Department of Environmental Protection

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David B. Struhs
Secretary

February 22, 2002

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Carlos E. Aguero, President
Gulf Coast Recycling, Inc.
1901 North 66th Street
Tampa, FL 33619

Re: **Request for Additional Information**
Project No. 0570057-012-AC (PSD-FL-326)
Production Capacity Expansion

Dear Mr. Aguero:

On January 24, 2002, the Department received your application and sufficient fee for an air construction permit to increase the production capacity at the existing secondary lead processing plant. The application is incomplete. In order to continue processing your application, the Department will need the additional information requested below. Should your response to any of the below items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

The Department notes the extent of detailed information requested. However, this facility is the primary source of lead emissions in an area that was once designated by the state as "nonattainment" with regard to the ambient air quality standard for lead. Ambient monitoring data again shows a violation of this standard during the fourth quarter of 2000. The applicant is proposing to double the production rate of the facility and lead emissions will increase by more than four times the PSD significant emission rate. The Department believes this degree of detail is needed to understand the project, the emissions, potentially available equipment and controls, and the resulting project impacts.

Air Dispersion Modeling and Actual Ambient Monitoring Data

1. The modeling analysis presented in the application predicts a *maximum* quarterly average of 0.3 ug/m3 from all lead emitting sources near the project, which appears to be well below the ambient air quality standard of 1.5 ug/m^3 based on a quarterly average. However, the following table summarizes actual monitoring data for the 22 quarters since January of 1996 through June of 2001:

Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
1996	0.7	0.3	0.3	0.7
1997	0.6	0.4	0.4	0.6
1998	0.4	0.5	0.3	0.4
1999	0.4	0.4	0.4	1.0
2000	0.7	0.3	0.4	**2.0**
2001	1.3	0.3	ND	ND

From this data, the Department notes the following:

- All 22 of the quarterly averages were equal to or higher than the *predicted maximum* concentration;
- 8 quarterly averages were at least twice the *predicted maximum* concentration;
- 3 quarterly averages were more than three times the *predicted maximum* concentration;
- 2 quarterly averages were more than four times the *predicted maximum* concentration; and
- 1 quarterly average was more than six times the *predicted maximum* concentration and indicated a violation of the ambient air quality standard for lead.

Based on the actual monitoring data collected for this area, the Department does not believe that the modeling analysis accurately reflects the impact of lead emissions to the ambient air. One or more of the following may be the cause.

- Not all of the sources of lead emissions from Gulf Coast Recycling were included:
- Some sources of lead emissions from Gulf Coast Recycling were underestimated;
- Not all of the sources of lead emissions from other facilities in the vicinity of Gulf Coast Recycling were included;
- Some sources of lead emissions from other facilities in the vicinity of Gulf Coast Recycling were underestimated; and/or
- The model does not accurately predict emissions impacts from fugitive dust sources.

Please investigate and discuss the discrepancy between the modeling analysis and the actual monitoring data. Provide a thorough inventory of all of the lead emissions sources at the existing facility and for the proposed additional equipment and activities. Identify any other potential sources of lead emissions in the vicinity of the plant, including any sources of fugitive dust from contaminated soils. Identify other techniques for modeling fugitive dust sources that may be more appropriate for this specific site. The inventory must detail all sources of fugitive dust emissions at the facility. Please accurately quantify all emissions rates, provide references for the emissions rates, and list all assumptions used in calculating these emissions. Note that all assumptions should be conservative in nature for the purpose of estimating the *maximum* ambient impact. After approval of the revised emissions inventory, the Department will then require that a new ambient air quality modeling analysis be performed. [Rules 62-212.300 and 212.400, F.A.C.]

2. The ambient monitoring data indicates that the highest quarterly lead concentrations occur during the first and last quarters of the year, which are the wintertime months. Do special maintenance or other on site activities take place during these months? Do landscaping, construction, or other ground-disturbing activities occur during these months? Is the watering schedule for the plant grounds decreased during these months? Has the facility had problems with the watering system for the plant grounds? Were any other facilities in the vicinity of the plant performing unusual operations? For 1999 through 2001, please report the tons of lead produced for each month of operation. [Rules 62-212.300 and 212.400, F.A.C.]

3. The modeling analysis presented in the application assumes a background lead concentration of 0.0 ug/m^3. Based on the current ambient monitoring data, the Department does not believe this is an accurate assumption. Please review the ambient monitoring data collected from all nearby monitoring sites and recommend a revised background lead concentration for the Department's consideration. The following items should be reviewed:

   - Review and summarize the quarterly lead concentrations from each of the three ambient air lead monitors (1999 – 2001) located in the vicinity of the plant.
   - Based on data collected from the three ambient air lead monitors (1999 – 2001) located in the vicinity of the plant, calculate the ambient lead concentration for 15-day periods in which the lead smelting

activities were not in operation. {Ambient lead monitors sample once every six days, which provides approximately 15 days of monitoring data from each quarter. This approach would provide ambient levels that off-site receptors would record even if the smelting operation was shutdown or moved to another location.}

➢ Evaluate the existing ambient lead concentrations and model the impacts resulting from the lead emissions increases of the proposed project.

