TECHNICAL EVALUATION

&

PRELIMINARY DETERMINATION

APPLICANT

EnviroFocus Technologies, LLC
1901 North 66th Street
Tampa, Florida 33619

PROJECT

Lead-Acid Battery Recycling Facility
Reconstruction and Expansion Project - As Built Facility
Including Sulfur Dioxide Reallocation and Additional Building Ventilation

ARMS Facility ID No. 0570057

DEP File No. 0570057-027-AC (PSD-FL-404B)

COUNTY

Hillsborough County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Office of Permitting and Compliance
2600 Blair Stone Road, MS#5505
Tallahassee, Florida 32399-2400

(Addendum) November 28, 2012

1. GENERAL PROJECT INFORMATION

In August 13, 2008, EnviroFocus Technologies, LLC (EFT) submitted a PSD air construction permit application to the Florida Department of Environmental Protection (Department) for the reconstruction and expansion of their battery recycling facility in Tampa, Florida. The Department issued a PSD Construction Permit (Air Permit No. 0570057-020-AC, PSD-FL-404,) on October 22, 2009 authorizing the reconstruction project. EFT is currently in the process of reconstructing the facility as authorized by the PSD permit. The original permit package including the Technical Evaluation and Preliminary Determination (TEPD) document for this facilities' reconstruction project can be found at the following link:

http://www.dep.state.fl.us/air/emission/construction/hillsborough_county.htm

The original TEPD document provides a much more detailed description of the facility, its processes and details with regard to the original reconstruction project. On August 1, 2012, EFT submitted an air construction permit modification application to reflect the "As-Built" reconstructed facility. This TEPD document is an addendum to the original TEPD and reflects the "As-Built" configuration of the facility.

1.1. Facility Location

EFT operates a lead acid battery recycling facility, which is located in Hillsborough County at 1901 North 66th Street, Tampa, Florida. The UTM coordinates for the site are Zone 17, 364.0 kilometers (km) East and 3093.5 km North. The site is located 70 km south from the Chassahowitzka National Wildlife Area; the nearest Federal Prevention of Significant Deterioration (PSD) Class I Area.

EFT is a Primary Metal industries facility with a Standard Industrial Classification (SIC) Code No. 3341, secondary smelting & refining of nonferrous metals. According to the National Emission Standards for Hazardous Air Pollutants (NESHAP), Subpart X - Secondary Lead Smelting, a Secondary lead smelter means any facility at which lead-bearing scraps material, primarily, but not limited to, lead-acid batteries, is recycled into elemental lead or lead alloys by smelting.

In this review, the term "lead" will be used within the context of raw and intermediate materials as well as product. When emitted, lead is a hazardous air pollutant (HAP) and its chemical symbol (Pb) will be used in the context of air pollution control and measurement.

The location of EFT in the Tampa area is shown in Figure 1. An aerial view of the facility is shown in Figure 2 with its boundary delineated. The EFT property is bounded on the south side by the CSX railroad tracks oriented northeast to southwest. A large railroad switchyard operated by CSX is located further south and is a prominent feature visible in the photograph on the right hand side of Figure 2.

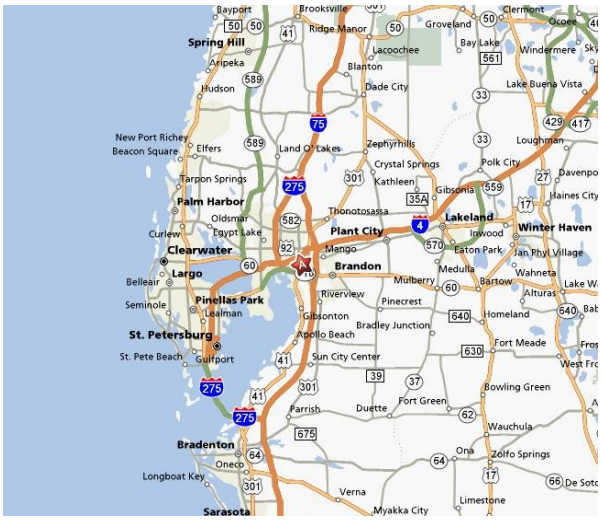

Figure 1 - EFT Facility Location in Tampa.

Figure 2 - Aerial View of the Facility & Environs.

1.2 General Process Description

The EFT facility recycles automotive and industrial lead-acid batteries, as well as other lead-acid bearing scrap materials to produce lead ingots. The process involves several key operations (or steps) including: receiving of batteries and recyclable materials; battery breaking and separation into lead, lead salts, plastic and acid electrolyte; storage and containment of recovered lead and lead waste; acid neutralization and wastewater treatment; lead smelting and refining; casting; and shipping. Figure 3 shows a greatly simplified diagram of the lead-acid battery recycling process with particular attention to the battery breaking and separation step. Figure 4 shows an artist rendition of the reconstructed facility which can be compared to the facility shown in Figure 2.

