Memorandum

Florida Department of Environmental Protection

TO: Trina L. Vielhauer, Chief
Bureau of Air Regulation

THROUGH: A. A. Linero, P.E., Administrator
Air Permitting South Section

FROM: Scott M. Sheplak, P.E.
Air Permitting South Section

DATE: December 17, 2007

SUBJECT: Draft Air Permit No. 0570008-055-AC
Mosaic Fertilizer, LLC - Riverview Facility
BART Project

Permitting Clock: Today is ARMS Day 87
ARMS Day 90 = 12/20

Attached for your review are the following items:

- Cover letter;
- Written Notice of Intent to Issue Permit;
- Public Notice of Intent to Issue Permit;
- Technical Evaluation & Preliminary Determination;
- Draft Permit with Appendices; and,
- P.E. Certification.

The Technical Evaluation & Preliminary Determination (TEPD) provides a detailed description of the project, rule applicability, emission limitations and air pollution control technologies & measures. An overview of the specific changes from BART compared to the existing emission limitations and air pollution control technology & measures is outlined in the TEPD.

In summary, this permit requires each SAP to demonstrate compliance with the SO_2 standards and limitations on a continuous basis using CEMS data on a 24-hour rolling average. The proposed BART determination establishes a new NOx emission limitation on each SAP with a NOx testing frequency of every 5 years. This BART requires the permittee to follow the best operational practices to minimize excess emissions during startup and shutdown as described in the most recent Title V permit application in addition to the startup practices to minimize emissions of SO_2 and SO_3 currently in effect as outlined in the "Memorandum of Understanding Regarding Best Operational Start-up Practices for Sulfuric Acid Plants."

This BART requires an O&M Plan for the wet scrubber used on the molten sulfur storage tanks. This BART also requires the permittee to check the condition of the covers on the three molten sulfur storage pits at least once per 8-hour shift.

I recommend your approval of the attached draft permit for this project.

Attachments

AAL/sms

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection
Division of Air Resource Management, Bureau of Air Regulation
Draft Air Construction Permit No. 0570008-055-AC
Mosaic Fertilizer, LLC, Riverview Facility
Hillsborough County, Florida

Applicant: The applicant for this project is Mosaic Fertilizer, LLC. The applicant's authorized representative and mailing address is: Mr. Alan Lulf, Plant Manager, Mosaic Fertilizer, LLC, Riverview Facility, 8813 U.S. Highway 41 South, Riverview, FL 33569.

Facility and Location: The applicant, Mosaic Fertilizer, LLC, operates the existing Riverview Facility, which is located in Hillsborough County at 8813 U.S. Highway 41 South, Riverview, Florida. The Riverview Facility is an existing phosphate fertilizer manufacturing complex.

Project: On February 2, 2007, Mosaic Fertilizer, LLC submitted an application to satisfy the requirements of Best Available Retrofit Technology (BART) in Rule 62-296.340, Florida Administrative Code (F.A.C.) for the existing Riverview Facility. The purpose of the BART regulation is to improve visibility in the Class I areas, which include six national parks and federal wildlife areas in and around Florida. The BART provisions apply to emissions units built between 1962 and 1977 at one of the 26 specified industrial categories that have the potential to emit more than 250 tons a year of visibility-impairing pollutants, which are defined as nitrogen oxides (NO_X), particulate matter ($PM_{10}/PM_{2.5}$), and sulfur dioxide (SO_2).

The BART regulation requires a control technology review to establish a BART standard, which is an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by a BART-eligible source. The emission limitation must be established, on a case-by case basis, taking into consideration the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology. In addition, an air dispersion modeling analysis is conducted to evaluate the visibility improvement.

The BART-eligible units at this facility include: the Nos. 7, 8 and 9 Sulfuric Acid Plants (SAPs); the three Molten Storage Tanks; and, the three Molten Storage Pits. The Department of Environmental Protection (Department) reviewed the application and makes a preliminary determination regarding the BART controls and emissions standards in the draft air construction permit.

The Department has determined the following air pollution controls, techniques & measures constitute BART for the eligible units at this facility: the use of the existing control technology employed by each SAP - the double absorption system with enhanced catalyst, and the acid mist demister pads; following the best operational practices to minimize excess emissions during startup and shutdown for each SAP as described in the most recent Title V permit application in addition to the startup practices to minimize emissions of SO_2 and sulfur trioxide (SO_3) currently in effect as outlined in the "Memorandum of Understanding Regarding Best Operational Start-up Practices for Sulfuric Acid Plants;" the use of an existing wet scrubber on the molten sulfur storage tanks; following an Operation & Maintenance (O&M) Plan for the wet scrubber; and, checking the condition of the covers on the three molten sulfur storage pits. No new air pollution control technology is required to be installed as part of this proposed BART determination. The draft air construction permit establishes BART standards based on these control methods.

The proposed BART determination changes the SO_2 emission limit averaging period of each SAP from a 24-hour block average to a 24-hour rolling average and requires a continuous compliance demonstration with the standards and limitations using a SO_2 continuous emissions monitoring system (CEMS). This determination establishes a new NOx emission limitation on each SAP. A NOx testing frequency of 5 years is specified for each SAP. No proposed changes are made to the existing visible emission (VE) limitation of each SAP. No

proposed changes from this determination are made to the existing emission limitations of the molten sulfur storage tanks and pits.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and F.A.C. Chapters 62-4, 62-210, and 62-212. The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation & Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above. In addition, electronic copies of these documents are available on the following web site: http://www.dep.state.fl.us/air/eproducts/apds/default.asp .

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of 30 days from the date of publication of the Public Notice. Written comments must be postmarked by the Permitting Authority by close of business (5:00 p.m.) on or before the end of this 30-day period. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S. must be filed within 14 days of publication of this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address and telephone number of the petitioner; the name address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial rights will be affected by the

agency determination; (c) A statement of when and how the petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Public Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available for this proceeding.

TECHNICAL EVALUATION

&

PRELIMINARY DETERMINATION

PROJECT

Draft Permit No. 0570008-055-AC
Best Available Retrofit Technology (BART)

Riverview Facility
Hillsborough, Florida

APPLICANT

Mosaic Fertilizer, LLC
8813 U.S. Highway 41 South
Riverview, FL 33569

PERMITTING AUTHORITY

Air Permitting South Section
Bureau of Air Regulation
Division of Air Resource Management
Florida Department of Environmental Protection

December 17, 2007

1. GENERAL PROJECT INFORMATION

Facility Description and Location

The applicant, Mosaic Fertilizer, LLC, operates an existing phosphate fertilizer manufacturer. This facility consists of several industrial processes that convert insoluble rock containing phosphorus ore into a soluble form suitable for agricultural use. The processes consist of a molten sulfur storage & handling system, one material handling system, three (3) sulfuric acid plants, one (1) phosphoric acid plant (two trains), two (2) diammonium phosphate (DAP) plants, two (2) monoammonium phosphate (MAP) plants, one auxiliary boiler, and two (2) animal feed plants.

The Standard Industrial Classification (SIC) code for this type of facility is SIC No. 2874.

The facility is located about 7 miles south of Tampa at 8813 U.S. Highway 41 South, Riverview, Hillsborough County. The UTM coordinates are Zone 17, 362.9 km East and 3082.5 km North. Latitude: 27° 51' 28" North and Longitude: 82° 23' 15" West.

Regulatory Categories

This project is subject to the applicable environmental laws in Section 403 of the Florida Statutes (F.S.). The Florida Statutes authorize the Department of Environmental Protection (Department) to establish rules regarding air quality in the Florida Administrative Code (F.A.C.). The facility is classified according to the following major regulatory categories.

- The facility is a major source of hazardous air pollutants (HAPs) based on Title V Permit No. 0570008-045-AV.[1]
- The facility does not operate units currently subject to the acid rain provisions of the Clean Air Act (see Title V Permit No. 0570008-045-AV). The acid rain opt-in provisions of 40 CFR 74 for Process Sources are "Reserved."
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source pursuant to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality (see Title V Permit No. 0570008-045-AV).
- The facility operates BART-eligible units subject to Rule 62-296.340, F.A.C.

Project Description

Mosaic Fertilizer, LLC submitted an application to satisfy the requirements of Rule 62-296.340 (BART), F.A.C., which addresses the following BART-eligible emissions units.

EU ID No.	Brief Description
-022	No. 3 MAP Plant
-023	No. 4 MAP Plant
-024	South Cooler
-063	Molten Sulfur Storage and Handling System -- Storage Tank Nos. 1, 2 and 3
-066	Molten Sulfur Storage and Handling System -- Storage Pit No. 7
-067	Molten Sulfur Storage and Handling System -- Storage Pit No. 8
-068	Molten Sulfur Storage and Handling System -- Storage Pit No. 9

-004	No. 7 Sulfuric Acid Plant
-005	No. 8 Sulfuric Acid Plant
-006	No. 9 Sulfuric Acid Plant

Applicability Resolution

Several emission units had been identified as BART eligible units in the Department's rule making workshop materials under a draft list. The draft list of emission units was included in the March 1, 2007, additional information request. The emission units not included in the BART analysis performed by the applicant were specifically, Nos. 3 & 4 MAP Plant and South Cooler, (Emission Unit Identification number (EU ID No. -022, -023 & -024), Phosphoric Acid Production System (EU ID No. -073) and Phosphogypsum Stack I (EU ID No. -104).

According to the applicant, the Nos. 3 & 4 MAP Plant and South Cooler, (Emission Unit Identification number (EU ID No.) -022, -023 & -024) shutdown in September 2004. The applicant claims to have made a request to the Department's SWD Office to remove these units from the air operation permit, Title V Permit No. 0570008-045-AV. Final action has not yet been taken on this request. The status of these emissions units as being shutdown is reflected in this permitting action.

The Phosphoric Acid Production System (EU ID No. -073) and Phosphogypsum Stack I (EU ID No. -104) are not considered to be sources of NO_X, PM_{10}, or SO_2.[2] Fugitive PM emissions from sources greater than 50 km from a Class I area were not required to undergo a BART control evaluation.

These emission units are therefore not considered as part of this BART analysis for the reasons previously stated.

This Technical Evaluation & Preliminary Determination details the project, provides the top-down BART analysis, and identifies the preliminary BART determinations.