The Department will approve a revised background concentration for use in the revised modeling analysis.

[Rules 62-212.300 and 212.400, F.A.C.]

4. Page 26 of the PSD report indicates that, "All modeled concentrations are well below the NAAQS." Again, the Department does not believe the modeling analysis appropriately addresses the impact of lead emissions from the facility and/or other nearby sources. The Department's conclusion is based on actual lead monitoring data from the nearby monitor. In accordance with Rules 62-210.300(1) and 62-212.400(1), F.A.C., the applicant is reminded that, "*... the Department shall not permit the construction or modification of any emissions unit or facility that would cause or contribute to a violation of any ambient air quality standard.*" Based on the actual lead ambient monitoring data, the Department is concerned that any increase in lead emissions would have the potential to contribute to future violations of the ambient air quality standard for lead. Please discuss the actual ambient monitoring data with regard to operations of the battery recycling facility, areas of contaminated soil, other nearby facilities, etc. Please provide reasonable assurance that the proposed project will not interfere with the attainment and maintenance of the ambient air quality standard for lead.

5. In the modeling analysis for Gulf Coast Recycling, the land-use within 3 kilometers of the facility was classified rural. In the Soils and Vegetation Analysis, you state that the vicinity of the Gulf Coast Recycling facility can be described as urban. Which classification best describes the vicinity of the facility? If necessary, please revise the modeling analysis accordingly.

Compliance History

1. When was the facility originally constructed? When did the smelting operation begin? Please list and describe any enforcement actions relating to the air pollution permits and regulations that have occurred at this facility. The description should include the date, the alleged violation, the cause of the problem, and corrective actions taken. Are there any current ongoing enforcement actions or is the facility operating under any previous settlement agreements with regard to air pollution regulations? Please attach copies of all settlement agreements made to resolve enforcement actions. [Rule 62-4.070(5), F.A.C.]

2. Please identify all solid and hazardous waste permits held by this facility. Are any RCRA permits required for the transfer, treatment, storage, and/or disposal hazardous waste or materials? Please list and describe any enforcement actions relating to these permits. [Rule 62-4.070(5), F.A.C.]

Identification of All Plant Sources and Emissions

1. Emissions Sources and Points: Please re-inventory the facility and identify all sources of particulate matter and/or lead emissions including all process-related fugitives and fugitive dust emissions. Fugitive emissions will occur at each point that materials are crushed, shredded, scooped, handled, transferred, conveyed, dumped, and stored. At a minimum, the inventory must address the activities listed below and identify each point at which material is transferred, handled, processed, or stored that could generate particulate matter and/or lead emissions. For each emissions point identified, describe the measures used to prevent emissions and identify the effectiveness of each control measure. [Rule 62-212.400(5)(h), F.A.C.]

   a. *Battery Receiving and Breaking Area*: Please describe each general type of scrap lead material received. How are these materials handled, conveyed, and stored from the time of receipt until being

charged to the furnace? Is crushed scrap lead mechanically dried before being stored for charging to the furnace? If so, does the drying system combust fuel? If so, how much fuel? Discuss the feasibility and costs of completely enclosing the battery breaking and screening operation and venting to a particulate matter and acid gas scrubbing system. Discuss the feasibility and costs of completely enclosing the shredded scrap lead storage area and venting through particulate matter control equipment.

b. *Pre-Crusher*: Please include fugitives that would escape hooding. In crushing CRTs, what other contaminants may be present? Discuss the feasibility and costs of completely enclosing the pre-crusher area and venting to a particulate matter control device.

c. *Dross Handling/Storage*: Is the dross crushed or broken-up in some manner before being recharged to the furnace? Discuss the feasibility and costs of completely enclosing the dross storage area and venting to a particulate matter control device. What percentage of dross is re-charged to the blast furnace as opposed to sold? What are the uses for the purchased dross?

d. *Slag Storage Area*: Describe the measures used to prevent emissions and identify the effectiveness of all control measures. Is the slag crushed or broken-up in some manner before being recharged to the furnace? Discuss the feasibility and costs of completely enclosing the dross storage area and venting to a particulate matter control device.

e. *Other Materials*: Please identify all other raw materials brought into the facility, including: coke, other fuels, limestone, silica, other fluxing agents, etc. How are these materials received, stored, handled, conveyed and processed? What will be the maximum annual amount of each raw material used? What was the actual annual average of each raw material used for the representative two years? Discuss the feasibility and costs of completely enclosing each storage area and venting to a particulate matter control device.

f. *Sulfur Removal System*: Is this system completely enclosed? Are there any identifiable points of fugitive dust emissions?

g. *Skip Hoist*: Describe the transfer and loading of each raw material (coke, scrap lead, slag, silica, lead dusts, other fluxes, etc.) to the skip hoist.

