0.80
Polk	Royster #1	406.7	3,085.2	-152.71	51.00	356.0	9.90	2.13
Polk	Royster #2	406.7	3,085.2	35.70	61.00	360.0	12.20	2.13
Polk	US Agri-Chem Hwy 60 dryer	413.2	3,086.3	-3.41	15.80	332.0	10.01	1.83
Polk	US Agri-Chem Hwy 60 SAP	413.2	3,086.3	-42.00	28.96	305.0	7.50	2.12
Polk	US Agri-Chem Hwy 630 H2SO4 1	416.1	3,068.6	63.00	53.40	355.0	15.91	2.59
Polk	US Agri-Chem Hwy 630 H2SO4 2	416.1	3,068.6	63.00	53.40	355.0	15.91	2.59
Polk	US Agri-Chem Hwy 630 H2SO4 X	416.2	3,068.7	-78.80	29.00	314.0	6.77	3.02
Polk	US Agri-Chem Hwy 630 GTSP	416.0	3,069.0	-18.27	28.35	330.0	17.60	1.52
Polk	CF Industries DAP 1-3	408.5	3,082.5	3.97	36.40	339.0	16.11	2.13
Polk	CF Industries H2SO4 5	408.5	3,082.5	50.40	63.41	361.0	10.88	2.13
Polk	CF Industries H2SO4 6	408.5	3,082.5	50.40	63.41	370.0	7.28	2.13
Polk	CF Industries H2SO4 7	408.5	3,082.5	42.00	67.10	351.0	9.80	2.40
Polk	CF Industries H2SO4 1	408.5	3,082.5	-60.90	30.49	350.0	12.20	1.37
Polk	CF Industries H2SO4 2	408.5	3,082.5	-110.25	30.49	350.0	10.37	1.68
Polk	CF Industries H2SO4 3	408.5	3,082.5	-107.10	30.49	364.0	4.27	2.74
Polk	CF Industries H2SO4 4	408.5	3,082.5	-174.83	30.49	358.0	7.93	2.13
Polk	CF Industries H2SO4 5	408.5	3,082.5	-226.80	63.41	358.0	10.67	2.13
Polk	CF Industries H2SO4 6	408.5	3,082.5	-170.10	63.41	359.0	10.37	2.13
Polk	Farmland Industries 3, 4 H2SO4	409.5	3,079.5	67.16	30.48	355.0	9.27	2.29
Polk	Farmland Industries 5 H2SO4	409.5	3,079.5	41.96	45.72	355.0	9.65	2.44

Emission Inventory for PSD Class 2 Analysis for SO2

County	Facility	UTM		SO2 (g/s)	Height (m)	Temper- ature (K)	Velocity (m/s)	Diameter (m)
		East	North					
Polk	Farmland Industries 1, 2 H2SO4	409.5	3,079.5	-83.98	30.48	311.0	20.18	1.17
Polk	Agrico Pierce dryers 1, 2	404.1	3,079.0	-24.32	24.38	339.0	12.94	1.52
Polk	Agrico Pierce dryers 3, 4	404.1	3,079.0	-23.00	24.38	339.0	18.82	2.41
Polk	Agrico South Pierce H2SO4	407.5	3,071.3	-75.60	45.73	350.0	26.40	1.60
Polk	Agrico South Pierce H2SO4	407.5	3,071.3	113.50	45.73	350.0	39.06	1.60
Polk	Agrico South Pierce DAP plant	407.5	3,071.3	4.41	38.10	328.0	14.60	3.10
Polk	Conserve Inc. rock dryer	398.4	3,084.2	-3.88	24.40	339.0	12.90	1.52
Polk	Conserve Inc.	398.4	3,084.2	42.00	45.70	352.0	10.30	2.30
Polk	Conserve Inc.	398.4	3,084.2	-54.60	30.50	308.0	18.90	1.80
Polk	IMC New Wales DAP	396.6	3,078.9	5.54	36.60	319.1	20.15	1.81
Polk	IMC New Wales multiphos	396.6	3,078.9	4.80	52.40	314.0	15.80	1.40
Polk	IMC New Wales SAP #1, 2, 3 projected	396.6	3,078.9	189.00	61.00	350.0	15.31	2.60
Polk	IMC New Wales SAP #4, 5 projected	396.6	3,078.9	126.00	60.70	350.0	15.31	2.60
Polk	IMC New Wales rock dryer	396.6	3,078.9	-34.27	21.00	347.0	18.60	2.13
Polk	IMC New Wales SAP #1, 2, 3 baseline	396.6	3,078.9	-146.00	61.00	350.0	14.28	2.60
Polk	IMC New Wales AFI Plant	396.6	3,078.9	0.20	52.40	322.0	13.10	2.40
Polk	Mobil-Electrophos boiler	405.6	3,079.4	-6.53	7.32	464.0	3.23	0.91
Polk	Mobil-Electrophos boiler	405.6	3,079.4	-10.05	6.10	464.0	7.71	0.91
Polk	Mobil-Electrophos rock dryer	405.6	3,079.4	-21.81	18.29	350.0	6.79	1.83
Polk	Mobil-Electrophos calciner	405.6	3,079.4	-7.11	25.61	306.0	6.97	2.13
Polk	Mobil-Electrophos coke dryer	405.6	3,079.4	-3.17	18.29	322.0	22.87	0.70
Polk	Mobil-Electrophos furnace	405.6	3,079.4	-47.25	29.27	314.0	8.52	2.13
Polk	Auburndale Cogeneration	420.8	3,103.3	6.35	48.80	411.0	14.30	5.49
Hillsborough	Hillsborough Co Resource Recovery Facility	368.2	3,092.7	21.40	50.00	491.0	18.30	1.80
Pasco	Proposed Pasco Co Cogeneration Facility	385.6	3,139.0	5.04	30.48	384.3	17.13	3.35
Polk	Ridge Cogeneration	416.7	3,100.4	13.80	99.10	350.0	14.54	3.05
Hillsborough	Tampa City McKay Bay Refuse-to-Energy	360.0	3,091.9	21.42	45.70	449.7	21.30	1.34
Hillsborough	CLM Clf	361.8	3,088.3	21.02	30.00	375.0	20.00	0.61