Processing Schedule

February 2, 2007	Department received the BART application (hard copy) for an air pollution construction permit.
March 1, 2007	Department requested additional information (RAI), sent electronically.
May 15, 2007	Department's extension of time in which to respond to RAI, sent electronically.
July 11, 2007	Department received additional information (hard copy) dated July 9.
August 10, 2007	Department requested additional information (RAI) dated August 9, sent electronically.
Sept. 13, 2007	Department received additional information (hard copy) dated Sept. 11.
Sept. 19 & 20, 2007	Department requested clarifying information via e-mail.
Sept. 20 & 21, 2007	Department received clarifying information via e-mail; application complete.

Relevant Documents

- Permits PSD-FL-209, 250 & 315.[3]
- Current Title V Air Operation Permit (Renewal) No. 0570008-045-AV.[4]

2. APPLICABLE BART REGULATIONS

Regulatory Authority

This project is subject to the applicable regulatory requirements in the following Chapters of the F.A.C.: 62-4 (Permitting Requirements); 62-204 (Ambient Air Quality Requirements, PSD Increments, and Federal Regulations Adopted by Reference); 62-210 (Permits Required, Public Notice, Reports, Stack Height Policy, Circumvention, Excess Emissions, and Forms); 62-212 (Preconstruction Review, PSD Review and BACT, and Non-attainment Area Review and LAER); 62-296 (Emission Limiting Standards); and 62-297 (Test Methods and Procedures, Continuous Monitoring Specifications, and Alternate Sampling Procedures). It is also subject to the applicable provisions in Title 40 of the Code of Federal Regulations (CFR) as adopted in Chapter 62-204 and 62-296, F.A.C.

Specifically, this project is subject to Rule 62-296.340 (BART), F.A.C. for determining and applying the Best Available Retrofit Technology for each BART-eligible source as defined in 40 CFR 51.301. The Department previously identified all BART-eligible sources through a series of notifications, workshops, and rule making efforts. The state rule implements the federal provisions of Appendix Y in 40 CFR Part 51, "Guidelines for BART Determinations Under the Regional Haze Rule".

Affected Pollutants

In accordance with Appendix Y in 40 CFR 51, the affected visibility-impairing pollutants include the following: nitrogen oxides (NO_X), particulate matter (PM_{10}), and sulfur dioxide (SO_2). Although ammoniated nitrates and sulfates are among the key species contributing to regional haze, BART does not directly address or require a review of ammonia (NH_3) as a visibility-impairing pollutant.

With respect to particulate emissions, Rule 62-210.200, F.A.C. defines PM as, "... all finely divided solid or liquid material, other than uncombined water, emitted to the atmosphere as measured by applicable reference methods, or an equivalent or alternative method ..." PM with an aerodynamic diameter less than or equal to a nominal 10 micrometers is defined as PM_{10} and PM with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers is defined as $PM_{2.5}$. Emissions of PM, PM_{10} and $PM_{2.5}$ are all regulated pollutants. For the existing emissions units and air pollution control equipment, the control strategy specified in the BART determinations directly reduces PM emissions, which serves as a surrogate to also reduce PM_{10} and $PM_{2.5}$ emissions.

EU ID No.	Brief Description
-063	Molten Sulfur Storage and Handling System -- Storage Tank Nos. 1, 2 and 3
-066	Molten Sulfur Storage and Handling System -- Storage Pit No. 7
-067	Molten Sulfur Storage and Handling System -- Storage Pit No. 8
-068	Molten Sulfur Storage and Handling System -- Storage Pit No. 9
-004	No. 7 Sulfuric Acid Plant
-005	No. 8 Sulfuric Acid Plant
-006	No. 9 Sulfuric Acid Plant

BART Definition

Pursuant to 40 CFR 51.301,

> *Best Available Retrofit Technology (BART)* means, "... an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by ... [a BART-eligible source]. The emission limitation must be

established, on a case-by case basis, taking into consideration the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology." In accordance with Rule 62-296.340(3), F.A.C., the Department shall determine BART for each affected source in an air construction permit.

BART Analysis Procedure

There are five basic steps in the case-by-case BART analysis:

Step 1. Identify all available retrofit control technologies. A comprehensive list of available technologies for analysis must be identified that includes the most stringent option and a reasonable set of available options. It is not necessary to list all permutations of available control levels that exist for a given technology. The list is complete if it includes the maximum level of control each technology is capable of achieving.

Step 2. Eliminate technically infeasible options. Control technologies are technically feasible if either (1) they have been installed and operated successfully for the type of source under review under similar conditions, or (2) the technology could be applied to the source under review. "Availability" and "applicability" are two key concepts in determining whether a technology could be applied. A technology is considered "available" if the source owner may obtain it through commercial channels, or it is otherwise available within the common sense meaning of the term. An available technology is "applicable" if it can reasonably be installed and operated on the source type under consideration. A technology that is available and applicable is technically feasible.

Step 3. Evaluate control effectiveness of remaining control technologies. There are two key issues in this process, including (1) expressing the degree of control in consistent terms to ensure an "apples-to-apples" comparison of emissions performance levels among options, and (2) giving appropriate treatment and consideration of control techniques that can operate over a wide range of emission performance levels.

Step 4. Evaluate the impacts and document the results. The evaluation will consider the costs of compliance, energy impacts, non-air quality environmental impacts, and remaining useful life.

Step 5. Evaluate visibility impacts. Use CALPUFF or other appropriate dispersion model to determine the visibility improvement expected at a Class I area from the potential BART control technology applied to the source. Note that if the most stringent BART control option available is selected, it is not necessary to conduct an air quality modeling analysis for the purpose of determining its visibility impacts.

BART Determination: In making a final BART determination, the following will be considered: (1) technically feasible options; (2) the average and incremental costs of each option; (3) the energy and non-air quality environmental impacts of each option; (4) the remaining useful life; and (5) the modeled visibility impacts. A justification for selecting a technology as the "best" level of control must be provided and include an explanation of these factors that led to the BART determination. When a BART determination is made for two regulated pollutants on the same source, if the result is two different BART technologies that do not work well together, it may be reasonable to substitute a different technology or combination of technologies.

Summary of Applicant's Initial Modeling Analysis

The Riverview BART analysis methodology was based on an air modeling protocol for all Mosaic Fertilizer facilities in Florida, revised January 2007. The modeling protocol was reviewed by the Department and is based on guidance from the VISTAS (Visibility Improvement State and Tribal Association of the Southeast) common modeling protocol, Version 3.2. Further, the Department determined the protocol to be the basis for the modeling methodologies used for the BART analyses for Mosaic Fertilizer facilities, including Riverview.

The BART-eligible emissions units for the Riverview facility are subject to the visibility impairment analysis as dictated by the modeling protocol. The analysis includes visibility impairment at all PSD Class I areas within 300 km of the Riverview facility. These Class I areas are the Chassahowitzka National Wildlife Refuge (CNWR), the Everglades National Park (ENP) and the St. Marks National Wildlife Refuge (SNWR). These Class I areas are 87, 239 and 291 kilometers (km) away from the Riverview facility respectively.

The CALPUFF model (Version 5.756) was used to predict the maximum visibility impairment. The Department provided the applicant with 4-km "CALPUFF-ready" CALMET meteorological data for the period 2001-2003. Class I receptor locations were obtained from the National Park Service (NPS) and a Lambert Conformal Conic (LCC) coordinate system was used. Modeling results are based on the 8th highest 24-hour average impairment value in one year, for 3 years.

The applicant performed initial modeling to determine if the Riverview facility contributes to visibility impairment. Modeled concentrations were then compared to the visibility impairment threshold of 0.5 deciviews (dv), based on the final BART federal regulation 70 FR 39118. A deciview is a standard visibility index. The Interagency Monitoring of Protected Visual Environments (IMPROVE) states that the deciview scale is linear to humanly-perceived changes in visual air quality. A dv near zero is considered a "pristine" atmosphere. Deciviews increase with visibility impairment. This initial analysis concluded that the Riverview facility contributes to visibility impairment at the CNWR only and therefore, all BART-eligible sources are subject to a BART determination analysis for the CNWR.

The BART- eligible sources (emissions units) for the Riverview facility are the Nos. 7, 8 and 9 Sulfuric Acid Plants (SAPs) and the Molten Storage Tanks and Molten Storage Pits. As indicated by the applicant, the visibility impacts from the molten storage tanks are more than 100 times lower than any of the SAPs. The maximum visibility impact from the molten storage tanks and pits are 0.002 dv and 0.003 dv respectively compared to an impact of 0.2 dv from each SAP. A complete reduction of the impact from the tanks and pits would not result in a significant improvement of visibility.

Mosaic Riverview – Existing Visibility Impacts at CNWA
Contribution of Visibility Impairing Particle Species Types

	Percent Contribution to 8th Highest Visibility Impacts (dv)											
	2001				2002				2003			
	Visibility	Contribution of [a]			Visibility	Contribution of [a]			Visibility	Contribution of [a]		
Emission Unit	Impact (dv)	SO_4 (%)	NO_3 (%)	PM_{10} (%)	Impact (dv)	SO_4 (%)	NO_3 (%)	PM_{10} (%)	Impact (dv)	SO_4 (%)	NO_3 (%)	PM_{10} (%)
SAP 7	0.184	100.0	0.0	0.0	0.223	99.6	0.4	0.0	0.214	99.8	0.2	0.0
SAP 8	0.152	100.0	0.0	0.0	0.185	99.8	0.2	0.0	0.187	99.8	0.2	0.0
SAP 9	0.189	100.0	0.0	0.0	0.228	99.7	0.3	0.0	0.222	99.8	0.2	0.0
Storage Tanks	0.001	75.1	0.0	24.9	0.001	75.5	0.0	24.5	0.002	86.1	0.0	13.9
Storage Pits	0.002	0.0	0.0	100.0	0.001	0.0	0.0	100.0	0.003	0.0	0.0	100.0

The SAPs contribute to visibility impairment primarily by emitting sulfate particles; therefore, the applicant provided a BART analysis for the SAPs regarding SO_2 only. Emission rates used in the BART modeling analysis were from continuous emissions monitoring system (CEMS) data for each SAP, Nos. 7, 8 and 9 and reflect the maximum actual concentrations during normal operation.