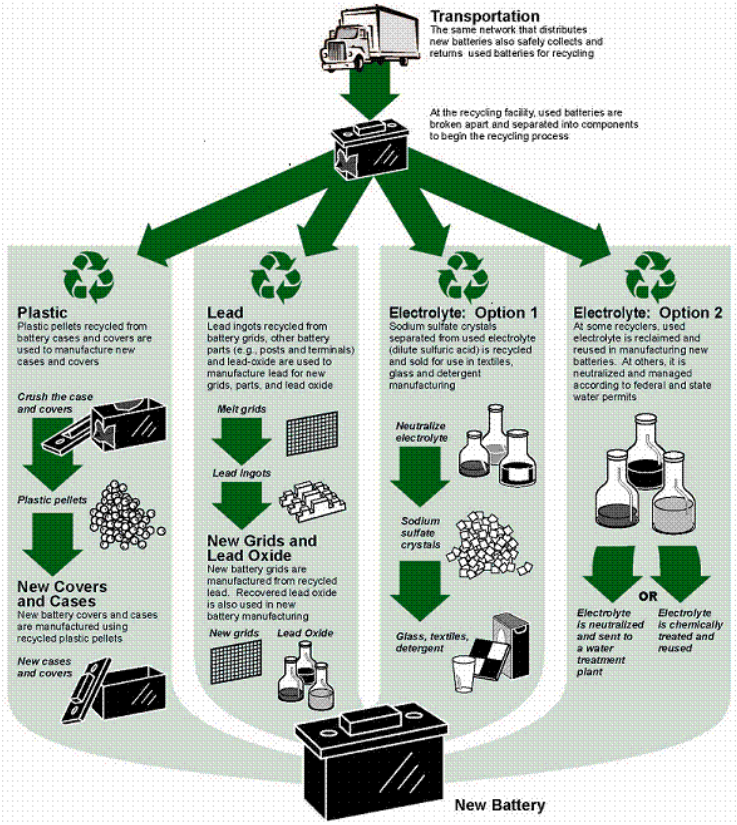

Figure 3 - Lead-Acid Battery Recycling Process.

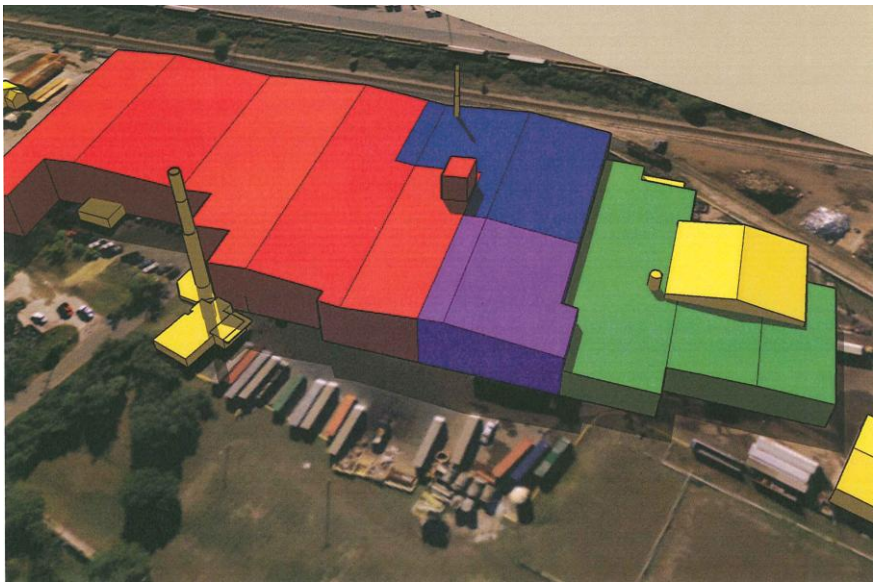

Figure 4 – Artist Rendition of Reconstructed Facility.

1.3 Emissions Units (EU) at the EFT Facility

The following table is a list of the emissions units (EU) at EFT facility after the reconstruction project. The emission unit numbers have been changed from those that were included in the original TEPD and air construction permit for the reconstruction and expansion project. The emission unit number changes were made to provide consistency with the Departments' Air Resource Monitoring System (ARMS) database. In addition, as a result of this permit modification reflecting the "As-Built" configuration of the facility, one new emission unit was created which is highlighted in the table.

Table 1. List and Descriptions of EU after the As-Built Reconstruction Project.

New EU ID No.	Description	Old EU ID No.
026	Battery breaking area including a 50 ton per hour (TPH) hammer mill, separation equipment, plastics plant, wet impingement scrubber and a new 130 ft stack.	021
027	Plastics plant pellet silos (4) for truck and train loading. Each silo will have a bin filter and a small stack. The plastics plant is vented via the building ventilation system.	24
028	Soda ash silos. (3) with bin filters and stacks.	008
029	Propane vaporizer (1) and soda ash slurry heaters (2).	025
030	Feed dryer fueled by natural gas (propane backup) to remove moisture from lead and lead salts prior to introduction into new reverb furnace. Includes an 18,000 acfm baghouse that will be vented through the combined process (blast and reverb furnace) stack.	022
031	Collocated reverb furnace. Direct emissions controlled by common afterburner, common wet SO_2 scrubber, common process baghouse and combined 130-ft process stack.	023
032	Collocated blast furnace. Direct emissions controlled by common afterburner, common wet SO_2 scrubber, common process baghouse and combined 130-ft process stack.	001
033	Furnace tapping, charging and lead refining. Process fugitive emissions from furnace tapping and charging and 10 refining kettles. Includes a 72,000 acfm process fugitive emissions (hygiene) baghouse and 130-ft stack.	011
034	Combustion gases from (10) natural gas burners with a total capacity of 40,000,000 Btu per hour (mmBtu/hr) providing heat to the refining kettles. Exhaust is vented to 10 small stacks.	013
035	Building ventilation of the totally enclosed lead recycling process to maintain the key operations at a lower than ambient pressure ensuring in-draft through any doorway opening. Includes a 195,000 actual cubic feet per minute (acfm) cartridge collector and 130 ft stack.	015
036	Facility grounds and roadways. Controlled by wet suppression, vacuum sweeping and wheel wash station.	009
037	Emergency generator rated at 500 kilowatts (kW).	026
038	Additional building ventilation new 160,000 acfm cartridge collector with secondary HEPA filter to increase the negative pressure within the building exhausting through a 90 ft stack	---

1.4 Project Description

EFT submitted a permit modification request to reflect the "As-Built" reconstructed and expanded facility. Specifically EFT has determined the need for two significant changes to the original PSD permit. The first change is a reallocation of some of the permitted sulfur dioxide (SO_2) emissions from the process stack which vents EU 030, 031 and 032 to the atmosphere and the hygiene stack which vents EU 033. No increases in overall emissions of SO_2 have been requested by the EFT. The second change is the addition of new baghouse capacity (Torit cartridge collector) to increase the ventilation of the process enclosure building. This additional air flow is needed to reduce the buildings' heat load and ensure compliance with the enclosure ventilation requirements of the NESHAP Subpart X. A link to this subpart is provided below:

NESHAP Subpart X

Additional details describing the proposed project and the regulatory implications are presented in subsequent subsections of this TEPD.