Emission Inventory for PSD Class 2 Analysis for SO2

County	Facility	UTM		SO2 (g/s)	Height (m)	Temperature (K)	Velocity (m/s)	Diameter (m)
		East	North					
Pasco	Evans Packing	383.3	3,135.8	0.20	12.30	466.2	9.20	0.40
Hillsborough	Borden dryer	394.6	3,069.6	-6.48	30.48	344.0	14.79	1.82
Polk	Borden dryer	414.5	3,109.0	-5.29	17.07	333.0	8.26	2.34
Polk	Brewster Imperial dryer	404.8	3,069.5	-19.26	27.44	339.0	15.25	2.29
Polk	Dolime dryer	404.8	3,069.5	-5.68	27.43	333.0	20.67	1.52
Polk	Dolime boiler	404.8	3,069.5	-4.52	27.43	494.1	7.25	0.61
Polk	Estech/Swift dryer	411.5	3,074.2	-23.94	18.29	339.0	8.47	2.95
Polk	Estech/Swift dryer	411.5	3,074.2	-22.80	18.75	340.0	5.06	2.95
Polk	Estech/Swift SAP	411.5	3,074.2	-92.87	30.79	358.0	3.90	2.13
Hillsborough	Gen. Port Cement kiln 4	358.0	3,090.6	-62.99	35.97	505.2	17.61	2.74
Hillsborough	Gen. Port. Cement kiln 5	358.0	3,090.6	-69.30	45.42	494.1	5.80	3.81
Highlands	TECO Sebring Airport	464.3	3,035.4	55.62	45.72	441.3	24.10	1.83
Highlands	TECO Sebring Airport	464.3	3,035.4	55.62	45.72	449.7	24.35	1.83
Polk	FPC Polk	414.4	3,073.9	12.36	34.40	400.0	40.50	4.10
Polk	FPC Polk	414.4	3,073.9	12.36	34.40	400.0	40.50	4.10
Polk	FPC Polk	414.4	3,073.9	12.36	34.40	400.0	40.50	4.10
Polk	FPC Polk	414.4	3,073.9	12.36	34.40	400.0	40.50	4.10
Hillsborough	Couch Construction	362.1	3,096.7	2.14	12.50	449.7	20.12	1.25
Polk	TECO Polk	402.5	3,067.4	49.68	45.72	400.0	16.76	5.79
Polk	TECO Polk	402.5	3,067.4	17.64	45.72	389.0	16.15	4.42
Polk	TECO Polk	402.5	3,067.4	38.82	22.86	785.0	27.43	5.49
Polk	TECO Polk	402.5	3,067.4	8.20	60.70	1033.0	10.70	1.40

8-17-93

Resources Management
Division of Air

AUG 17 1993

RECEIVED



August 17, 1993

*Make applicant make
arrangement*

Mr. Cleve Holiday
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Twin Towers Office Building
Tallahassee, Florida 32399-2400

VIA TELEFAX

RE: Modeling Protocol for Gulf Coast Recycling
Permit Number AO29-173310

Dear Mr. Holiday:

Gulf Coast Recycling, Inc., located in Tampa (Hillsborough County), is a lead-acid battery recycler that operates a blast furnace which was installed and brought on line in late 1984. It was determined in June 1991 that this furnace installation should have been subject to the Federal Prevention of Significant Deterioration (PSD) regulations. By letter dated April 22, 1993 the Florida Department of Environmental Regulation (FDER) notified Gulf Coast that a PSD application needs to be submitted. In addition to the application, the PSD regulations require computer modeling to be performed to determine the anticipated ambient air quality impacts resulting from the proposed project. On behalf of Gulf Coast Recycling, Inc., Lake Engineering, Inc. is submitting the following proposed air dispersion modeling protocol for this project.