Based on the 24-hour visibility impairment values for 2001 to 2003, the 8th highest (98th percentile) were determined. The maximum pre-control predicted impacts are 0.206, 0.174 and 0.220 for SAPs No. 7, 8 and 9 respectively. The results are slightly higher, thus more conservative when comparing visibility improvement, in the table above. The table above shows results by the applicant's initial analysis which used allowable emission rates rather than actual emission rates. The modeling protocol indicates that the actual emission rates should be used if available; therefore the modeling results shown below in the BART Determination for SO_2 are based on actual emission rates.

The applicant assumed 90% control efficiency with an ammonia scrubber as a possible BART control technology. The reduced emission rates from 90% control efficiency provided visibility impacts of 0.065, 0.05 and 0.06 dv for SAPs Nos. 7, 8, 9 respectively.

3. BART ANALYSIS AND PRELIMINARY BART DETERMINATION FOR MOLTEN SULFUR STORAGE AND HANDLING SYSTEM -- STORAGE TANK NOS. 1, 2 & 3

This section provides the control technology review and BART determination for the following emissions units.

EU ID No.	Brief Description
-063	Molten Sulfur Storage and Handling System -- Storage Tank Nos. 1, 2 and 3

BART Analysis

The tanks are sources of sulfur particulate matter (PM/PM_{10}) and SO_2 emissions. The analysis for the control of SO_2 emissions from the tanks was subsumed in the control of PM/PM_{10} emissions. The tanks are not sources of NOx emissions as there is no combustion to produce NOx.

Applicant's PM/PM_{10} and SO_2 Control Technology Review

The applicant did not perform a technology review as part of the application.

Department's PM/PM_{10} and SO_2 Control Technology Review

Molten sulfur is unloaded from ships to any combination of the three molten sulfur storage tanks. These tanks then transfer molten sulfur to the storage pits located at the sulfuric acid plants and also to the molten sulfur truck loading station. PM_{10} in small quantities is emitted from the storage of molten sulfur in the tanks. A wet scrubber is currently used to control PM_{10} and SO_2 emissions from the molten sulfur storage tank nos. 1, 2 and 3 as well as the truck loading station. Controlled PM_{10} emissions are 0.03 grains/dscf {equivalent to approximately 0.28 pounds per hour (24-hour average) and 1.23 tons per year[5]}. Based on specific condition 4. from PSD-FL-315, SO_2 emissions from the tanks are estimated to be 8.85 tons per year.

Step 1. Identify all available retrofit control technologies.

Typical PM/PM_{10} air pollution control technologies are mechanical and cyclonic separators, baghouses, electrostatic precipitators (ESPs) and scrubbers. Being that the gaseous exhaust stream is at a moderately high temperature a wet scrubber can provide efficient removal.[6] Wet scrubbers are typically used to control emissions of PM/PM_{10}. A wet scrubber can also control SO_2 emissions.

A spot review of similar controls in place at other fertilizer plants in Florida was performed. It was difficult to ascertain what if any air pollution controls were employed at other plants. A review of the current Title V permits in effect from the Mosaic-New Wales, PCS-White Springs and CFI-Plant City plants did not indicate whether or not any air pollution control devices where in place.

A review of the recent U.S. EPA consent decrees (settlement cases) on fertilizer plants, specifically the Rhodia Inc. and DuPont cases in 2007, indicates no imposition of air pollution control technologies or measures on molten sulfur storage tanks.[7]

EPA suggests considering pollution prevention practices as an option to evaluate ways in which emissions can be reduced. No lower emitting processes or operations related to the storage of molten sulfur have been found. It is likely that emissions are minimized by the permittee simply by their maintaining a proper storage temperature of the molten sulfur. Operations likely require good practices in handling and storage to not waste this raw material which is used to make sulfuric acid.

Review of air pollution requirements currently in effect applicable to the molten sulfur storage tanks indicates that the molten sulfur storage tanks are regulated under no specific federal regulations however, they are regulated under specific state rules, Rule 62-296.411, F.A.C., *Sulfur Storage and Handling Facilities*, and additional requirements as specified in the current Title V permit, Permit Number 0570008-045-AV. The state rule contains specific emission standards and requirements. Specific parts of the state rule applicable to the

molten sulfur storage tanks are: Rule 62-296.411(1) & 296.411(4), F.A.C. These state requirements also contain specific practices required to minimize emissions of sulfur particulate matter and SO_2 emissions.

In Appendix Y to 40 CFR Part 51 - Guidelines for BART Determinations, section IV.D.1. Step 1.9. provides:

> "If you find that a BART source has controls already in place which are the most stringent controls available (note that this means that all possible improvements to any control devices have been made), then it is not necessary to comprehensively complete each following step of the BART analysis in this section. As long these most stringent controls available are made federally enforceable for the purpose of implementing BART for that source, you may skip the remaining analyses in this section, including the visibility analysis in step 5 (emphasis added). Likewise, if a source commits to a BART determination that consists of the most stringent controls available, then there is no need to complete the remaining analyses in this section."

Based on a review of similar sources, the Riverview facility has air pollution controls already in place which are found to be the most stringent available for molten storage tanks. Additionally, the specific emission standards and requirements contained in the state rule, Rule 62-296.411, F.A.C., *Sulfur Storage and Handling Facilities*, and the additional requirements as specified in the current Title V permit, Permit Number 0570008-045-AV, require the latest known pollution prevention practices for molten storage tanks. The Steps 2. through 5. of the BART analysis are therefore not required.

Step 2. Eliminate technically infeasible options.

Not required.

Step 3. Evaluate control effectiveness of remaining control technologies.

Not required.

Step 4. Evaluate the impacts of the remaining technologies and document the results.

Not required.

Step 5. Evaluate visibility impacts.

As previously stated above, the maximum visibility impact from the molten sulfur storage pits is 0.003 dv.

Preliminary BART Determination

Applicant's PM/PM_{10} and SO_2 BART Determination

The applicant proposed BART for the control of PM_{10} emissions from the molten sulfur storage tanks to be the use of the existing wet scrubber (see the Application, Section 5.3 BART for the Molten Sulfur Storage Tank Nos. 1, 2, and 3).

The applicant proposed a BART emission limitation for PM_{10} emissions from the molten sulfur storage tanks to be the existing PM emission standard of 0.03 gr/dscf (see the Additional Information Response dated July 9, 2007).

Department's Preliminary PM/PM_{10} and SO_2 BART Determination

BART requires by definition an emission limitation to be established on a case-by-case basis for each BART pollutant. The BART also requires the application of the best system of continuous emission reduction for each BART pollutant.

Actual test results in the Department's Air Resource Management System (ARMS) database were reviewed. According to ARMS, the actual PM emissions during the 3/7/2006 test were 0.002 gr/dscf. The most recent VE test results from the 5/1/2007 test indicate an opacity of 4%. A review of test results from 2006 and 2005 indicates VE test results have been consistently less than 5% opacity.

The Department proposes BART to be the existing PM emission standard of 0.03 gr/dscf, the existing 10% opacity limitation from Rule 62-296.411(1)(g), F.A.C., the use of a wet scrubber, and compliance with the current requirements in effect as they apply to the molten sulfur storage tanks from Rule 62-296.411, F.A.C., *Sulfur Storage and Handling Facilities*, and the additional requirements as specified in the current Title V permit, Permit Number 0570008-045-AV. Pursuant to Rule 62-296.340(3)(b)2., F.A.C., the applicant is required to comply with an Operation & Maintenance (O&M) Plan for the wet scrubber.

The applicant currently tests the wet scrubber for PM emissions every 5 years (see specific condition J.5., Permit Number 0570008-045-AV) A visible emissions (VE) test to demonstrate compliance with the 10% opacity (see specific condition J.2.) is required to be conducted annually (see specific condition J.5., Permit Number 0570008-045-AV). The current test frequencies are deemed to be adequate for BART.

Specific condition J.9. in the current Title V permit, Permit Number 0570008-045-AV, requires the permittee to record once every 8 hours the scrubber's pressure drop and liquid flow rate. This monitoring is deemed to be adequate for BART.

The Title V permit, Permit Number 0570008-045-AV, contains the test methods & procedures for PM emissions and VE.

4. BART ANALYSIS AND PRELIMINARY BART DETERMINATION MOLTEN SULFUR STORAGE AND HANDLING SYSTEM -- STORAGE PIT NOS. 7, 8 & 9

This section provides the control technology review and BART determination for the following emissions units.

EU ID No.	Brief Description
-066	Molten Sulfur Storage and Handling System -- Storage Pit No. 7
-067	Molten Sulfur Storage and Handling System -- Storage Pit No. 8
-068	Molten Sulfur Storage and Handling System -- Storage Pit No. 9

BART Analysis

The pits are sources of sulfur particulate matter (PM/PM_{10}) and SO_2 emissions. The pits are not sources of NOx emissions as there is no combustion.

Applicant's PM/PM_{10} and SO_2 Control Technology Review

The applicant did not perform a technology review as part of the application.

Department's PM/PM_{10} and SO_2 Control Technology Review

Molten sulfur is unloaded from ships to any combination of the three molten sulfur storage tanks. These tanks then transfer molten sulfur to the storage pits located at the sulfuric acid plants and also to the molten sulfur truck loading station. PM_{10} in small quantities is emitted from the storage of molten sulfur in the pits. Covers are in place over the molten sulfur pits. Controlled PM_{10} emissions are estimated to be equivalent to approximately 1.31 pounds per hour (24-hour average) and 5.74 tons per year.[8] Based on specific condition 4. from PSD-FL-315, SO_2 emissions from the pits are estimated to be 0.12 tons per year. The analysis for the control of SO_2 emissions from the tanks was subsumed in the control of PM/PM_{10} emissions.

Step 1. Identify all available retrofit control technologies.

Typical PM_{10} air pollution control technologies are mechanical and cyclonic separators, baghouses, electrostatic precipitators (ESPs) and scrubbers. A spot review of similar controls in place at other fertilizer plants was performed. It was difficult to ascertain what if any air pollution controls were employed at other plants on molten sulfur pits. A review of the current Title V permits in effect from the Mosaic-New Wales, PCS-White Springs and CFI-Plant City plants did not indicate whether or not any air pollution control devices where in place.

