Title V Air Operation Permit Renewal
Permit No. 0570057-025-AV

APPLICANT

The applicant for this project is EnviroFocus Technologies, LLC. The applicant's responsible official and mailing address are: John Tapper, Chief Operating Officer, EnviroFocus Technologies, LLC, 3385 South Hwy 149, Eagan, MN 55121.

FACILITY DESCRIPTION

The applicant operates the secondary lead smelting facility at EnviroFocus Technologies, which is located at 1901 N 66th Street in Tampa, Florida. The mailing address for the facility is 6505 Jewel Avenue, Tampa, Florida 33619.

EnviroFocus Technologies recycles spent automotive and industrial lead-acid batteries as well as lead scrap to produce lead ingots. Batteries arrive at the facility by truck and are off-loaded directly to the battery process area. The batteries first go through a shredder where most of the acid is drained. They then pass through a hammer mill that serves as the primary crusher. The crushed material then passes through counter current flotation and separation equipment that separates the metallic lead, plastic, rubber, and lead salts (or muds). The metallic lead and small amounts of plastic and rubber are all conveyed to the material charging storage area. The muds are slurried with soda ash to form lead carbonate and sodium sulfate that are separated in a filter process. The press cake is also sent to the material charging storage area. The M.A. 41DS Battery Recycling System is designed to reduce the sulfur content of the blast furnace feed stock and resulting sulfur dioxide (SO_2) emissions from the furnace.

Lead-bearing materials from the processed batteries are stored in piles in a partially enclosed structure. Lead-bearing materials for the blast furnace charge are taken from the older piles, and a single 36" x 72" oval Blast Furnace is used for producing molten lead from the various materials charged into the blast furnace. The blast furnace charge is approximately composed of 85% lead-bearing materials, 8-12% coke, 2.5% limerock, and 2.5% cast iron. Lead-bearing materials may include, but are not limited to, CRTs, re-run slag, and indigenous materials such as respirators, baghouse dust, and treatment plant sludge. Material is charged via a mechanical skip hoist with automatically opened charge doors at the top of the furnace. Blast furnace operations are limited by the amount of blast lead produced annually.

Lead and slag are both tapped and collected at the base of the furnace. Lead is tapped to form buttons, which are sold or transported to the refining area. Refined lead includes soft lead, hard lead, and calcium lead. Refining is accomplished in four 78 ton Refining Kettles, all indirectly fired with natural gas. Sodium nitrate and other chemicals are added to the refining process to aid in the removal of antimony, tin, and zinc from the lead. After the lead refining process is completed, the refined lead is cast into ingots by a pigging machine. The dross removed during the refining process is either returned to the blast furnace or sold. Facility personnel may purchase blast lead from other facilities to be processed in the refining operation and the blast lead produced on site may be sold without further processing.

Carbon monoxide (CO) and volatile organic compounds (VOC) emissions from the blast furnace are controlled by the use of a 10 MMBtu/hr afterburner. SO_2 emissions from the blast furnace are controlled by a sodium bicarbonate ($NaHCO_3$) dry scrubber system. The scrubber injection system utilizes a 25 HP 300 ACFM Tutill Model 4009-46L3-A1066 blower to pneumatically convey the dry sodium bicarbonate from a hopper system into the cooling loops upstream of the baghouse based upon readings from the SO_2 CEM. The dry sodium bicarbonate is delivered in supersacks, and manually fed into the hopper inside the Blast Furnace Building. Particulate Matter emissions from the hopper loading are controlled by the Torit dust collector, which controls the Blast Furnace Building Enclosure (see below).

Particulate matter (PM) and lead (Pb) emissions directly from the blast furnace are controlled by enclosures and a 34,000 acfm ten compartment baghouse fabricated by Gulf Coast Recycling, Inc., which was modeled after a

Wheelabrator-Frye Dustube Model 126, Series 55 baghouse. PM and Pb emissions from the blast furnace charging, tapping, and skiphoist loading are captured by hoods or enclosures and vented to an approximately 20,000 ACFM, three compartment baghouse (aka "hygiene" baghouse) similar in design to the previously mentioned baghouse.

A blast furnace enclosure is also present around the blast furnace area to help control unconfined PM and Pb emissions from the blast furnace. The blast furnace enclosure covers approximately 10,000 ft^2 and surrounds the blast furnace area with permanent walls and a roof. Several automated and manual doors are present around the enclosure to provide access to the refining area or outdoors, or to be used for maintenance activities. These doors typically remain closed. There is also a permanent opening between the blast furnace area and the material charging storage room to allow for frequent traffic between the rooms. A "horseshoe" type hood is located around the perimeter of the opening into which air is drawn to create a null air flow within the opening in order to prevent migration of fugitive emissions back and forth between the enclosures.

The blast furnace enclosure is maintained under a negative pressure and vented through a Torit Downflo Oval Cartridge dust collector (Model #DFO 4-96). The air drawn to the Torit dust collector comes from one duct drawing from the previously mentioned horseshoe vent, and a second duct located at the top of an inner shroud, similar to a chimney, that extends down from the roof to a height of approximately 15' above the floor and immediately around the blast furnace. Air is drawn from the building interior into the bottom of the shroud and pulled upward to the duct. The final exhaust is out a 130' stack. The rating on the Torit fan is 65,000 acfm; however, due to a lower than anticipated static pressure in the blast furnace enclosure control system, the actual maximum airflow through the Torit exhaust stack is estimated at 95,000 acfm based on stack test results.