1.4.1 Sulfur Dioxide Reallocation

According to EFT, the PSD permit application submitted in 2008 proposed a plant-wide limit on SO_2 emissions in order to avoid PSD applicability for that pollutant. The major portion of the SO_2 emissions was attributed to the process stack, which exhausts the reverb furnace (EU ID No. 031), the blast furnace (EU ID No. 032) and the feed dryer (EU ID No. 030). A smaller portion was allotted to the hygiene stack (EU 033). The SO_2 emissions from the hygiene stack, which serves furnace tapping, furnace charging and lead refining, were estimated based on the SO_2 produced by the introduction of sulfur-containing materials into the refining kettles. The remaining allowable SO_2 emissions under the plant-wide PSD avoidance limit were allotted to the process stack, providing ample compliance margin for the SO_2 emissions from the furnaces using a reasonably well design scrubber.

However, it was noted by EFT during the reconstruction and expansion project that a small amount of SO_2 was escaping the direct furnace exhausts, which go to the process stack, and instead was captured by the tapping and charging hooding, which is routed to the hygiene stack. In order to account for this unanticipated distribution of SO_2 emissions, EFT is requesting that the PSD-avoidance limits on the process stack and hygiene stack be revised.

1.4.1.1 *Revised Hygiene Stack Emissions Estimate*

In the 2008 PSD air construction permit application, the uncontrolled SO_2 emissions from the reverb and blast furnaces were estimated based on an emission factor of 80 pounds of SO_2 per ton of lead produced. The maximum process rates of lead for the two furnaces are 40 ton/hr (reverb) and 7.5 ton/hr (blast). The desulfurization process employed at the facility reduces the potential SO_2 emissions by approximately 60 percent. Therefore, the maximum SO_2 produced in the furnaces and can be estimated as follows:

- ____ ____ ____ ____

EFT has determined, based on observations made at the facility, that as much as 2 percent of these SO_2 emissions may escape the direct evacuation of gases from the furnace and be captured by the fugitive (hygiene) hooding. Therefore, these additional SO_2 emissions that may be emitted from the hygiene stack are calculated as shown:

- ____ ____

The SO_2 from the sulfur-containing materials used in the refining kettles has already been estimated as 7.94 lb/hr and was included as an emission limit for the hygiene stack in the original PSD air construction permit. Therefore, EFT has requested that this limit be increased to the sum of these two values as shown below:

- ____ ____ ____

1.4.1.2 *Revised Process Stack Emissions Estimate*

In order to maintain compliance with the plant-wide PSD avoidance limit, EFT proposes to reduce the SO_2 emission limit for the process stack, which is currently 194.3 lb/hr, by the same amount that was added to the hygiene stack. Therefore, the new SO_2 limit for the process stack is calculated as follows:

- ____ ____ ____

EFT indicates that the SO_2 scrubber used for the furnace emissions is expected to be approximately 90 percent efficient resulting in an anticipated SO_2 emission rate of 152 lb/hr, so this reduced limit on the process stack provides ample margin (11.9 lb/hr) for compliance purposes.

1.4.2 Additional Process Building Ventilation

In addition to the SO_2 emissions reallocation, EFT has determined that additional ventilation capacity will be needed on the process building housing the furnaces in order to meet the enclosure requirements of the NESHAP Subpart X for Secondary Lead Smelting. The 2008 PSD air construction permit application proposed

the installation of a 195,000 actual cubic feet per minute (acfm) Torit cartridge collector (EU 035) to provide building ventilation. During reconstruction of the expansion project, it was determined that additional air flow is needed. EFT is proposing to install a new 160,000 acfm Torit cartridge collector to increase the negative pressure within the building. Additionally, to provide additional control of lead emissions, EFT will include a high efficiency particulate air (HEPA) filter downstream of the cartridge collector. The additional building ventilation is a new emission unit (EU 038), but in the "As-Built" air construction permit will be group with the previous building ventilation emission unit (EU 035). Emissions from EU 038 will consist of Pb and particulate matter (PM).

2. RULE APPLICABILITY

2.1 State Regulations

This project is subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The Florida Statutes authorize the Department of Environmental Protection to establish rules and regulations regarding air quality as part of the F.A.C. These state regulations are summarized below in Table 2.

Table 2 - Key Applicable State Regulations.

Chapter	Description
62-4	Permitting Requirements
62-204	Air Pollution Control (Includes Adoption of Federal Regulations)
62-210	Stationary Sources – General Requirements
62-212	Stationary Sources – Preconstruction Review (including PSD Requirements)
62-213	Operation Permits for Major Sources of Air Pollution
62-296	Stationary Sources – Emission Limiting Standards
62-297	Stationary Sources – Emissions Monitoring

2.2 Federal Regulations

The U.S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal regulations (40 CFR). Part 60 identifies NSPS for a variety of industrial activities. Part 61 specifies NESHAP based on specific pollutants. Part 63 specifies NESHAP provisions based on the Maximum Achievable Control Technology (MACT) for given source categories. Federal regulations are adopted in Rule 62-204.800, F.A.C. These federal regulations are summarized below in Table 3.