The previously mentioned pollution prevention practices that could apply to the molten sulfur storage tanks also apply to the molten sulfur storage pits.

Review of air pollution requirements currently in effect applicable to the molten sulfur storage pits indicates that the molten sulfur storage pits are regulated under no specific federal regulations however, they are regulated under specific state rules, Rule 62-296.411, F.A.C., *Sulfur Storage and Handling Facilities*, and additional requirements as specified in the current Title V permit, Permit Number 0570008-045-AV. The state rule contains specific emission standards and requirements. Specific parts of the state rule applicable to the molten sulfur storage pits are: Rule 62-296.411(1) & 296.411(4), F.A.C. These state requirements also contain specific practices required to minimize emissions of sulfur particulate matter.

In Appendix Y to 40 CFR Part 51 - Guidelines for BART Determinations, section IV.D.1. Step 1.9. provides:

> "If you find that a BART source has controls already in place which are the most stringent controls available (note that this means that all possible improvements to any control devices have been made), then it is not necessary to comprehensively complete each following step of the BART analysis in this section. As long these most stringent controls available are made

federally enforceable for the purpose of implementing BART for that source, you may skip the remaining analyses in this section, including the visibility analysis in step 5 (emphasis added). Likewise, if a source commits to a BART determination that consists of the most stringent controls available, then there is no need to complete the remaining analyses in this section."

The specific emission standards and requirements contained in the state rule, Rule 62-296.411, F.A.C., *Sulfur Storage and Handling Facilities*, and the additional requirements as specified in the current Title V permit, Permit Number 0570008-045-AV, require the latest known pollution prevention practices for molten storage pits. The Steps 2. through 5. of the BART analysis are therefore not required.

Step 2. Eliminate technically infeasible options.

Not required.

Step 3. Evaluate control effectiveness of remaining control technologies.

Not required.

Step 4. Evaluate the impacts of the remaining technologies and document the results.

Not required.

Step 5. Evaluate visibility impacts.

Not required.

Preliminary BART Determination

Applicant's PM/PM_{10} and SO_2 BART Determination

The applicant proposed BART for the control of PM_{10} emissions from the molten sulfur storage pits to be the use of the existing covers (see the Application, Section 5.4. BART for the Molten Sulfur Storage Pits Nos. 7, 8, and 9).

Department's Preliminary PM/PM_{10} and SO_2 BART Determination

BART requires by definition an emission limitation to be established on a case-by-case basis for each BART pollutant. The BART also requires the application of the best system of continuous emission reduction for each BART pollutant.

Actual test results in the ARMS database were reviewed. According to ARMS, the most recent VE were 0% from Storage Pit #7 during the 02/22/2007 test date. Test results were not available in ARMS for Storage Pit #8. VE were 0% during the most recent VE test performed on 03/08/2007 from the Storage Pit #9.

The Department proposes BART to be the existing VE standard of 10% from Rule 62-296.411(1)(g), F.A.C., the use of covers and compliance with the current requirements in effect as they apply to the molten sulfur storage pits from Rule 62-296.411, F.A.C., *Sulfur Storage and Handling Facilities*, and the additional requirements as specified in the current Title V permit, Permit Number 0570008-045-AV.

A VE test to demonstrate compliance with the 10% opacity limitation is required to be conducted annually (see specific condition J.5., Permit Number 0570008-045-AV). The current test frequency for VE testing is deemed to be adequate for BART.

The Title V permit, Permit Number 0570008-045-AV, contains the test methods & procedures for VE.

5. BART ANALYSIS AND PRELIMINARY BART DETERMINATION FOR NOS. 7, 8 & 9 SULFURIC ACID PLANTS

This section provides the control technology review and BART determination for the following emissions units.

EU ID No.	Brief Description
-004	No. 7 Sulfuric Acid Plant
-005	No. 8 Sulfuric Acid Plant
-006	No. 9 Sulfuric Acid Plant

BART Analysis for SO_2

Applicant's SO_2 Control Technology Review

The applicant performed an extensive and detailed technology review as part of the application (see the Application, Section 5.1.1 Available Retrofit Technologies for the SO_2 emissions from the Nos. 7, 8, and 9 Sulfuric Acid Plants). The applicant relied primarily on the RACT/BACT/LAER Clearinghouse (RBLC) on U.S. EPA's web site as a source of information. The applicant prepared a table summarizing the most recent BACT determinations with the emission limits and control equipment (see the Application, Table 5-1). Additional technologies and measures described by the applicant in Section 5.1.1 of the Application were: Sorbent Injection; Process Modification; Gas Absorption/Wet Scrubber; Flue Gas Desulfurization; and, Oxidation. The applicant completed Steps 1. through 5. of the prescribed BART analysis (see the Application, Section 5.1 BART for SO_2 emissions from Nos. 7, 8, and 9 SAPs).

According to the applicant these emissions units have a best available control technology (BACT) established SO_2 emissions limit. The BACT for No. 7 Sulfuric Acid Plant was established in 1998 and the BACT for Nos. 8 & 9 Sulfuric Acid Plants were established in 2001.

Department's SO_2 Control Technology Review

Sulfuric acid pants are sources of sulfuric vapor, SO_2, SO_3 and sulfuric acid mist (SAM) emissions.[9] Air pollutant emissions of sulfuric vapor, SO_2, SO_3 and are directly linked to the type of chemical process producing sulfuric acid and how the plants are operated. Emissions are generated as part of the chemical process which involves combustion and absorption. Reductions in emissions to the atmosphere result in the capture and use of sulfur in the chemical process. These units have a double absorption system with enhanced catalyst required by recent BACT permits in 1998 and 2001. These BACT permits were issued within the last 10 years.

Step 1. Identify all available retrofit control technologies.

The Air & Waste Management Association's (A&WMA) Air Pollution Engineering Manual describes established air pollution controls and measures.[10] In general this manual cites controls and measures as Process Modifications and Scrubbing Technologies. These techniques were identified by the applicant. The applicant identified other controls not mentioned in the manual like oxidation; scrubbing with a wet limestone scrubber flue gas desulphurization (FGD); molecular sieves; and, sorbent injection. U.S. EPA cites increased recovery efficiency as a potential control measure in a recent control document prepared by EPA.[11] Review of the AirControlNET indicates no other controls or measures.[12]

Most modern sulfuric acid plants are double absorption systems.[13] For purposes of this document modern plants are considered to be those plants built after the NSPS for sulfuric acid plants (40 CFR 60 Subpart H) which was promulgated by U.S. EPA in the 1970's. In a double absorption system, two absorbing towers are utilized hence the name "double absorption." In the second (final) absorbing tower remaining SO_3 is converted to sulfuric acid. Double absorption systems are recognized as achieving a conversion efficiency of SO_2 to SO_3 of at least 99.7%. Most systems today use an enhanced (special) catalyst in the final converter and use packed-fiber mist eliminators or demister pads to remove SAM. Some SAPs use heat recovery systems to recycle some waste

heat back to the process and to generate electricity. The Riverview and New Wales SAPs use heat recovery systems. This type of SAP effectively reduces sulfuric vapor, SO_2, SO_3 and SAM emissions.

It is very important to note that these emissions units had a best available control technology (BACT) established SO_2 emissions limit. The BACT for No. 7 Sulfuric Acid Plant was established in 1998 when production was increased (see PSD-FL-250, Permit Number 0570008-025-AC). The BACT for Nos. 8 & 9 Sulfuric Acid Plants was established in 2001 as part of a facility expansion (see PSD-FL-315, Permit Number 0570008-036-AC). The BACT for SAP No. 7 specified the use of the existing double absorption system with an increased use of vanadium catalyst in the two converters and the use of impaction-based mist eliminators. The BACT for SAP Nos. 8 & 9 specified the use of the existing double absorption system and the use of mist eliminators.

RBLC Review

The information provided by the applicant from the RBLC was confirmed by the Department. The Department accessed the RBLC on U.S. EPA's web site on February 14, 2007.[14] Twelve (12) BACT determinations were shown to have been issued during the last 10 years (see the Table 1. Format RBLC Report attached). The RBLC report listed 11 SAPs. The most recent BACT determination was in fact in Florida from the CFI-Plant City facility issued on June 1, 2004. This BACT required the use of the existing double absorption system with an enhanced catalyst. The enhancement to the catalyst was the use of a cesium promoted vanadium catalyst in the 4th converter of the two (2) SAPs.[15]

Mosaic Plants and Similar Sulfuric Acid Plants Evaluation

A spot review of similar controls and measures in place at other fertilizer plants in Florida was performed. It was easy to find the types of plants from the emissions unit descriptions in the most recent Title V permits. A review of the current Title V permits in effect from the Mosaic-New Wales for five (5) SAPs and PCS-White Springs for four (4) SAPs indicated these SAPs are double absorption. Two of the four SAPs at the CFI-Plant City facility are double absorption and use heat recovery systems. However, it was difficult to ascertain whether or not specific enhancements are in place for catalysts at each SAP.

The Department has issued two recent BACT determinations for these SAPs as previously mentioned (see d. and e. cited below). BACT determinations in Florida of interest to this project have been issued for the following:

a. PSD-FL-355 issued on July 23, 2007, to CF Industries, Inc.-Plant City facility for the B sulfuric acid plant (single absorption plant). SO_2 emissions are limited to 3.5 lb SO_2/ton 100% H_2SO_4 produced, 3-hour rolling average, as demonstrated by CEMS.

b. PSD-FL-339 issued on June 1, 2004, to CF Industries, Inc.-Plant City facility for the C & D sulfuric acid plants (double absorption systems). SO_2 emissions are limited to 3.5 lb SO_2/ton 100% H_2SO_4 produced, 3-hour rolling average, as demonstrated by CEMS.

c. PSD-FL-325 issued on July 12, 2002, to IMC Phosphates, Inc. (now Mosaic) New Wales facility for Nos. 1, 2 and 3 sulfuric acid plants (double absorption systems). SO_2 emissions are limited to 3.5 lb SO_2/ton 100% H_2SO_4 produced, 24-hour rolling average, as demonstrated by CEMS.

d. PSD-FL-315 issued on November 21, 2001, to Cargill Fertilizer (now Mosaic) Riverview facility for Nos. 8 and 9 sulfuric acid plants (double absorption systems). SO_2 emissions from both SAPS are limited to 3.5 lb/ton 100% H_2SO_4 produced, 24-hour block average, as demonstrated by CEMS.

e. PSD-FL-250 issued on October 16, 1998, to Cargill Fertilizer (now Mosaic) Riverview facility for No 7 sulfuric acid plant (double absorption system). SO_2 emissions are limited to 3.5 lb/ton 100% H_2SO_4 produced, 24-hour daily (block implied) average, as demonstrated by CEMS.