h. *Refining Kettles/Casting Area*: Please include fugitives from the refining kettles that escape capture of the hooding, fugitives from the star ladle, fugitives from the lead molds during cooling and removal from molds, fugitives from the transfer of lead ingots to storage, fugitives from lead ingot storage, fugitives from the transfer of lead ingots to trucks, and fugitives from the transfer of dross to the furnace feed storage area. Discuss the feasibility and costs of completely enclosing this area and venting to a particulate matter control device.

i. *Dust Slurry System*: Please describe the dust slurry system, sources of dust, conveyance, and treatment. Describe the processing, handling, storage, and treatment of the "filter cake". Is this system completely enclosed? Are there any identifiable points of fugitive dust emissions?

j. *Blast Furnaces*: Include process emissions, fugitive emissions captured by hooding, and fugitive emissions that escape capture by hooding. Identify areas of hooding on the existing blast furnace that could be enhanced.

k. *Fugitive Dust Emissions - Plant Grounds*: Does the facility currently operate vehicle washes? If so, where are these located? What is the average lead concentration in the dust from the unpaved roads, paved roads, and parking areas? From the general grounds? What is the basis of this information? Please provide comprehensive supporting data. It may be necessary to perform sampling and analysis to accurately characterize the lead concentrations. Has Gulf Coast Recycling planned any remediation activities for soil on site or off site? Please explain. [Rule 62-212.400(5)(h), F.A.C.]

2. The process flow diagram provided in the application adequately describes the general *facility process flow*. However, additional detail is needed for each emissions unit to define the processes, emission points, controls, and monitoring. Please provide a separate process flow diagram for each defined emissions unit to include at least the following items: raw materials in, fuels in, processed materials out, wastes out, air pollution control equipment (APCE), process gases delivered to APCE, fugitive gases captured by hooding and delivered to APCE, fugitive gases escaping hooding and emitted as fugitives, transfer (conveyance) of material to next production process or storage area, and fugitive emissions from material transfer. The diagram should identify the quantities of materials input/output, and critical process parameters. For each gas stream, identify the temperature and flow rate. For each control device identify the critical parameters, the monitoring locations, the range of operation for each monitored parameter, inlet/outlet temperature, inlet/outlet flow rate, and pressure differential. [Application Form; DEP Form No. 62-210.900(1), Section III, Subsection J; and Rule 62-212.400(5)(h), F.A.C.]

Emissions Estimates

1. For each source of process and fugitive pollutant emissions identified above, please estimate the potential emission rates of each pollutant (lb/hour and ton per year) based on the maximum capacity. Show the equation for calculation, identify each emission factor, provide a reference for each emission factor, and provide supporting data for activity levels and any assumptions. Potential emissions must be based on the maximum emission rate (allowable emission limits, if applicable), the maximum capacity of the equipment, and any restrictions specifically requested by the applicant to synthetically limit the capacity.
2. For each source of process and fugitive pollutant emissions identified above, please estimate the past actual emission rates of each pollutant (lb/hour and ton per year). Show the equation used to calculate the emission rate, identify each emission factor, provide a reference for each emission factor, and provide supporting data for activity levels and any assumptions. The calculation of past actual emissions and future potential emissions should be consistent for purposes of comparison in the netting analysis requested.
3. Please identify all assumptions made in the calculations of fugitive dust emissions from all roadways and parking areas that are either paved or unpaved. Provide supporting documentation and references for all equations, activity levels, assumptions, and emission factors.
4. Please identify and quantify the acid gas emissions released during the battery breaking operation and CRT crushing.
5. Are any solvent-containing materials used? Does the scrap lead contain any chlorinated materials? Please estimate the emission rates of hydrochloric acid and VOC from these sources.

[Rule 62-212.400(5)(h), F.A.C.]

Equipment Specifications

1. Furnaces: Please provide manufacturer specification sheets and general drawings for the new blast furnace to include make and model, process gas emissions estimates (CO, lead, NOx, PM, SO_2, and VOC), fuel firing capacities, production capacities, operating temperatures, volumetric flow rates, and operating procedures (recommendations and prohibitions).
   a. Please summarize all stack test results for the existing furnace (CO, lead, NOx, PM, SO_2, and VOC). Have any tests been performed to determine uncontrolled emissions of CO, NOx or VOC? Based on actual CEMS data, identify the maximum and average SO_2 emission rates (lb/hour).
   b. Please provide startup and shutdown plans for each blast furnace that identify: the general startup/shutdown procedures for each blast furnace; the sequence of initiating each piece of control equipment; critical parameters for each control device; pollutants that may experience elevated levels during startup/shutdown; and procedures used to minimize the duration and quantity of excess

emissions during these periods. [Application Form, DEP Form No. 62-210.900(1), Section III, Subsection J]

c. Describe how and when the blast furnaces are cleaned. What is the frequency of cleaning? Are the tuyeres "punched" periodically to remove slag? How do these operations affect emissions? Estimate the particulate matter and lead emissions during cleaning and/or punching. [Rule 62-212.400(5)(h), F.A.C.]