Table 3 - Key Applicable Federal Regulations.

Title 40	Description
Part 60	Standards of Performance for New Stationary Sources (NSPS)
Part 61	National Emission Standards for Hazardous Air Pollutants (NESHAP)
Part 63	National Emission Standards for Hazardous Air Pollutants for Source Categories (a.k.a. Maximum Achievable Control Technology (MACT))

3. PSD APPLICABILITY REVIEW

3.1 General PSD Applicability

The Department regulates major stationary sources in accordance with Florida's PSD program pursuant to Rule 62-212.400, F.A.C. PSD preconstruction review is required in areas that are currently in attainment with the state and federal Ambient Air Quality Standards (AAQS) or areas designated as "unclassifiable" for these regulated pollutants. As defined in Rule 62-210.200, F.A.C., a facility is considered a "major stationary source" if it emits or has the potential to emit 5 tons per year (TPY) of lead, 250 TPY or more of any PSD pollutant, or 100 TPY or more of any PSD pollutant and the facility belongs to one of the 28 listed PSD major facility

categories.

PSD pollutants include: carbon monoxide (CO); nitrogen oxides (NO_X); SO_2; PM; PM with a mean diameter of 10 microns or less (PM_{10}); PM with a mean diameter of 2.5 microns or less ($PM_{2.5}$); volatile organic compounds (VOC); Pb; Fluorides (F); sulfuric acid mist (SAM); hydrogen sulfide (H_2S); total reduced sulfur (TRS), including H_2S; reduced sulfur compounds, including H_2S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as SO_2 and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as nonmethane organic compounds (NMOC); and mercury (Hg).

As defined in Rule 62-210.200(189)(a)1, F.A.C., a "major stationary source" (major PSD source) is any of 28 listed stationary sources of air pollutants which emits, or has the potential to emit, 100 tons per year (TPY) or more of any PSD pollutant. Link to Rule 62-210, F.A.C. The major stationary source threshold for source categories not on the cited list is 250 TPY or more of any PSD pollutant. The EFT facility is one of the 28 listed PSD major facility categories, i.e., a secondary metal production plant (Code 22).

For major stationary sources, PSD applicability is based on emissions thresholds known as the significant emission rates (SER) as defined in Rule 62-210.200 (Definitions), F.A.C. Emissions of PSD pollutants from the project exceeding these SER are considered "significant" and BACT must be employed to minimize emissions of each PSD pollutant and an air quality impact analysis must be conducted for the PSD pollutants for which AAQS are defined. SER also means any emissions rate or any net emissions increase of a PSD pollutant associated with a major stationary source or major modification which would construct within 10 kilometers of a Class I area and have an impact on such area equal to or greater than 1 gram per cubic meter, 24-hour average.

Although a facility may be "major" for only one PSD pollutant, a project must include BACT controls for any PSD pollutant that exceeds the corresponding SER given in Table 4.

Table 4 - List of SER by PSD-Pollutant [1, 4]

Pollutant	SER (TPY)	Pollutant	SER (TPY)
CO	100	NO_X	40
PM/PM_{10} [2]	25/15	Ozone (VOC) [3]	40
Ozone (NO_X) [3]	40	SAM	7
SO_2	40	F	3
Pb	0.6	TRS	10
H_2S	10	Hg	0.1

1. Excluding those defined exclusively for MWC and MSW landfills.
2. $PM_{2.5}$ is also a PSD pollutant, but an SER has not yet been defined in the Department's rules. It is regulated by its precursors and surrogates (e.g. PM/PM_{10} NH_3, SO_2 and NO_X).
3. Ozone (O_3) is regulated by its precursors (VOC and NO_X).
4. There is a federal SER of 75,000 TPY for Greenhouse Gases (GHG) as carbon dioxide equivalent (CO_2e) that has not been incorporated into Department rules. However, the applicability to the CO_2 component of GHG emissions from bioenergy and biogenic stationary sources was recently deferred by EPA until the second half of 2014. Refer to: Link to Final CO_2 PSD Deferral .

In addition, applicants must provide an Air Quality Analysis that evaluates the predicted air quality impacts resulting from the project for each PSD pollutant.

3.2 Applicants' PSD Determination and Air Dispersion Modeling for the "As-Built" Project

In the original reconstruction project, PSD was triggered for NO_X and $PM/PM_{10}/PM_{2.5}$. PSD was not triggered for any of the other PSD pollutants described above including Pb. The new emissions unit (EU 038) at the facility will only emit $PM/PM_{10}/PM_{2.5}$ and Pb. Consequently, EFT only provided emission estimates for these two pollutants. Also air dispersion modeling was only provided by EFT for PM_{10} and Pb to update the modeling submitted for the pervious project to shown that no National Ambient Air Quality Standards (NAAQS) were violated as a result of this "As-Built" air construction permit with the new emission unit. Both the emission increases and air dispersion modeling are discussed further below.

3.2.1 Emission Increases

According to EFT, for the "As-Built" project, the BACT emission limit for building ventilation was determined to be 0.005 grains per dry standard cubic foot (gr/dscf) for PM emissions with emissions controlled by a Torit cartridge filter and EEPA filter. A PSD avoidance limit of 0.05 milligrams per dry standard cubic meter (mg/dscm) or 0.000022 gr/dscf was set for Pb emissions with the same control technology.