The Gulf Coast facility is located at 1901 North 66th Street, UTM coordinates 364048 East, 3093548 North. The facility is located in a mixed-use area that is considered rural for modeling purposes. The topography within 50 km of the site is predominantly flat with no extreme terrain features. Sulfur dioxide has been established as the only pollutant that is required to be modeled. The SO₂ emissions will be emitted from one source, one stack with dimensions of 150 ft. tall and 3 ft. diameter.

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Use these 4360 035 002 000 004 003 001

Letter to Mr. Cleve Holiday

August 17, 1993

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The latest ISCST2 model, currently approved by the EPA, will be used to determine impacts during 3-hr, 24-hr, and annual averaging periods. The five years of met data selected are 1982-1986 from surface and upper air station number 12842 located in Tampa. The regulatory default option will be used with no decay coefficient allowed, resulting in conservative concentrations. Building downwash will not be calculated due to the sufficient height of the stack as determined by Good Engineering Practice (GEP). ○ ✕

Two model runs will be used to determine ambient impacts attributable to Gulf Coast alone. An overall 10 km receptor grid will be used, one run with 100 m spacing out to 1 km and the other run with 1000 m spacing out to 10 km. These concentrations, when added to the ambient background concentration, will be compared to the Florida Ambient Air Quality Standards (FAAQS) of 1300 $\mu\text{g}/\text{m}^3$, 3-hr; 260 $\mu\text{g}/\text{m}^3$, 24-hr; and 60 $\mu\text{g}/\text{m}^3$, annual. The background concentration for the subject area and the last full year of monitoring data, including the location/number of the monitor at which it was measured, is hereby being requested to assist us in our dispersion modeling analysis.

Two additional model runs, utilizing the same receptor grids as above, will be used to determine the increment consumption of Gulf Coast and all major increment consuming SO_2 sources within 30 km. Emissions from Gulf Coast and the appropriate surrounding sources will be modeled together to determine the cumulative ambient concentration for the three averaging periods. These concentrations will then be compared to the Class II increment amounts of 512 $\mu\text{g}/\text{m}^3$, 3-hr; 91 $\mu\text{g}/\text{m}^3$, 24-hr; and 20 $\mu\text{g}/\text{m}^3$, annual.

Attached is a list of 23 surrounding major sources and their respective emission and stack data. This list was taken from a 361-page APIS report obtained from the FDER that listed a total of 325 facilities and 990 sources within a 30 km radius of Gulf Coast. On guidance from you, the "20 by D" rule, developed in North Carolina, was used to determine which sources were required to be used in the modeling:

sources located 0 to 5 km from Gulf Coast: all are to be modeled
sources located 05 to 10 km: ignore those < 100 tons/yr
sources located 10 to 15 km: ignore those < 200 tons/yr
sources located 15 to 20 km: ignore those < 300 tons/yr
sources located 20 to 25 km: ignore those < 400 tons/yr
sources located 25 to 30 km: ignore those < 500 tons/yr

This list is being submitted for verification of accuracy and completeness. Please identify which sources are increment consuming and which are not. Also, please advise if any listed sources may be omitted from modeling and/or if any sources need to be added. Particularly, many of the smaller sources have an emission rate listed in tons/year but not pounds/hr. It is hereby being requested that the smaller sources be omitted from the modeling,

Letter to Mr. Cleve Holiday
August 17, 1993
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due to their very low emission rate (< 1 ton/yr). Their cumulative emissions are insignificant compared to that of the major sources. If they are required to be modeled, guidance is being sought on how many hours/year are to be assumed to determine an emission rate in pounds/hour.

An additional analysis will be performed to determine impacts on the Chassahowitzka National Wildlife Refuge. The significance levels for this area are 0.48 ug/m^3 , 0.07 ug/m^3 , and 0.025 ug/m^3 for the 3-hr, 24-hr, and annual averaging periods, respectively. Discrete receptors will be placed on a line from Gulf Coast to the closest boundary of the refuge indicating the concentration trend along the line and the concentration at the boundary of the refuge. The distance from Gulf Coast to the refuge is approximately 75 km, exceeding the accepted limit of the ISC models of 50 km. Please advise if a different modeling method should be utilized.

We would appreciate an expeditious review of this protocol due to the time commitments Gulf Coast has with the FDER permitting section. If you have any questions or require any additional information please contact me at (404) 395-0464.

Sincerely,

LAKE ENGINEERING, INC.



Larry G. Carlson
Air Pollution Compliance Specialist

LGC:omj
Enclosures

cc: Joyce Morales-Caramella, GCR

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