d. Does the blast furnace area use "settlers" or other "lead pots" from which fumes are not captured? [Rule 62-212.400(5)(h), F.A.C.]

e. Were other furnace designs evaluated for this project, such as: reverberating furnace, rotary furnace, rotary kiln furnace, flash smelting furnace, electric furnace, or ISA smelt furnace? Available information suggests that these designs may have lower uncontrolled emissions, provide faster smelting, or offer potentially lower operating costs. Please discuss the suitability of these designs with respect to the proposed project. Please investigate and report on the "oxy-fuel technology" such as the oxy-fuel tilting rotary furnace offered by the following companies: Air Liquide America Corporation (Houston, TX), American Combustion Inc. (Norcross, GA), Air Products and Chemicals Inc. (Lehigh, PA), and Altek International (Exton, PA). Please investigate and report on the "flash smelting process" with application to the battery recycling operation that is offered by American Combustion Inc. (Norcross, GA) and Inco Limited. [Rule 62-212.400(6)(a), F.A.C.] [Rule 62-212.400(6)(a), F.A.C.]

f. The application identifies that NOx is an emissions limited pollutant from the blast furnaces. There is no pollutant detail page (Subsection G) for NOx emissions. Please submit the missing page. For both the new and existing blast furnace, what are the uncontrolled NOx emissions? Please provide supporting documentation.

g. Please discuss the feasibility and costs associated with completely enclosing the blast furnace area and venting to a particulate matter control device. Please discuss the feasibility and costs associated with completely enclosing only second blast furnace and venting to a particulate matter control device.

[Rule 62-212.400(5)(h), F.A.C.]

2. Kettles: Please identify the stack diameters, stack heights, temperatures, and flow rates of each kettle flue gas stack. Please explain the use of a $NOx/NaNO_3$ factor to estimate NOx emissions. What is the origin of this factor? How does this factor compare with NOx emissions tests? What is the accuracy? Have any recent NOx emissions tests been performed? [Rule 62-212.400(5)(h), F.A.C.]

3. Hooding: For each hood configuration, please identify the minimum face velocity, the expected capture efficiency, and the basis for the expected capture efficiency. Provide supporting design calculations. Do the hoods remain stationary or are they movable? Explain any periods during which the hoods are not in place or may not be as effective due to specific activities or problems. [Rule 62-212.400(5)(h), F.A.C.]

4. Fans: For each new and existing fan used to collect and transfer process gases or fugitive gases, please identify the following: location, equipment from which air flows are collected, fan hp, fan rpm, fan amperage, and volumetric flow rate. Is the fan located before or after pollution control equipment? Is the fan an induced draft fan or a forced draft fan? Does the fan have variable speed capabilities? [Rule 62-212.400(5)(h), F.A.C.]

5. Baghouses: For all new and existing baghouse equipment, please identify the following: manufacturer, model number, technical description (number of bags, bag geometry, bag material, cleaning mechanism, etc.), vendor specification data sheets, design process parameters used to select equipment (maximum volumetric flow rate, maximum design temperature, number of bags, design cloth area of bag, air-to-cloth ratio when not in cleaning mode, air-to-cloth ratio when in cleaning mode, operational pressure differential based on vendor data, maximum allowable pressure differential, expected maximum dust loading input,

expected maximum dust loading output, and manufacturer's guarantee of the emission rates requested in this application. In addition:

a. Does the vendor identify the equipment as appropriate for the collection of lead dusts? Please identify systems to protect bags from high temperature excursions, such as control equipment bypasses, cooling dilution air, or heat exchangers. For any equipment manufactured by the facility, please also provide the design specifications, drawings, and contact information of the design engineer.

b. For all baghouses, provide a technical description of the baghouse leak-detection system (triboelectric, light scattering, transmittance, etc.), a description of leak detection alarms (light alarm, sound alarm, etc.), and an operation and maintenance plan. The O & M plan should include a description of the bag cleaning mechanism, frequency of the cleaning cycle, determination of the cleaning cycle, normal operating range of baghouse pressure differential, maintenance inspections, frequency of inspections, monitoring and recording of baghouse pressure differential, a description of the replacement parts kept on site, and procedures for repairing or replacing broken bags on and off line.

c. The Air Pollution Engineering Manual recommends a *maximum* air-to-cloth ratio of 2 feet/minute for the control of lead smelting operations due to the particulate matter size and the toxicity of lead. The design air-to-cloth ratios for the existing and new equipment approaches 3 feet/minute in most cases when all bags are on line and exceeds 3 feet/minute when sections of bags are being cleaned. Please explain why recognized industry standards were not adhered to in the design and selection of this equipment. {Reference: Air Pollution Engineering Manual; 2nd Edition, 2000; Air & Waste Management Association; pages 634 – 645; see "Secondary Lead Smelting"}

d. Please provide all test summaries for all baghouses subject to NESHAP Subpart X. Please further explain the strategy to multiply actual tested emission rates by a factor of "2" to account for variability (December 1999 meeting). Please provide supporting information of the lead content in the particulate matter catch and explain how this was used to estimate emissions. Does the facility perform periodic EPA Method 12 tests to measure lead emissions? Please provide a summary of test results performed for each baghouse (lead and particulate matter).