EFT proposes to maintain the PSD limit as BACT for $PM/PM_{10}/PM_{2.5}$ for the additional air flow of the new Torit cartridge collector/HEPA filter (EU 038). The $PM/PM_{10}/PM_{2.5}$ emissions can therefore be estimated as follows:

- [illegible]

The Pb emissions can be determined in a similar fashion using the pervious permit limit that avoids PSD for this pollutant:

- [illegible]

The above emissions equate to 30 tons per year (TPY) of $PM/PM_{10}/PM_{2.5}$ and 0.13 TPY of Pb. Even with the additional 0.13 TPY of Pb for the "As-Built' project, the PSD SER for lead of 0.6 TPY is still not exceeded at the reconstructed and expanded facility.

3.2.2 Air Dispersion Modeling Considerations

The 2008 PSD air construction permit application included modeling of PM_{10} and Pb emissions in order to demonstrate compliance with the NAAQS. As indicated above, because the new Torit cartridge collector/HEPA filter (EU 038) will emit PM and lead, the modeling that was submitted with the 2008 PSD permit application has been revised for the "As-Built" reconstruction and expansion project. The revised modeling is described in detail in **Section 5** of this TEPD.

4. DEPARTMENTS BACT REVIEW

4.1 $PM/PM_{10}/PM_{2.5}$ BACT Determination (EU 038)

A summary of the original BACT proposal for $PM/PM_{10}/PM_{2.5}$ submitted by EFT for the building ventilation emission unit (EU 035) is presented in Table 5. These emission limits were also proposed by EFT for the new Torit cartridge collector/HEPA filter (EU 038) used to added additional building ventilation. In the original proposal regarding Pb, the emission limits for all emission units were such that the project did not trigger PSD for that pollutant. Based on the Pb emission limit proposed for the new Torit cartridge collector/HEPA filter, PSD will still not be triggered for Pb.

Table 5 - Applicant BACT proposal for $PM/PM_{10}/PM_{2.5}$ and Proposed Pb Limits (Torit cartridge collector/HEPA filter).

Stack	Also Includes	$PM/PM_{10}/PM_{2.5}$ (gr/dscf)	Pb (mg/dscm)	Controls
Building total enclosure (building ventilation stack)	fugitive emissions all building areas	0.005	0.05	Torit Filters

The proposed value for PM is less than 25% of the 40 CFR 60, NSPS Subpart L - Standards of Performance for Secondary Lead Smelters limit of 0.022 gr/dscf. The following is a link to Subpart L: Link to NSPS Subpart L

NESHAP Subpart X - National Emission Standards for Hazardous Air Pollutants from Secondary Lead Smelting stipulates that:

"(a) You must operate the process fugitive emissions sources and fugitive dust sources listed in paragraphs (a)(1) through (9) of this section in a total enclosure that is maintained at negative pressure at all times and vented to a control device designed to capture lead particulate. The total enclosure must meet the requirements specified in paragraph (c) of this section"

(1) Smelting furnaces.

(2) Smelting furnace charging areas.

(3) Lead taps, slag taps, and molds during tapping.

(4) Battery breakers.

(5) Refining kettles, casting areas.

(6) Dryers.

(7) Agglomerating furnaces and agglomerating furnace product taps.

(8) Material handling areas for any lead bearing materials except those listed in paragraph (b) of this section.

(9) Areas where dust from fabric filters, sweepings or used fabric filters are processed.

(b) Total enclosures are not required in the following areas: lead ingot product handling areas, stormwater and wastewater treatment areas, intact battery storage areas, areas where lead bearing material is stored in closed containers or enclosed mechanical conveyors, and areas where clean battery casing material is handled.

(c) You must construct and operate total enclosures for the sources listed in paragraph (a) of this section as specified in paragraphs (c)(1) and (2) of this section. The total enclosure must be free of significant cracks, gaps, corrosion or other deterioration that could cause lead bearing material to be released from the primary barrier. Measures must be in place to prevent the tracking of lead bearing material out of the unit by personnel or by equipment used in handling the material. An area must be designated to decontaminate equipment and any rinsate must be collected and properly managed.

(1) You must ventilate the total enclosure continuously to ensure negative pressure values of at least 0.013 mm of mercury (0.007 inches of water).

(2) You must maintain an inward flow of air through all natural draft openings.

(d) You must inspect enclosures and facility structures that contain any lead-bearing materials at least once per month. You must repair any gaps, breaks, separations, leak points or other possible routes for emissions of lead to the atmosphere within one week of identification unless you obtain approval for an extension from the Administrator before the repair period is exceeded.

The primary reason that the new Torit cartridge collector/HEPA filter is being installed is to enhance the process building ventilation to come into compliance with the Subpart X language cited above. The "As-Built" enhanced total building enclosure increases the capture efficiency and pulls in a greater volume of air that contains PM and Pb that would otherwise leave the building as fugitive emissions. The overall level of control is beyond what is practiced at any secondary lead smelter and insures that, unlike the historical operation, fugitive emissions are kept to an absolute minimum. The total enclosure part of the proposal is the linchpin in the strategy to control Pb emissions and ambient concentrations.

The proposal by EFT for $PM/PM_{10}/PM_{2.5}$ is more stringent than any BACT determinations for lead smelting facilities given in the RACT/BACT/LAER Clearinghouse (RBLC), including the Gopher Resource Corporation (GRC) facility in Egan, Minnesota, which is the sister facility of the EFT Tampa facility. In addition, a Torit cartridge collection in combination with a HEPA filter can be considered the top level control technology for this type of process which in and of itself constitutes BACT. Finally, the emission estimates provided by EFT with regard to EU 038 are very conservative assuming a worst case scenario. This is because the emissions of $PM/PM_{10}/PM_{2.5}$ and Pb from EU 038 would have constituted fugitive emissions without any type of control prior to the installation of the Torit cartridge collector/HEPA filter. In fact, the installation of the control device which constitutes a new emission point will in all likelihood reduce emission of $PM/PM_{10}/PM_{2.5}$ and Pb. Thus it is the Departments' view that net emissions of $PM/PM_{10}/PM_{2.5}$ and Pb at the EFT Tampa facility will not increase.