Although the first BACT determination was for a single absorption plant, the applicant accepted a BACT SO_2 emission limit established for a double absorption system. The remaining BACT determinations deemed the use of the double absorption process for SO_2 control and the use of mist eliminators for sulfuric acid mist control.

Review of NSR/PSD Settlement Agreements for SAPs

A review of the recent U.S. EPA consent decrees (settlement cases) in 2007 on fertilizer plants, specifically the Rhodia Inc. settlement dated April 2007 and the DuPont settlement dated July 2007, indicates EPA is requiring "state-of-the-art SO_2 control technology" on the cited sulfuric acid plants. The "state-of-the-art SO_2 control technology" being required on the 12 SAPs cited in the settlements is double absorption systems with an enhanced catalyst. The Rhodia settlement allows the installation of wet gas scrubbers in lieu of the double absorption systems with an enhanced catalyst. Both settlements require a compliance demonstration using SO_2 CEMS.[16]

Further Process Modifications

Improvements to the process could result in further reductions in emissions. One such improvement appears to be changing the type of catalyst, specifically, the chemical composition of the catalyst and/or the size & shape of the catalyst. These changes may further enhance the chemical process particularly as noted by the progress made in improving catalysts based on information from DKL Engineering, Inc.[17]

Pollution Prevention Practices

EPA suggests considering pollution prevention practices as an option to evaluate ways in which emissions can be reduced. Preventing emissions can be achieved through process improvements as previously discussed. Advancements in sulfuric acid plant chemical process technology can reduce emissions. Emissions are also minimized by following best operational practices during the startup and shutdown of a SAP.

In Appendix Y to 40 CFR Part 51 - Guidelines for BART Determinations, section IV.D.1. Step 1.9. provides:

> "If you find that a BART source has controls already in place which are the most stringent controls available (note that this means that all possible improvements to any control devices have been made), then it is not necessary to comprehensively complete each following step of the BART analysis in this section. As long these most stringent controls available are made federally enforceable for the purpose of implementing BART for that source, you may skip the remaining analyses in this section, including the visibility analysis in step 5. Likewise, if a source commits to a BART determination that consists of the most stringent controls available, then there is no need to complete the remaining analyses in this section (emphasis added)."

Also, as indicated in Appendix Y to 40 CFR Part 51 - Guidelines for BART Determinations, section IV.C., EPA indicates that it may be possible to streamline the BART analysis by accepting the recent BACTs and/or the recent EPA NSR/PSD settlements as being BART. The pertinent parts of section IV.C. are excerpted below.

> " ... States may streamline the analysis ...
>
> We believe that the same rationale also holds true for emissions standards developed for municipal waste incinerators under CAA section 111(d), and for many NSR/PSD determinations and NSR/PSD settlement agreements. However, we do not believe that technology determinations from the 1970s or early 1980s, including new source performance standards (NSPS), should be considered to represent best control for existing sources, as best control levels for recent plant retrofits are more stringent than these older levels.

The three SAPs at the Riverview facility have recent BACT permits (1998 and 2001) requiring a double absorption system with an enhanced catalyst. These recent BACT permits are consistent with the recent EPA settlement agreements for SAPs. As the same control technology is proposed as BART for these three sulfuric acid plants, Steps 2. through 5. of the BART analysis are therefore not required.

Step 2. Eliminate technically infeasible options.

Not required.

Step 3. Evaluate control effectiveness of remaining control technologies.

Not required.

Step 4. Evaluate the impacts of the remaining technologies and document the results.

Not required.

Step 5. Evaluate visibility impacts.

Not required.

Preliminary BART Determination for SO_2

Applicant's SO_2 BART Determination

SO_2 Control Technology

The applicant proposed BART for the control of SO_2 emissions to be the currently employed double absorption system with cesium promoted catalyst in the 4th converter for the Nos. 8 & 9 SAPs. The applicant proposed the control of SO_2 emissions to be the currently employed double absorption system with vanadium catalyst in the No. 7 SAP.

SO_2 Emission Limitations

The applicant proposed the BART emission limitations for each SAP to be the current emission limitation of 3.5 lb SO_2/ton 100% H_2SO_4 produced based on a 24-hour block average. The applicant proposed compliance with the limitations to be demonstrated by annual stack tests (see September 11, 2007 Additional Information Response).

In response to the Department's request for additional information when asked if this plant would propose any improvements to reduce the visibility impacts from this facility, the applicant indicated that "based on either the high cost of compliance or negligible amount of visibility improvement possible, no additional control technology is proposed for these units."

Department's Preliminary SO_2 BART Determination

SO_2 Control Technology

The Department accepts the applicant's proposed BART for the control of SO_2 emissions to be the currently employed double absorption system with cesium promoted catalyst in the 4th converter for the Nos. 8 & 9 SAPs. The Department also accepts the applicant's proposed BART for the control of SO_2 emissions to be the currently employed double absorption system with vanadium catalyst in the No. 7 SAP. To control emissions of SAM, the Department requires the use of the existing packed-fiber mist eliminators or demister pads to remove SAM. PM/PM_{10} and visible emissions are minimized with these control technologies and techniques.

SO_2 Emission Standards and Limitations

BART requires by definition an emission limitation to be established on a case-by-case basis for each BART pollutant and the BART requires the application of the best system of continuous emission reduction for each BART pollutant.

A case-by-case evaluation can be accomplished by reviewing actual SO_2 emissions data. Because the Department accepts the applicant's proposed BART SO_2 control technologies as the currently employed technologies, a review of past actual SO_2 emissions data is performed to establish acceptable SO_2 emission limitations under BART.

The applicant provided actual SO_2 CEMS data in the form of graphs from the most recent 5-year period (calendar year 2006 - 2002 emissions) and actual SO_2 stack test results from 2000 through 2007 (see Appendices

C and E respectively of the Additional Information Response dated July 9, 2007). The applicant, at the Department's request, reduced the SO_2 CEMS data to three (3) and twenty four (24) average periods. Visual interpretations of the SO_2 CEMS data in the graphs submitted by the applicant were performed. A predominant data range was established encompassing the majority of the CEMS data with an upper and lower end value. Each data range for the three (3) and twenty four (24) data sets for each SAP are shown in **Figure A**. The data ranges are summarized below.

SO_2 CEMS Data Analysis

	Data Range (2002 - 2006) lb SO_2/ton, 3-hour average	**Data Range (2002 - 2006) lb SO_2/ton, 24-hour average**
SAP No. 7	3.0 - 4.0	3.0 - 3.5
SAP No. 8	3.0 - 4.0	2.75 - 3.5
SAP No. 9	3.0 - 3.75	3.0 - 3.5

In addition, the applicant provided actual SO_2 stack test results from 2000 through 2007 (see Appendix E of the Additional Information Response dated July 9, 2007). These test results can be summarized as follows:

SO_2 Stack Test Data Review

	Averages of Stack Tests (2000 - 2007) lb SO_2/ton, 3-hour average	**Test Ranges**
SAP No. 7	3.27	2.5 - 4.0
SAP No. 8	3.50	2.9 - 3.8
SAP No. 9	2.92	2.1 - 3.3

For BART, the applicant proposed to demonstrate compliance with the proposed "24-hour" standard with an annual "3-hour" stack test. This BART determination requires the applicant to demonstrate compliance with the SO_2 emission standards and limitations on a continuous basis using the CEMS data. This BART proposes to change the existing daily (block) averages from the BACT permits to 24-hour rolling averages. A 24-hour rolling average is aligned with the 24-hour averaging period used in the air quality modeling analysis for visibility. A 24-hour rolling average is consistent with the most recent BACT for the SAPs at New Wales.

The Department proposes the BART SO_2 emission standards and limitations for each SAP to be: an emission limitation of 3.5 lb SO_2/ton 100% H_2SO_4 produced based on a 24-hour rolling average as determined by CEMS data; the use of best operational practices to minimize emissions during startup and shutdown as described in the most recent Title V permit application; the best operational practices to minimize excess SO_2 and SO_3 emissions during startup are governed by the "Memorandum of Understanding Regarding Best Operational Start-up Practices for Sulfuric Acid Plants" contained in Appendix D; and, the additional requirements as specified in the current Title V permit, Permit Number 0570008-045-AV.

The Department understands the applicant may need time to convert to a CEMS used for compliance with this permit. A condition for transitioning to this type of CEMS is added to the permit. This permit provides 5 years in which to make these transitions which should be easily attainable.

The Title V permit, Permit Number 0570008-045-AV, contains the test methods & procedures for SO_2 emissions.

BART Analysis for PM/PM_{10}

Control Technology Review

The control technologies and measures applicable to PM/PM_{10} were previously discussed for SO_2 emissions.

PM/PM_{10} - Visible Emission Standards and Limitations

BART requires by definition an emission limitation to be established on a case-by-case basis for each BART pollutant and the BART requires the application of the best system of continuous emission reduction for each BART pollutant.

PM/PM_{10} and visible emissions are generally minimized by controlling sulfuric acid mist (SAM) emissions. The Department has required the use demister pads to remove emissions of SAM in prior BACT permits. Demister pads are highly effective in removing SAM emissions thus controlling emissions of sulfuric particulate matter or PM/PM_{10}.

The applicant provided actual SAM stack test results from 2000 through 2007 (see Appendix E of the Additional Information Response dated July 9, 2007). The test results can be summarized as follows:

SAM Stack Test Data Review

	Test Ranges (2000 - 2007) lb SO_2/ton, 3-hour average
SAP No. 7	0.02 - 0.04
SAP No. 8	0.02 - 0.06
SAP No. 9	0.01 - 0.04

A review of this historical SAM test data indicates that actual SAM emissions from the SAPs have ranged from 0.01 to 0.06 lb SAM/ton 100% H_2SO_4 produced. The existing standard of 0.12 lb SAM/ton 100% H_2SO_4 produced for SAP No. 7 and the standard of 0.10 lb SAM/ton 100% H_2SO_4 produced for SAP Nos. 8 & 9 therefore have been met within a significant margin. Actual SAM emissions are very low.