[Rule 62-212.400(5)(h), F.A.C.]

6. Afterburner: For the afterburner, please provide the following: make, manufacturer, and model number; vendor specification data sheets; maximum heat input rate (MMBtu/hour); design temperature; design retention time; afterburner volume; calculation of retention time; CO/THC destruction efficiency based on vendor data; vendor guarantee at design temperature and retention time for various inlet concentrations; and details of the temperature monitoring system (minimum afterburner temperature set point, description of temperature control system, frequency of monitoring and recording, strip chart record or data logger, etc.). For any equipment manufactured by the facility, please also provide the design specifications, drawings, and contact information of the design engineer. In addition:

a. Afterburners are typically able to achieve control efficiencies of greater than 90%. The controlled emission rates of 400 lb/hour and 1752 tons per year appear to be very high. What is the design control efficiency of the proposed unit? What is the uncontrolled hourly CO emission rate? For PSD permits, it is not uncommon to require the installation of a CO CEMS. Please comment.

b. Will the proposed afterburner replace an existing afterburner? How will exhaust gases from the afterburner be cooled before being introduced to the baghouse?

c. During the site visit, the Department observed "puffing" from the access/clean-out ports in the existing afterburner's ductwork. This is likely caused by an increase in backpressure through the ductwork. Is this caused by typical operation of the blast furnace, charging to the blast furnace, a cleaning cycle of the baghouse, or some other reason? Please explain. How many of these ports are present from the

afterburner through the cooling loops prior to the baghouse? How are the ports sealed? If possible, please quantify the frequency and amount of these emissions? Can these ports be better sealed to prevent puffing? How can the design of the new afterburner improve this condition?

d. Please summarize all stack test results from the existing afterburner (CO, lead NOx, PM, SO_2, and VOC).

e. As currently designed, what is the total purchased equipment cost of this system? Provide at least two quotes from 3rd party equipment vendors. Please provide a cost effectiveness analysis in terms of annual cost per ton of pollutant removed for control efficiencies of 90%, and 95%, and 99%.

[Rule 62-212.400(5)(h), F.A.C.]

7. SO_2 Scrubber: For the SO_2 scrubbing system, please provide the following: the make, manufacturer, and model number; vendor specification data sheets and plans; description of the injection method; soda ash injection rates; method of adjusting the injection rate; approximate reaction time; critical parameters; and monitoring methods. What is the estimated control efficiency of this system as currently designed? What is the uncontrolled SO_2 emission rate for each furnace? For any equipment manufactured by the facility, please also provide the design specifications, drawings, and contact information of the design engineer. In addition:

   a. Please explain the previous project regarding the installation of the existing sulfur reduction system. Please explain the circumstances surrounding this project that resulted in current permit conditions, which included a cap on SO_2 emissions and an SO_2 compliance CEMS. Was equipment installed prior to obtaining an air construction permit? Was an after-the-fact permit for the equipment obtained to avoid PSD preconstruction review? Did this project increase the production capacity of the plant or "de-bottleneck" existing operations so the plant could achieve higher production capacities? Please provide a copy of the air construction permit, technical evaluations, correspondence, and supporting information regarding this project. It is the Department's understanding that additional equipment was installed without a permit, which resulted in potential PSD significant emissions increases. The sulfur recovery system was added to reduce SO_2 emissions and an after-the-fact permit was issued with the emission cap. If PSD preconstruction review was avoided in this manner, the Department considers the current project to be subject to PSD review for SO_2 emissions. Accordingly, please submit a BACT analysis, revised application and a modeling analysis for SO_2 emissions. In addition, see Rule 62-210.400(2)(d)5, F.A.C. - Relaxations of Restrictions on Pollutant Emitting Capacity.

   b. From a review of the files, it appears that the stack height of the existing blast furnace was raised in 1986/1987 to mitigate potential problems with ambient SO_2 concentrations. Because the characteristics of the exhaust gas stream (flow rates, velocities, SO_2 emission rate, temperature, etc.) will change, please provide an SO_2 modeling analysis that evaluates ambient impacts from the project. The Department believes that a full PSD modeling analysis will be necessary because it appears the project will be subject to PSD review for SO_2 emissions.

   c. As currently designed, what is the total purchased equipment cost of this system? Provide at least two quotes from 3rd party equipment vendors. Please provide a cost effectiveness analysis in terms of annual cost per ton of pollutant removed. Include revised costs and a cost effective analyses for control efficiency rates of 70%, 80%, 90% and 95%. In accordance with Rule 62-4.080, F.A.C. (Modification of Permit Conditions), the Department may require additional control if it can be shown that " ... an improvement in effluent or emission quality or quantity can be accomplished because of technological advances without unreasonable hardship."

   [Rule 62-212.400(5)(h), F.A.C.]

Netting Analysis [Rule 62-212.400, F.A.C.]