For the reasons cited in the preceding paragraph, the Department accepts the proposal by EFT as BACT for $PM/PM_{10}/PM_{2.5}$. The Department further states that the Pb emission limit proposal by EFT represents the state-of-the-art for secondary lead recycling facilities and is acceptable.

5. AIR QUALITY IMPACT ANALYSIS

5.1. Introduction

The initial ambient air impact was conducted and approved in 2009, and can be found on pages 23 to 37 of the Technical Evaluation located at the link given in **Section 1** of this document.:

However, the modeling analysis was revised for lead and PM_{10} to include a new baghouse and emission point (stack). For these pollutants the applicant must provide a demonstration using approved air quality models that project emissions will not cause or contribute to a violation of an ambient air quality standard (AAQS) or PSD increment for the pollutants where they apply. Both of these pollutants have defined national and state AAQS. In addition, significant impact levels (SIL) and are defined for these pollutants and are used to determine the scope of the modeling analysis and the need for additional ambient air monitoring data.

5.2. Major Stationary Sources near the As-Built Facility

To provide some perspective on the relative scale of the proposed project modification, Tables 6 and 7 list the largest stationary sources, by pollutant (PM_{10} and Pb), in and around Hillsborough County. The maximum expected future emissions in TPY from the proposed project are also shown for comparison.

Table 6 - Largest Sources of PM_{10} (2011) Nearest to the As-Built Facility (TPY).

Owner/Company Name	Site Name	County	Emission
TECO	Big Bend Station	Hillsborough	786
FP&L	Manatee Power Plant	Manatee	215
C.D. McIntosh,Jr	Lakeland Electric	Polk	186
TECO	Bayside Power Station	Hillsborough	170
Mosaic Fertilizer	New Whales Faciltiy	Polk	142
Progress Energy	Anclote Power Plant	Pasco	91
Congra Foods	Congra	Hillsborough	81
Progress Energy	Hines Energy Complex	Polk	80
CF Industries	Plant City	Hillsborough	64
EnviroFocus	**EnviroFocus**	**Hillsborough**	**6.6**

Table 7 - Largest Sources of Lead (2011) Nearest to the As-Built Facility (TPY).

Owner/Company Name	Site Name	County	Emissions
EnviroFocus	**EnviroFocus**	**Hillsborough**	**0.18**
Tampa Steel Erecting Company	Tampa Steel Erecting Company	Hillsborough	0.18
C.D. McIntosh,Jr	Lakeland Electric	Polk	0.13
Peace River Citrus Products	Peace River Citrus Products	Desoto	0.13
FP&L	Manatee Power Plant	Manatee	0.02
Progress Energy	Anclote Power Plant	Pasco	0.02
Johnson Controls Battery Group	Johnson Controls Battery Group	Hillsborough	0.014
TECO	Polk Power Station	Polk	0.014

To further illustrate the major emission sources nearest to this proposed project, refer to Figure 5. All facilities that were used in cumulative modeling are shown.