A review of the historical VE test data from 2000 through 2007 provided by the applicant indicates that actual VE from each SAP have been at 0% opacity (see Appendix E of the Additional Information Response dated July .9, 2007). The existing 10% opacity standard has been easily complied with by each SAP. The applicant has indicated that lowering the VE standard from 10% to 5% would "leave no room for operational flexibility." The Department agrees with the applicant that it is difficult to measure between 5% and 10% opacity with Method 9. A VE standard of 10% provides a margin of compliance (buffer), effectively limiting operations to between 0 and 5% opacity.

The Department proposes the BART VE limitations for the SAPs to be the current limitations of 10% opacity and the use of demister pads along with the additional requirements as specified in the current Title V permit, Permit Number 0570008-045-AV.

VE are currently tested annually. The current test frequency for VE testing is deemed to be adequate for BART.

The Title V permit, Permit Number 0570008-045-AV, contains the test methods & procedures for VE.

BART Analysis for NO_X

Applicant's NO_X Control Technology Review

The applicant indicated that no known NOx control technologies have been employed by SAPs.

Department's NO_X Control Technology Review

The Department expects NOx emissions to be like SAM emissions, very low. NOx is formed within the combustion process. The technique to reduce NOx emissions currently employed by these SAPs is good

combustion practices. Additional controls are likely not cost effective. Steps 1. through 5. of the BART analysis can therefore be skipped.

Step 1. Identify all available retrofit control technologies.

Not required.

Step 2. Eliminate technically infeasible options.

Not required.

Step 3. Evaluate control effectiveness of remaining control technologies.

Not required.

Step 4. Evaluate the impacts of the remaining technologies and document the results.

Not required.

Step 5. Evaluate visibility impacts.

According to the applicant, emissions of NO_X from the SAPs contribute to less than 1% of the total visibility impact. Therefore, due to the low NO_X emissions and cost effectiveness, existing good combustion practices are proposed as BART control technology for NO_X and no further BART modeling was completed.

Preliminary BART Determination for NO_X

Applicant's NOx BART Determination

The applicant proposed the controls of NOx to be the existing combustion process and the use of good combustion practices.

The applicant did not propose a NO_X emission limitation for the SAPs. The No. 7 SAP did have an initial NOx emission limitation from the BACT (PSD-FL-250 issued in 1998) of 0.12 lb/ton to demonstrate a modification was minor with respect to PSD.

Department's Preliminary NOx BART Determination

NO_X Control Technology

This BART determination does not require new, modified or additional air pollution control systems or measures for NOx. To control emissions of nitrogen oxides (NOx) from each SAP, the permittee shall continue the use of the existing combustion technology and the use of good combustion practices & best operational practices to minimize excess emissions during startup and shutdown.

NOx Emission Standards and Limitations

BART requires by definition an emission limitation to be established on a case-by-case basis for each BART pollutant. The BART also requires the application of the best system of continuous emission reduction for each BART pollutant.

The No. 7 SAP previously had an initial NOx emission limitation of 0.12 lb/ton from PSD-FL-250. Consistent with other BACTs from similar SAPs in Florida, a 0.12 lb/ton standard is reasonable. In addition, the "lb/ton" equivalent value calculated from the 24-hour maximum averages used in the air dispersion modeling was 0.12 lb NOx/ton 100% H_2SO_4 produced. While NOx CEMS are available, none have been required on SAPs to the Department's knowledge. Due to the expected low levels of NOx emissions a NOx CEMS would be impractical.

The Department proposes the BART NOx emission standards and limitations for each SAP to be: a new standard of 0.12 lb NOx/ton 100% H_2SO_4 produced; the use of the existing combustion technology; the use of good combustion practices; and, the use of best operational practices to minimize excess emissions during startup and shutdown. An initial NOx stack test shall be performed. Because the potential NOx emissions are

less than 100 TPY a test frequency of every 5 years is required from Rule 62-297, F.A.C. and is deemed adequate for BART.

In summary, the proposed BART emission limitations are as follows:

No. 7 SAP

SO_2
3.5 lb/ton 100% H_2SO_4 produced, 24-hour rolling average; 467 lb/hr, and, 2,044 TPY.

NOx
0.12 lb/ton 100% H_2SO_4 produced, (3-hour average implied); 16 lb/hr, 70 TPY.

PM/PM_{10} - Visible Emissions
10% opacity, 6-minute average.

No. 8 SAP

SO_2
3.5 lb/ton 100% H_2SO_4 produced, 24-hour rolling average; 393.8 lb/hr, and, 1,724.6 TPY.

NOx
0.12 lb/ton 100% H_2SO_4 produced, (3-hour average implied); 13.5 lb/hr, 59.1 TPY.

PM/PM_{10} - Visible Emissions
10% opacity, 6-minute average.

No. 9 SAP

SO_2
3.5 lb/ton 100% H_2SO_4 produced, 24-hour rolling average; 495.8 lb/hr, and, 2,171.8 TPY.

NOx
0.12 lb/ton 100% H_2SO_4 produced, (3-hour average implied); 17 lb/hr, 74.4 TPY.

PM/PM_{10} - Visible Emissions
10% opacity, 6-minute average.

6. COMPARISON OF EXISTING AIR POLLUTION CONTROL TECHNOLOGY & MEASURES TO PROPOSED BART AIR POLLUTION CONTROL TECHNOLOGY & MEASURES

This proposed BART determination requires some new air pollution control measures as summarized below for the emissions units stated. No new air pollution control technology is required to be installed as part of this proposed BART determination.

EU ID No.	Brief Description
-063	Molten Sulfur Storage and Handling System -- Storage Tank Nos. 1, 2 and 3
-066	Molten Sulfur Storage and Handling System -- Storage Pit No. 7
-067	Molten Sulfur Storage and Handling System -- Storage Pit No. 8
-068	Molten Sulfur Storage and Handling System -- Storage Pit No. 9

No proposed changes from this BART determination are made to the existing control technologies for the molten sulfur storage tanks and pits.

This proposed BART determination requires an O&M Plan for the wet scrubber used on the molten sulfur storage tanks pursuant to Rule 62-296.340(3)(b)2., F.A.C. This proposed BART determination also requires the permittee to check the condition of the covers on the three molten sulfur storage pits at least once per 8-hour shift.

EU ID No.	Brief Description
-004	No. 7 Sulfuric Acid Plant
-005	No. 8 Sulfuric Acid Plant
-006	No. 9 Sulfuric Acid Plant

This proposed BART determination requires the use of the existing control technology - the double absorption system with enhanced catalyst, and the acid mist demister pads.

This proposed BART determination requires the permittee to follow the best operational practices to minimize excess emissions during startup and shutdown as described in the most recent Title V permit application in addition to the startup practices to minimize emissions of SO_2 and SO_3 currently in effect as outlined in the "Memorandum of Understanding Regarding Best Operational Start-up Practices for Sulfuric Acid Plants."

7. COMPARISON OF EXISTING EMISSION LIMITATIONS TO PROPOSED BART EMISSION LIMITATIONS

This proposed BART determination changes some existing emission limitations as summarized below for the emissions units stated.

EU ID No.	Brief Description
-063	Molten Sulfur Storage and Handling System -- Storage Tank Nos. 1, 2 and 3
-066	Molten Sulfur Storage and Handling System -- Storage Pit No. 7
-067	Molten Sulfur Storage and Handling System -- Storage Pit No. 8
-068	Molten Sulfur Storage and Handling System -- Storage Pit No. 9

No proposed changes from this BART determination are made to the existing emission limitations of the molten sulfur storage tanks and pits.

7. COMPARISON OF EXISTING EMISSION LIMITATIONS TO PROPOSED BART EMISSION LIMITATIONS (CONTINUED)

EU ID No.	Brief Description
-004	No. 7 Sulfuric Acid Plant
-005	No. 8 Sulfuric Acid Plant
-006	No. 9 Sulfuric Acid Plant

Comparison Table for SAP Nos. 7, 8 & 9 - Proposed BART Emission Limits vs. Existing Emission Limits

The following table summarizes the proposed BART PM (VE) and SO_2 & NOx emission limits in terms of lb/ton 100% H_2SO_4 produced compared to the existing emission limits.

EU ID No.	Brief Description	Existing PM or VE limit	Proposed BART PM or VE limit	Existing SO_2 emission limit	Proposed BART SO_2 emission limit	Existing NOx emission limit	Proposed BART NOx emission limit
-004	SAP No. 7	10% opacity	10% opacity	3.5 lb SO_2/ton 24-hour daily (block implied) average[1]	3.5 lb SO_2/ton 24-hour rolling average[3]	None	0.12 lb NOx/ton
-005	SAP No. 8	10% opacity	10% opacity	3.5 lb SO_2/ton 24-hour block average[2]	3.5 lb SO_2/ton 24-hour rolling average[3]	None	0.12 lb NOx/ton
-006	SAP No. 9	10% opacity	10% opacity	3.5 lb SO_2/ton 24-hour block average[2]	3.5 lb SO_2/ton 24-hour rolling average[3]	None	0.12 lb NOx/ton

References:

[1] As determined by SO_2 CEMS. Originating from PSD-FL-250, specific condition 3. (issued 10/16/1998, expired 12/31/2001). Compliance by SO_2 CEMS not specifically reflected in 0570008-045-AV (issued 05/31/2006, expires 05/31/2011).

[2] As determined by SO_2 CEMS. Originating from PSD-FL-315, specific conditions 4. & 9. (issued 11/21/2001, expiration date extended to 12/1/2007). Compliance by SO_2 CEMS not specifically reflected in 0570008-045-AV (issued 05/31/2006, expires 05/31/2011).

[3] As determined by SO_2 CEMS data.

8. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations regarding BART as conditioned by the Draft permit. This determination is based on a technical review of the complete application, all available information, reasonable assurances provided by the applicant, review of the visibility impact analysis and the conditions specified in the Draft permit.