1. What will be the future maximum annual amount (tons) of scrap lead processed? What were the actual annual average amounts (tons) of scrap lead processed and refined lead produced for the representative two years?

2. Please provide all supporting calculations used to determine the information provided in Table A, which is used to summarize PSD applicability for this project. What activity levels were used to determine the past actual emissions (actual production rates, actual hours of operation, etc.)?

3. Provide a detailed explanation of the emissions netting analysis. Rule 62-212.400(2)(e), F.A.C. specifies the requirements for net emissions increase as well as contemporaneous and creditable emissions increase and decreases. Rule 62-212.200, F.A.C. defines potential emissions and actual emissions. Accordingly, define the contemporaneous period for the project, identify all projects within the contemporaneous period, identify all projects with emissions increases and/or decreases, quantify all emissions increases and decreases, identify any emission limits or operational restrictions taken to avoid PSD preconstruction review for previous projects within the contemporaneous period [Rule 62-210.400(2)(d)5, F.A.C.], and provide a detailed explanation of the requested emissions caps intended to avoid PSD preconstruction review for this project. Please provide copies of all air construction permits issued since 1995. Revise the netting analysis based on other changes including revised emission rates, new emissions points, additional project increases or decreases identified within the contemporaneous period, etc. The revised analysis should clearly identify the past actual emissions, the future potential emissions, and the net emissions change for each emissions source included in the netting analysis.

BACT Analyses [Rule 62-212.400, F.A.C.]

1. The application properly identifies the "top down" BACT procedure. However, the BACT analyses provided for CO and lead do not adequately identify all available controls and rank the effectiveness or provide a rationale for rejecting top controls (or stacking additional controls). For example, total enclosures were not evaluated for the control of fugitives. Similarly, it does not discuss and evaluate other furnace types.

   Please provide a top down BACT analyses for each pollutant subject to PSD review. The top available control technology should include any LAER determinations or control measures used to re-designate a lead nonattainment area to "unclassifiable". Top controls must be selected unless they are not technically feasible for this specific application or they are shown to have adverse energy, environmental, or economic impacts. For example, the application mentions that an oxidation catalyst was not evaluated due to catalyst fouling and poisoning. A description of the contaminants, expected concentrations, and documented affects on catalysts should be provided to support the claim. The Department believes the BACT analyses should include emissions of CO, lead, and SO_2 for the reasons explained previously. It also believes PM_{10} emissions will be subject to PSD preconstruction review because it does consider a PM10 emissions cap that would keep net PM_{10} emissions increases for the project just below 15 tons per year to be practicably enforceable. Depending on additional information, emissions of NOx and VOC may also be subject to PSD preconstruction review. All pollutants subject to PSD review would require an appropriate modeling analysis. In addition, the applicant is reminded that BACT is defined as an emissions limitation based on the *maximum degree of reduction* achievable through the application of production processes and available methods, systems and techniques.

2. From recent discussions, it is estimated that there are approximately 13 remaining secondary lead processors in the United States, owned by about 6 different companies. Through industry contacts and associations, please identify each existing facility and the types of control equipment and measures implemented to reduce lead emissions.

3. East Penn, a battery recycling plant in Pennsylvania, installed a complete enclose for the pretreatment area

(battery breaker) in order to confine fugitive lead emissions. Air exhausted from the enclosure is then filtered through a baghouse (or equivalent equipment) to control particulate matter and lead emissions. A wet scrubbing device was also installed to control acid gas emissions. In addition, the NESHAP Subpart X standards identify such enclosures as an optional method for confining and reducing fugitive emissions. Such structures are more effective in containing fugitives and are in place and effective at all times unlike watering or sweeping. Please provide a top-down BACT review that evaluates such an enclosure and control system. {Note: Permanent enclosures will necessitate adequate ventilation requirements and controls to comply with all applicable indoor air quality and worker safety requirements and regulations.} [Rule 62-212.400, F.A.C.]

4. In addition to the controlled enclosures for the pretreatment area, other battery recycling facilities have constructed controlled permanent total enclosures around furnace areas, refining areas, casting areas, raw material storage, intermediate product storage, final product storage, etc. The enclosures are ventilated with fresh air that is exhausted through additional baghouses or HEPA filters (and acid gas scrubbers where appropriate). The enclosures effectively minimize lead deposition to the surrounding plant grounds, which can be re-entrained by traffic, construction activities, or natural wind to off-site areas. Although the existing facility employs a system of watering to wet the plant grounds, parking areas, and roadways, the actual ambient monitoring data suggests that these "reactive" controls are insufficient. Please provide a top-down BACT review with such enclosures as the top control for any such components of the overall smelting operation. {Note: Permanent enclosures will necessitate adequate ventilation requirements and controls to comply with all applicable indoor air quality and worker safety requirements and regulations.} [Rule 62-212.400, F.A.C.]