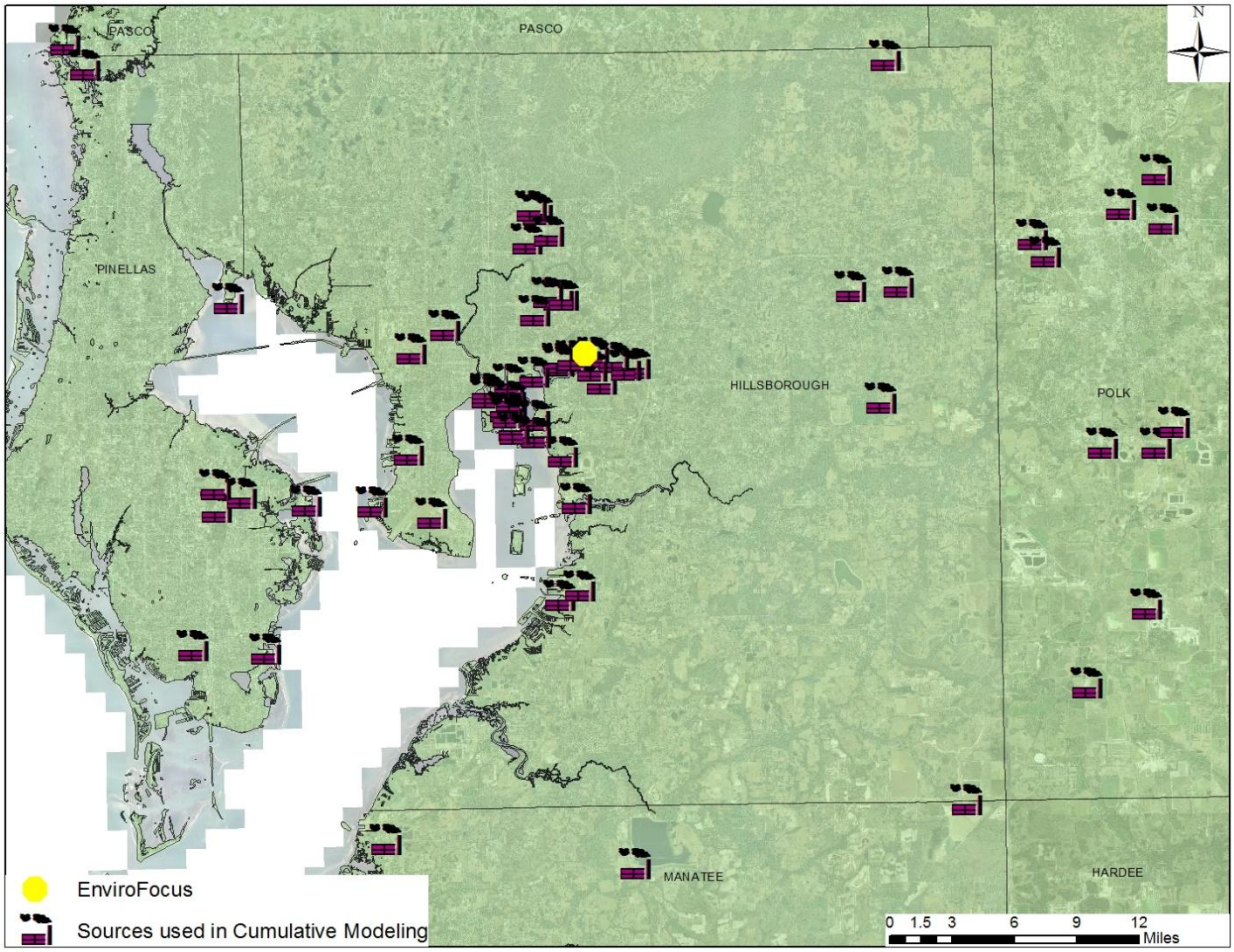

Figure 5 - Major Lead and PM_{10} Sources Nearest to EnviroFocus As-Built Facility.

5.3. Ambient Air Monitoring Surrounding As-Built Facility

The State ambient air monitoring network operated by the Department and its partners (local air pollution control programs) includes monitors in counties containing over 90% of the population. As Figure 6 and 7 indicate, the ambient air monitoring sites are concentrated in areas of high population density, along the coasts and near major highways in the interior portion of the state.

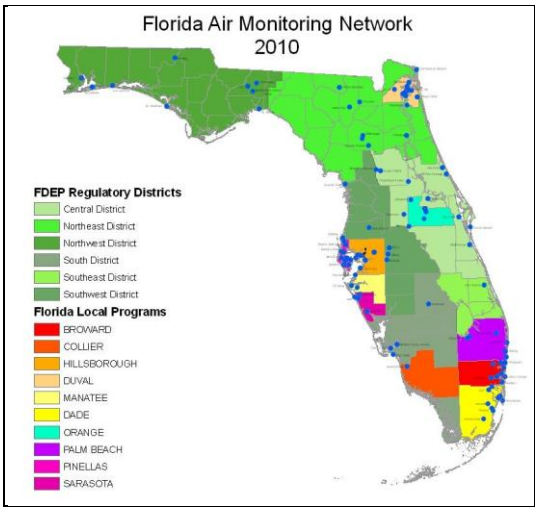

Figure 6 – Air Monitoring Network.

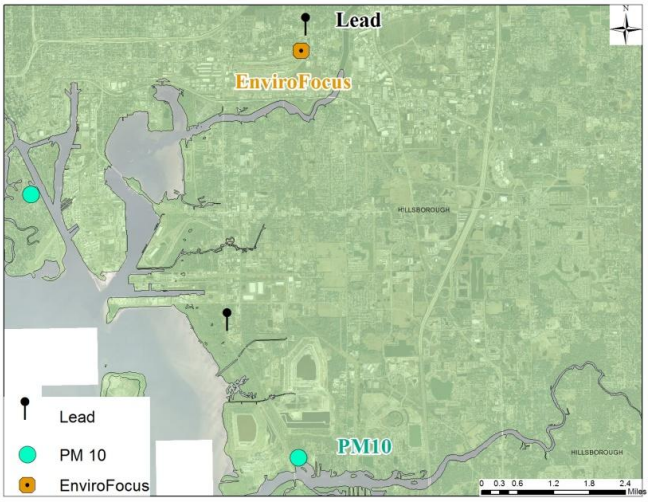

Figure 7 - Monitors Closest to As-Built Facility.

These monitors are used to estimate the existing air quality in the area of the proposed facility. The monitors chosen are most representative of the proposed site for due to their close proximity. Ambient monitor results are shown in micrograms per cubic meter ($\mu g/m^3$) in Table 8 below.

Table 8 - Ambient Air Quality Measurements Nearest to the As-Built Facility (2010-2012).

Pollutant	Location (Site Number)	Averaging Period	Ambient Concentration			
			Compliance Period	Value	Standard	Units
PM_{10}	Hillsborough Co (0570083)	24-hour [a]	2011	45	150	$\mu g/m^3$
		Annual [b]	2011	20.2	50	$\mu g/m^3$
Lead	Hillsborough Co (120570100)	Rolling 3-month [c]	2010-2012	0.016 [d]	0.15	$\mu g/m^3$

a. Not to be exceeded on more than an average of one day per year over a three-year period.
b. Arithmetic mean.
c. Not to be exceeded.
d. Data from June 2010 to March 2012. Due to the close proximity of the monitor to the EnviroFocus facility, the data was filtered to remove measurements during times in which the wind could transport pollutants from EnviroFocus to the monitor (specifically, when the wind direction blew from 175 – 180 degrees.) The highest 3-month rolling average calculated from the filtered dataset was used.

The ambient air measurements listed in Table 8 are values that do not contain 'exceptional events'. An 'exceptional event' is defined by EPA in accordance with 40 CFR 50.14 as an event that affects air quality, is not reasonably controlled or preventable, is an event caused by human activity that is unlikely to recur at a particular location or natural event. Such events include complex wildfires, driven by prolonged drought conditions and other large-scale meteorological patterns. The department has evaluated several $PM_{2.5}$ episodes and found that they occur in conjunction with certain meteorological conditions, combined with very high SO_2 emissions and sulfate deposition.