Mr. Scott M. Sheplak, P.E. is the project engineer responsible for reviewing the application, writing this TEPD and drafting the permit. He may be contacted at scott.sheplak@dep.state.fl.us and 850/921-9532. Ms. Deborah Nelson is the project meteorologist responsible for reviewing the modeling analysis for visibility. She may be contacted at deborah.nelson@dep.state.fl.us and 850/921-9537.

References

[1] World wide web site. Department of Environmental Protection. http://www.dep.state.fl.us/air/eproducts/apds/default.asp Facility ID # 0570008. Accessed on October 17, 2007.

[2] Table 2-2 BART Eligibility Analysis in APPENDIX A - Revised Air Modeling Protocol for Riverview Facility submitted with Air Construction Permit Application dated January 31, 2007.

[3] World wide web site. Department of Environmental Protection. http://www.dep.state.fl.us/air/eproducts/apds/default.asp Permit Number 0570008-045-AV, Appendix H-1: Permit History. Accessed on October 17, 2007

[4] World wide web site. Department of Environmental Protection. http://www.dep.state.fl.us/air/eproducts/apds/default.asp Facility ID # 0570008. "AV" permit type designation with a Final permit effective. Accessed on October 17, 2007.

[5] Equivalent emissions obtained from Table 2-12, Summary of Maximum 24-Hour Average Emission Rates, from Revised Air Modeling Protocol attached to Application. Equivalent emissions from PSD permit expansion dated May, 2001.

[6] Advantages and disadvantages of wet scrubbers. Particulate Scrubbers. Cooper & Alley, *Air Pollution Control: A Design Approach.*

[7] World wide web site. USEPA Office of Enforcement and Compliance Assurance (OECA). Cases and settlements. Specifically: Rhodia Inc.; E.I. du Pont de Nemours & Company; and, Agrium/Royster-Clark. http://cfpub.epa.gov/compliance/cases/index.cfm?templatePage=12&ID=1&sortby=&stat=Clean%20Air%20Act

[8] Equivalent emissions obtained from Table 2-12, Summary of Maximum 24-Hour Average Emission Rates, from Revised Air Modeling Protocol attached to Application. Equivalent emissions from PSD permit expansion dated May, 2001.

[9] A&WMA Air Pollution Engineering Manual 1992 edition. Sulfuric Acid by Thomas L. Muller.

[10] Ibid.

[11] Air Pollution Control Techniques & Measures, Draft Version 1.0, prepared by USEPA OAQPS dated June 7, 2007.

[12] AirControlNET Version 3.2. Documentation Report dated September 2003. Prepared for U. S. EPA by E.H. Pechan & Associates, Inc.

[13] Ibid.

[14] World wide web site. RACT BACT LAER Clearinghouse (RBLC) accessed on February 14, 2007. RBLC Report dated 10/11/2007. http://cfpub.epa.gov/rblc/htm/bl02.cfm .

[15] World wide web site. State of Florida DEP NSR/PSD Construction Permits. BACT determinations. Accessed on February 28, 2007. Phosphate and Related Industries. Specific projects: CFI-Plant City Modification, PSD-FL-339. http://www.dep.state.fl.us/air/permitting/construction.htm .

[16] Ibid.

[17] World wide web site. DKL Engineering Inc. Sulfuric Acid on the Web ™. http://www.sulphuric-acid.com . Accessed on February 28, 2007

Table 1. Format RBLC Report

World wide web site. RACT BACT LAER Clearinghouse (RBLC) accessed on February 14, 2007. RBLC Report dated 10/11/2007. http://cfpub.epa.gov/rblc/htm/bl02.cfm .

Report Date: 02/14/2007 INDEX OF CONTROL TECHNOLOGIES DETERMINATIONS

NOTE: Draft determinations are marked with a " * " beside the RBLC ID.

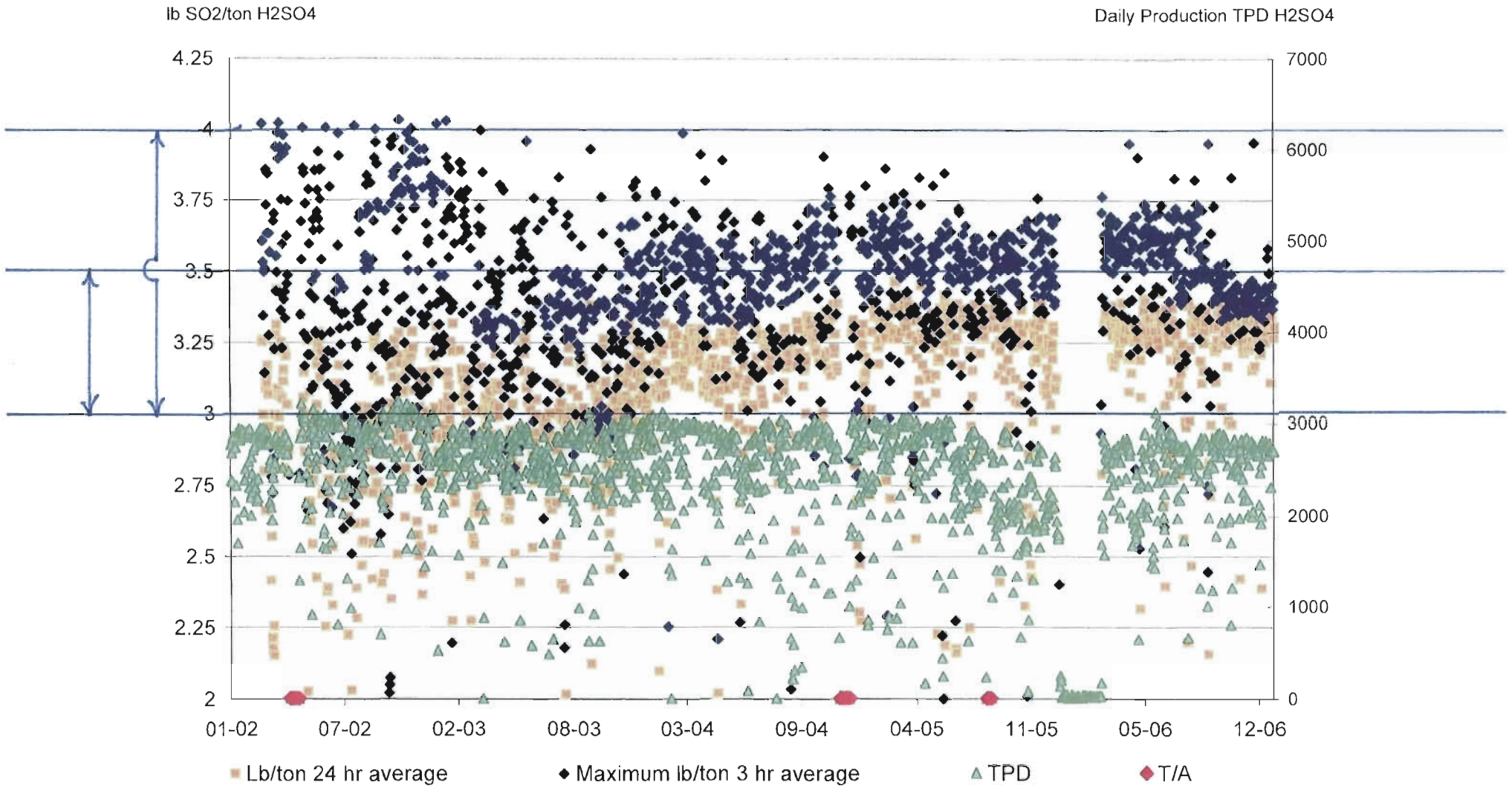
Company Name	RBLC ID	Permit Date (Est/Act)	Process Type	Process Description
PLANT CITY PHOSPHATE COMPLEX	FL-0260	06/01/2004 ACT	62.015	ABSORBER
J R SIMPLOT COMPANY - DON SIDI	ID-0015	04/05/2004 ACT	62.015	400 SULFURIC ACID PLANT
			61.009	GRANULATION I
			62.010	400 PHOSPHORIC ACID PLANT
			13.310	BOILER, 64 MMBTU/H
			99.009	COOLING TOWERS, RECLAIM
			62.015	300 SULFURIC ACID PLANT
			12.310	BOILER, 175 MMBTU/H
			61.009	GRANULATION III
			61.009	GRANULATION II
PCS PHOSPHATE COMPANY	NC-0088	09/24/2003 ACT	62.015	SULFURIC ACID PLANT NO. 4
LUCITE BEAUMONT	TX-0392	12/09/2002 ACT	62.015	SULFURIC ACID PLANT
			13.310	NO.1 PRE-HEATER
			13.310	NO. 2 PRE-HEATER
NEW WALES PLANT/MULBERRY	FL-0253	07/12/2002 ACT	62.015	ABSORBER
DEER PARK PLANT	TX-0377	06/21/2002 ACT	62.015	(3) HRI-III SHORT STACKS, 35-HR-11, 36-HR-11, 38-H
			62.015	HR DAVY STACK, HR-8
			62.015	(2) HR-1&II PREHEATERS; 35-HR-5 & 36-HR-5
			62.015	PRIMENE SALT TANK, 35630
			62.015	(2) H2SO4 TANKS, 96631 & 96632
			62.015	HR-III PREHEATER; 38-HR-5
PCS PHOSPHATE	NC-0099	07/14/2000 ACT	62.015	SULFURIC ACID PLANT, NO. 3
FARMLAND HYDRO, L. P.	FL-0129	03/08/1999 ACT	62.015	SULFURIC ACID MANUFACTURE
CARGILL FERTILIZER , INC. RIVE	FL-0197	10/16/1998 ACT	62.015	SULFURIC ACID PLANT, CONTACT PROCESS
PINEY POINT PHOSPHATES	FL-0194	02/17/1998 ACT	62.015	SULFURIC ACID PLANT, DOUBLE ABSORPTION PROCESS
IMC-AGRICO - SOUTH PIERCE FACI	FL-0210	09/17/1997 ACT	62.015	SULFURIC ACID PLANT
MULBERRY PHOSPHATES, INC.	FL-0172	08/06/1997 ACT	62.015	SULFURIC ACID PLANT, DOUBLE ABSORPTION METHOD

Figure A - SO_2 CEMS data from SAPs

SO_2 CEMS data provided by the applicant with the Department's additions.