5. Please review the document titled "Reference Document on Best Available Techniques in the Non Ferrous Metals Industries" that is posted under "Gulf Coast Recycling" on the Department's web site at: http://www.floridadep.org/air/permitting/construct.htm . Please include all applicable control equipment and techniques in the revised BACT analyses. {Reference: Reference Document on Best Available Techniques in the Non Ferrous Metals Industries; May 2000; Integrated Pollution Prevention and Control (IPPC); European IPPC Bureau; Technologies for Sustainable Development; Institute for Prospective Technological Studies (Seville); European Commission Directorate - General Joint Research Centre}

Impacts to Soils [Rule 62-212.400(5)(e), F.A.C.]

1. It is the Department's understanding that Gulf Coast Recycling performs routine sampling and analysis of the soils within the plant boundaries and outside the plant boundaries. Identify all of the contaminants for which the soil is sampled. Identify the contaminants with the highest concentrations. Please provide a summary of the lead concentrations for a variety of sampling locations evaluated since 2000. On a plot plan, identify the facility buildings, facility property boundaries, approximate ambient monitor locations, the railroad, other nearby facilities, residential areas, and the soil sampling locations and approximate lead concentrations.

2. The permit application indicates an increase in lead emissions of 2.0 tons per year. How will this impact soils in the vicinity of the facility? Please describe the impacts to humans, plants and animals, and the environment.

Miscellaneous

1. Please address the comments/questions from the Environmental Protection Commission of Hillsborough County (attached).

2. The Department will forward for a response any questions/comments received from EPA Region 4 or the National Park Service.

3. In Subsection A of Section II of the application (Facility Regulatory Classifications), the applicant notes

that control measures restrict lead compounds to below "10 tons per year". The Department notes that the major source threshold for lead is "5 tons per year". Please comment.

4. In Section III, Subsection G of the application, the abbreviation NTE is used under "allowable emissions. What does "NTE" mean?

5. In Subsection B of Section II of the application (Facility Pollutants), the applicant requests emissions caps for emissions of PM, SO_2, NOx, and VOC. Please explain how compliance with each requested cap will be demonstrated.

6. Please submit the following information required by Rule 62-212.400(5)(h), F.A.C.:

   "5. Information relating to the air quality impacts of, and the nature and extent of, all general commercial, residential, industrial and other growth which has occurred since August 7,1977, in the area the facility or modification would affect."

Professional Engineer Certification

Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. Note that the engineer's certification in the application [DEP Form No. 62-210.900(1)] includes the following statement, "... there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection ..." With respect to the lead ambient air quality standard, the area in which this facility is located was only recently re-designated from "nonattainment" to "unclassifiable". In the fourth quarter of 2000, the nearby ambient monitor recorded a violation of the standard for lead (1.5 ug/m^3 based on a quarterly average). Individual daily concentrations were recorded in excess of five times the numerical portion of this standard. The applicant proposes to add new equipment that will double the production capacity of this facility and result in a significant net increase of lead emissions. Based on your professional experience and knowledge, please explain how the applicant has provided reasonable assurance that the proposed project and additional emissions will not result in a violation of the ambient air quality standard for lead similar to that which occurred in 2000.

The Department will resume processing your application after receipt of the requested information. You are reminded that Rule 62-4.055(1), F.A.C. now requires applicants to respond to requests for information within 90 days or provide a written request for an additional period of time to submit the information. For any material changes to the application, please include a new certification statement by the authorized representative.

If you have any questions regarding this matter, please call me at 850/921-9536.

Sincerely,

Jeffery F. Koerner, P.E.
New Source Review Section

AAL/jfk

cc: Ms. Joyce Morales-Caramella, GCR
Mr. Billy R. Nichols, URS Corporation
Mr. Jerry Campbell, EPC of Hillsborough County
Mr. Gerry Kissel, SWD
Mr. Gregg Worley, EPA Region 4
Mr. John Bunyak, NPS

February 21, 2002

Mr. Jeff Koerner, P.E.
Florida Department of Environmental Protection
2600 Blair Stone Road
Twin Towers Office Building
Tallahassee, FL 32399

Re: Hillsborough County - AP
DEP File No.: 0570057-012-AC

Dear Mr. Koerner:

The staff of the Environmental Protection Commission of Hillsborough County (EPC) has completed their review of the above referenced Gulf Coast Recycling project. EPC staff would like to thank you for the opportunity to comment on this project. There are a few items we (EPC staff) are concerned about. The following comments are being submitted for your consideration:

1) EPC staff has reviewed both applications submitted by Gulf Coast Recycling concerning the addition of a soda ash silo, two additional refining kettles, and a second blast furnace (ARMS Project Nos.: 0570057-013-AC and 0570057-012-AC). EPC staff has forwarded a copy of the application for the addition of the soda ash silo to FDEP personnel for review. Please note the PM emissions from the soda ash silo will be based on a grain loading of 0.03 gr/dscf to correspond with a 5 percent visible emissions (opacity) standard. Additionally EPC staff has not approved or disapproved of the soda ash slurry injection system as appropriate control technology for the control of SO_2 emissions from the addition of a second blast furnace.