Particulate matter and lead emissions from the refining kettles are controlled by enclosures and a three-compartment 28,000 acfm baghouse equipped with a bag leak detection system along with continuous monitoring and recording of the pressure drop across each baghouse compartment. Fugitive emissions of particulate matter and lead from process and grounds are controlled through the use of water spray, reasonable precautions, and specific work practices. Note that all flow rates listed herein are estimates. The flow rates, along with the affected allowable emissions, were amended for the blast furnace and refining kettle baghouses as part of the last permit renewal following a review of the history of flow rates recorded during the annual compliance tests.

The facility is subject to PM and Pb RACT, NSPS requirements of 40 CFR 60 – Subpart L, and the MACT requirements of Subpart X of the NESHAP for Pb and VOC. EPC staff has determined that the monitoring and recordkeeping requirements of these regulations meet the requirements of periodic monitoring. The blast furnace is also subject to SO_2 and CO limits and the permittee is required to perform annual testing, maintain a SO_2 CEM, and maintain recordkeeping. Additionally, annual opacity testing, as well as daily Method 22 observations, are required to meet the requirements of periodic monitoring. The blast furnace is subject to CAM for CO and SO_2. The monitoring requirements from the MACT (Pb, VOC) and Pb RACT already satisfy the requirements of CAM for these pollutants. The facility shall comply with the requirements of the most recently approved CAM Plan (attached).

Also included in this permit are miscellaneous unregulated/insignificant emissions units and/or activities.

Based on the Title V Air Operation Permit Renewal application received August 4, 2011, this facility is not a major source of hazardous air pollutants (HAPs).

PROJECT DESCRIPTION

The purpose of this permitting project is to renew the existing Title V permit for the above referenced facility.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Initial Title V Air Operation Permit issued October 10, 2000
SOP for the Control of Fugitive Emissions (Revised August 2005 and July 2010)
Baghouse Standard Operation and Maintenance Procedures Manual (Revised August 2005 and August 2010)
Startup, Shutdown, and Malfunction Plan (Revised August 2005 and July 2010)

CAM Plan for the Blast Furnace (Revised August 2005 and July 2010)
Application for a Title V Air Operation Permit Renewal received April 13, 2005
Additional Information Request dated June 10, 2005
Additional Information Response received September 22, 2005
DRAFT Permit No. 0570057-016-AV
Comments on DRAFT permit received August 16, 2006
Revised DRAFT Permit No. 0570057-016-AV
FINAL Permit No. 0570057-016-AV
Application for a Title V Air Operation Permit Revision received September 25, 2009
Additional Information Request dated November 20, 2009
Additional Information Response received June 15, 2010
DRAFT Permit No. 0570057-022-AV
REVISED DRAFT Permit No. 0570057-022-AV
FINAL Permit No. 0570057-022-AV issued May 16, 2011
Application for a Title V Air Operation Permit Renewal received August 4, 2011
DRAFT/PROPOSED Permit No. 0570057-025-AV

PRIMARY REGULATORY REQUIREMENTS

Title III: The facility is not identified as a major source of hazardous air pollutants (HAP).

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C.).

PSD: The facility is a Prevention of Significant Deterioration (PSD)-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility does operate emission units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60; specifically, 40 CFR 60 Subpart L – Standards of Performance for Secondary Lead Smelters.

NESHAP: The facility does operate emission units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63; specifically, 40 CFR 63 Subpart X - National Emission Standards for Hazardous Air Pollutants from Secondary Lead Smelting.

CAIR: The facility is not subject to the Clean Air Interstate Rule (CAIR) set forth in Rule 62-296.470, F.A.C.

CAM: Compliance Assurance Monitoring (CAM) applies to Emission Unit 001 Blast Furnace Exhaust for CO and SO_2, since the post-control device emissions are greater than the major source threshold of 100 tons per year. CO from the blast furnace is controlled by an afterburner and SO_2 is controlled by a dry sodium bicarbonate scrubber. The facility is not subject to CAM for Pb and PM, since the NSPS and NESHAP regulations already satisfy the requirements of CAM for these pollutants.

PROJECT REVIEW

This Title V Permit renewal updated several portions of the permit summarized as follows:

1) The permit was reformatted using latest version of the Title V permit format. Appendix TV-5 was replaced with new Appendix TV, and Appendices RR and TR were added to document reporting and testing requirements.

2) The PM emission standard for the blast furnace enclosure (EU 015) was revised from 0.003 gr/dscf to 0.0027 gr/dscf to reflect the PSD-avoidance limit established in Permit No. 0570057-018-AC. This change was made due to a greater than expected airflow (95,000 ACFM) from the induced draft fan based on stack test data.

CONCLUSION

This project renews Title V Air Operation Permit No. 0570057-022-AV, which was issued on May 16, 2011. This Title V Air Operation Permit renewal is issued under the provisions of Chapter 403, Florida Statues (F.S.), and Chapters 62-4, 62-210 and 62-213, F.A.C.