5.4. Air Quality Impact Analysis

5.4.1. Significant Impact Analysis

Significant Impact Levels (SIL) are defined for Lead and PM_{10}. A significant impact analysis is performed to determine if a project can cause an increase in ground level concentration greater than the SIL.

In order to conduct a significant impact analysis, the applicant has used the proposed project's maximum short-term emissions as inputs to the models. The highest predicted short-term concentrations and highest predicted annual averages predicted by this modeling are compared to the appropriate SIL for the PSD Class II Area.

If this modeling for a particular pollutant shows ground-level increases less than its SIL, the applicant is exempted from conducting any further modeling. If the modeled concentrations from the project exceed the SIL, then additional modeling including emissions from all major facilities or projects in the region (multi-source modeling) is required to determine the proposed project's impacts compared to the AAQS for those pollutants.

For the PM_{10} Class II analysis, a combination of fence line, near-field and far-field receptors were chosen for predicting maximum concentrations in the vicinity of the project. The fence line receptors consisted of discrete Cartesian receptors spaced at 50-meter intervals around the facility fence line. The remaining receptor grids consisted of densely spaced Cartesian receptors at 50 meters apart extending out to 0.5 km meters, and 100-meters apart extending out to 2.5 km. For the lead modeling, a Cartesian grid was used with a spacing of 50 meters out to 1.2 km. The grids extend just beyond the significant impact area (SIA) for both pollutants.

The results of the applicant's significant impact analysis are shown below in Table 9.

Table 9 - Maximum Predicted Air Quality Impacts from the As-Built Facility for Comparison to the PSD Class II SIL.

Pollutant	Averaging Time	Max Predicted Impact [a] ($\mu g/m^3$)	Significant Impact Level ($\mu g/m^3$)	Ambient Air Standards ($\mu g/m^3$)	Significant Impact?	Max Distance of Sig. Impact (km)
PM_{10}	24-Hour	37.5	5	150	Yes	2.4
	Annual	8.95	1	50	Yes	2.0
Lead	Rolling 3-Month	0.113	0.03	0.15	Yes	1.1

All averaging periods from each pollutant exceeded the SIL. Therefore, cumulative modeling of additional sources in the region is required to show that the proposed project modification will not cause or contribute a violation of the NAAQS.

5.4.2. Models, Emissions Data, and Meteorological Data Used in the AAQS and PSD Increments Analysis

The EPA-approved AERMOD modeling system was used to evaluate the pollutant emissions from the proposed project in the surrounding Class II Area. The AERMOD modeling system incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including the treatment of both surface and elevated sources, and both simple and complex terrain. AERMOD contains two input data processors, AERMET and AERMAP. AERMAP is the terrain processor and AERMET is the meteorological data processor.

A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options. Direction specific downwash parameters were used for all sources for which downwash was considered.

Emissions data used in the modeling analysis were obtained from the DEP ARMS database, DEP permit files, and recent PSD permit reviews. Emissions data for the new proposed facility derive from the proposed maximum permit limits imposed on the facility for each pollutant.

The AERMET meteorological data used for this analysis consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the Tampa International Airport (TPA), respectively. The 5-year period of meteorological data is from 2006 through 2010. The meteorological dataset was prepared by the department using the current versions of AERMET and AERMINUTE.

5.4.3. AAQS Analysis

For pollutants subject to an AAQS review, the total impact on ambient air quality is obtained by adding a "background" concentration to the maximum modeled concentration. This "background" concentration is based on existing monitoring data for each pollutant and representative of the area of the proposed source. This background is intended to account for sources of a particular pollutant that are not explicitly modeled. Since no attempt is typically made to subtract out the impacts due to the explicitly modeled sources on these monitored values, there is some amount of double-counting reflected in the total concentration (modeled + background) used to compare with the appropriate AAQS.

An evaluation of the emission inventories for background sources considered in the PSD application for EnviroFocus was performed to determine whether the method used to eliminate background sources from NAAQS compliance modeling demonstration was reasonable. All background sources within the significant impact area of the project were included in the modeling demonstration.

For facilities within 50 km of the SIA, the "20D" screening process was applied to exclude insignificant sources. In this process, regional sources whose potential emissions were less than 20 times the distance to the edge of the SIA were eliminated because they are presumed to have negligible contributions to receptors in the SIA. The "20D" screening technique was only used for PM10; all lead sources within 50 km of the SIA were included in the inventory.

The sources that are explicitly modeled include the subject facility and nearby sources that are judged to potentially have a significant interaction with the proposed facility. The appropriate calculations for the modeled and background values are different for each pollutant, but generally follow the form for compliance with the AAQS. Table 10 shows the results of this analysis. As shown in the below table, emissions from the As-Built Facility are not expected to cause or contribute to a violation of an AAQS.

Table 10- Ambient Air Quality Impacts.

Pollutant	Averaging Time	Major Sources Impact ($\mu g/m^3$)	Background Conc. ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	Total Impact Greater Than AAQS?	AAQS ($\mu g/m^3$)
PM_{10}	Annual	11 [a]	20	31	No	50
	24-hour	92 [a]	45	137	No	150
Pb	Rolling 3-month	0.115	0.016	0.13	No	0.15

a. High-second-high maximum concentration.

Based on the results of the air quality modeling analysis, the operation of the proposed facility modification will not cause or contribute to a violation of an ambient air quality standard or maximum allowable concentration increase (PSD increment).

6. CONCLUSION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution control regulations as conditioned by the Draft Permit.