2) EPC staff has compared the average values of past emissions, based on the 1999 and 2000 AORs with the past emissions cited in Table A, PSD Significant Emissions Increase and Proposed Plant Wide Annual Emissions Rate, and have been unable to verify the information contained in Table A. The 1999 and 2000 AORs were used because the latest construction permit for the four refining kettles and the project currently under review are considered to be a single project, therefore the past actual emissions used for the purposes of PSD applicability should be the actual emissions prior to the construction of the four new refining kettles (Project No.: 0570057-010-AC, issued March 23, 2001). The following average values for past actual emissions have been calculated.

Pollutant	Average of 1999/2000 AORs (tpy)	Table A, PSD Application (tpy)
CO	735.3	940
NO_x	8.8 *	34.3
Pb	0.5	0.32
PM	2.6	3.6
SO_2	747.9	670
VOC	47.1	102

* NO_x was not reported in the 2000 AOR, therefore the 1999 AOR value alone has been used.

Please clarify the discrepancies between the emissions reported in the 1999/2000 AORs and those values provided in Table A of the PSD Application and submit a revised PSD analysis. Additionally, what actions (emissions increases and decreases) were included in the netting analysis?

3) On page 49 of the PSD Application: Charging and Tapping, box no. 6 lists the emission factor for PM as 0.005 gr/dscf, but the emissions calculations are based on 0.0044 gr/dscf. Based on the requested emissions factor of 0.005gr/dscf and the information provided, the PM emissions from this emissions unit are 3.4 tpy and 0.8 lbs/hr. Please clarify which emission factor GCR wishes to use.

4) On pages 25 and 51 of the PSD Application: Box no. 6 lists the emission factor for Pb as 0.00070 and 0.00065 gr/dscf respectively, and the emissions calculations are based on 0.00070 and 0.00065 gr/dscf respectively,

but the requested allowable grain loading listed is 0.00087 gr/dscf. The basis for the allowable emissions and potential emissions needs to be consistent. Please clarify which emission factor GCR wishes to use.

5) If the soda ash slurry system is approved, what is the expected range for the water flow rates and soda ash injection rate? What percent reduction of SO_2 does GCR expect from this system? What is the expected pressure drop across the system and how will the standard operating procedures for the baghouse be changed to accommodate the additional PM loading?

6) EPC staff has determined the net air to cloth ratio for the tapping and charging baghouse may not be sufficient. Typical baghouse air to cloth ratios listed for sources similar to GCR have lower air to cloth ratios.

The following comments are of a more general nature concerning the PSD Construction Permit Application.

7) Based on the conversation with DEP and GCR personnel during the meeting at GCR, February 20, 2002, please provide additional background information on the selection of a baghouse as specified in the PSD Construction Permit Application (bag type and air to cloth ratio) as BACT.

8) What is the cost associated with a catalytic incinerator versus an afterburner for the control of VOC and CO?

9) As discussed by Jeff Koerner in the meeting at GCR, February 20, 2002, an evaluation of the background concentration for lead in Hillsborough County needs to be performed to ensure some consistency with the actual values being registered by the air monitors located within the immediate vicinity of GCR. In addition, it has been noted that another secondary aluminum smelter (Scrap-All) exists which has been omitted form the modeling.

10) In the Modeling section of the PSD Construction Application, a reference is made to the flue gasses from the refining kettles being vented through four stacks and in another section states the flue gasses

are to be vented through six stacks. EPC staff has assumed the flue gasses will be vented through six stacks (one per kettle). Please verify this is correct.

11) As discussed by Jeff Koerner in the meeting at GCR, February 20, 2002, the evaluation of the impacts on the surrounding areas needs to include a summary of the cleanup efforts (past, present, and future efforts) for completeness.

12) Considering the age of the first NO_x emission factors for the addition of $NaNO_3$ in the refining operation, has any more current testing been performed? If so, please submit the such testing for review.

13) Although the air to cloth ratio for the baghouses have been given in the PSD Construction Permit Application, has an analysis been performed to verify the required face velocities can be maintained during each cleaning cycle of the baghouse(s)?

14) The requested SO_2 emission factor for the blast furnace has been reduced from the current limit of 76.6 lbs/ton of lead produced. Based on the CEM data for January 2002, some of the daily average SO_2 emissions have been substantially above 76.6 lbs/ton of lead produced. Will the soda ash slurry system be able to achieve the requested SO_2 emission limit on a daily average? What procedures does GCR have to ensure the requested SO_2 limit is not exceeded?

EPC staff wishes to thank you again for your consideration in this matter, if you have any questions, please feel free to contact Rob Kalch at (813) 272-5530.

Sincerely,

Alice H. Harman, P.E.
Chief, Air Permitting Section

cc: Carlos E. Agüero, Gulf Coast Recycling, Inc.
Billy R. Nichols, URS Corporation
Joyce Morales-Caramella, Gulf Coast Recycling, Inc.

rsk

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Mr. Carlos E. Aguero
President
Gulf Coast Recycling, Inc.
1901 North 66th Street
Tampa, FL 33619

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