RIVERVIEW SAP 07

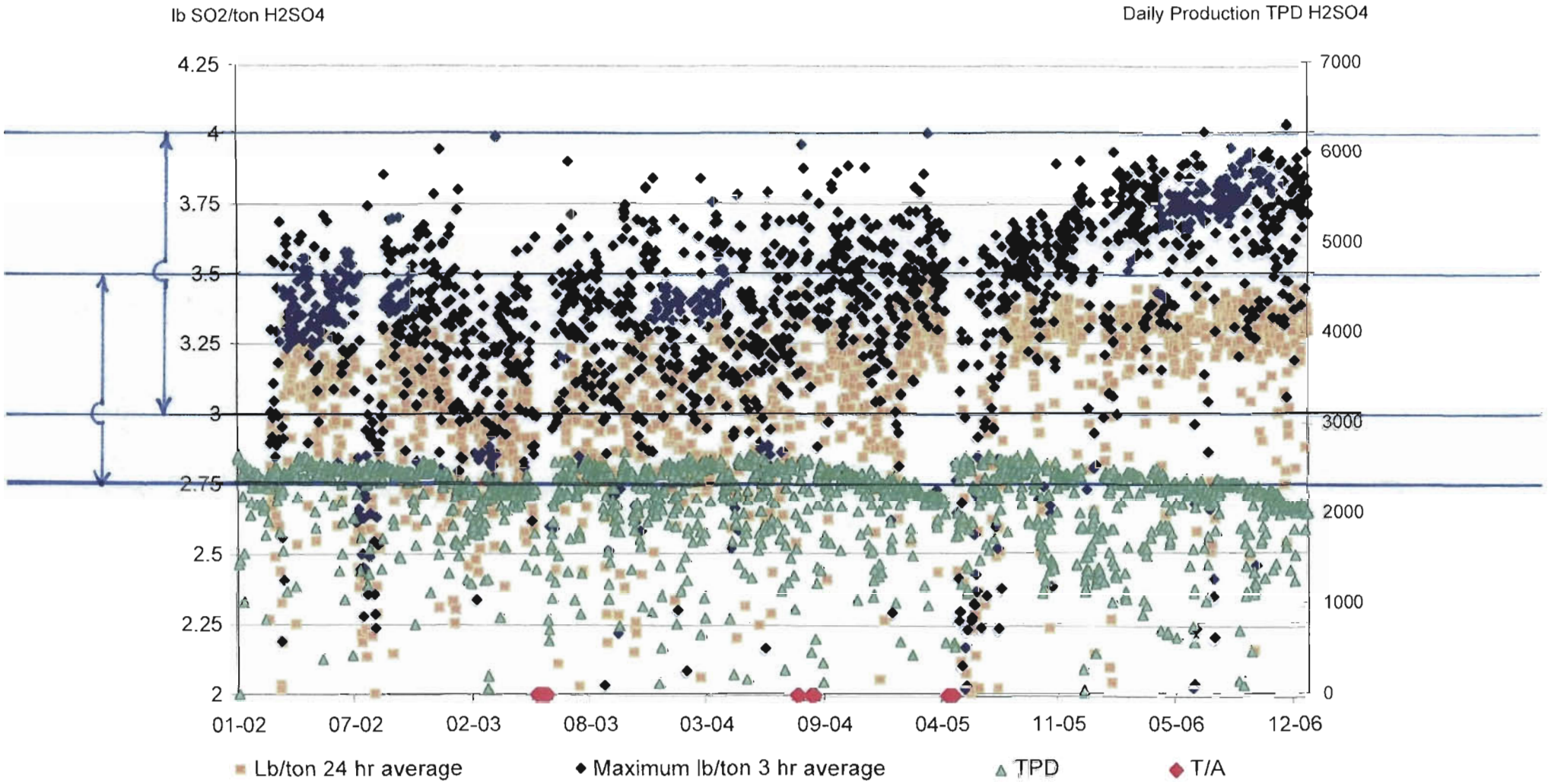
24-HR AVERAGE AND 3-HR MAXIMUM LB SO_2/TON H_2SO_4 AND DAILY H_2SO_4 PRODUCTION



Data Range lb SO_2/ton, 24-hour average	Data Range lb SO_2/ton, 3-hour average
3.0 - 3.5	3.0 - 4.0

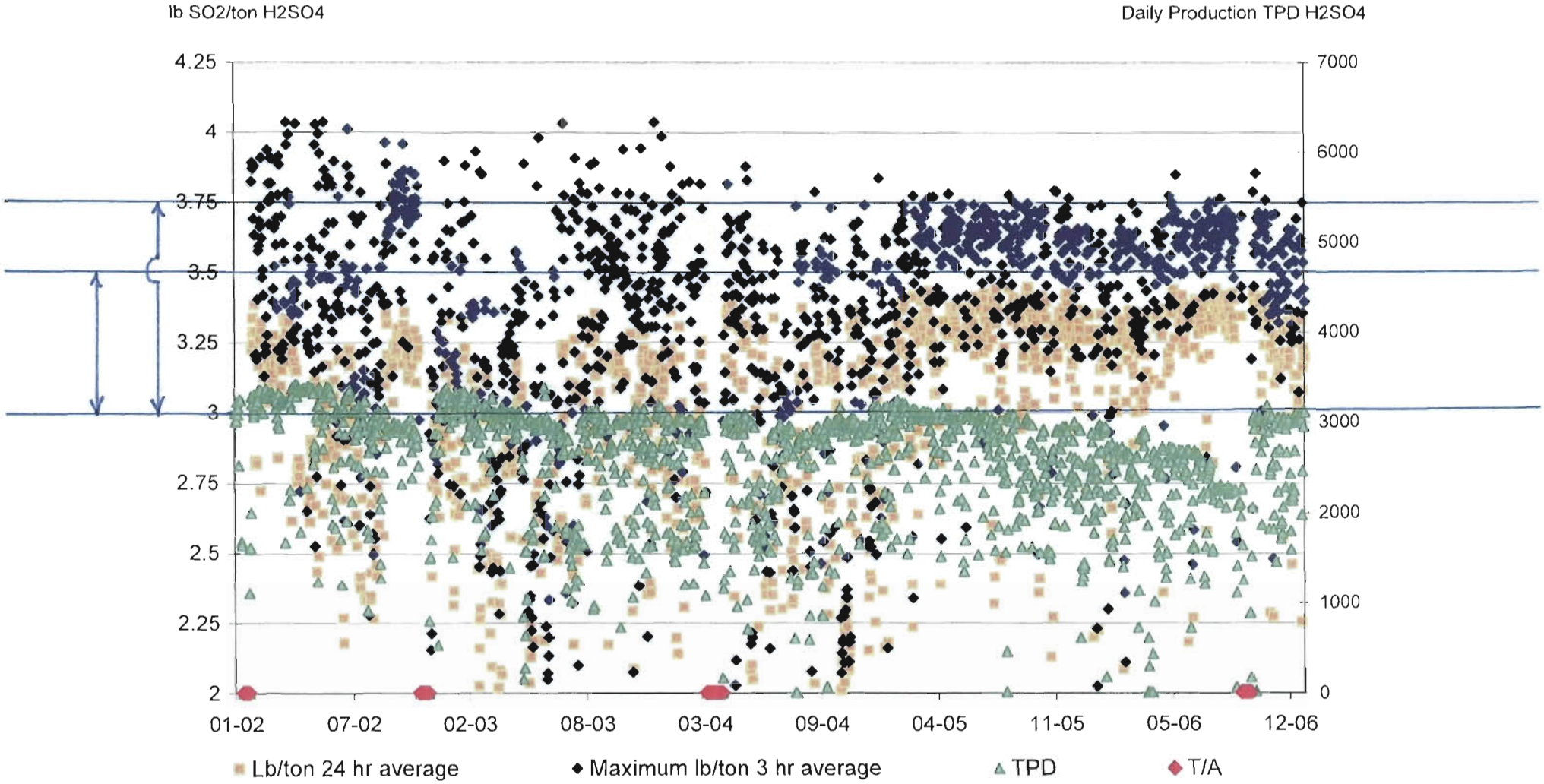
Notes:
TPD: tons per day.
T/A: turn around.

RIVERVIEW SAP 08
24-HR AVERAGE AND 3-HR MAXIMUM LB SO_2/TON H_2SO_4 AND DAILY H_2SO_4 PRODUCTION



Data Range lb SO_2/ton, 24-hour average	Data Range lb SO_2/ton, 3-hour average
2.75 - 3.5	3.0 - 4.0

RIVERVIEW SAP 09
24-HR AVERAGE AND 3-HR MAXIMUM LB SO_2/TON H_2SO_4 AND DAILY H_2SO_4 PRODUCTION



Data Range lb SO_2/ton, 24-hour average	Data Range lb SO_2/ton, 3-hour average
3.0 - 3.5	3.0 - 3.75

Draft Permit

PERMITTEE

Mosaic Fertilizer, LLC
8813 U.S. Highway 41 South
Riverview, FL 33569

Authorized Representative:
Mr. Alan Lulf, Plant Manager

Air Permit No. 0570008-055-AC
Expiration Date: June 30, 2014

Riverview Facility
BART Project

PLANT AND LOCATION

The Mosaic Fertilizer, LLC operates the Riverview Facility, which is a located at 8813 U.S. Highway 41 South, Riverview in Hillsborough County, Florida. The facility is an existing phosphate fertilizer manufacturer, which is identified by Standard Industrial Classification (SIC) code No. 2874.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). Pursuant to Rule 62-296.340, F.A.C., the permittee shall install the air pollution control equipment and/or implement the air pollution control measures that are specified by this permit as the Best Available Retrofit Technology (BART).

EFFECTIVE DATE

Unless otherwise specified by this permit, the BART-eligible sources (emissions units) shall comply with the conditions of this permit as expeditiously as practicable, but not later than December 31, 2013 (BART compliance deadline). [Rule 62-296.340(3)(b)2., F.A.C.]

Executed in Tallahassee, Florida

(Draft)

Joseph Kahn, Director
Division of Air Resource Management

Effective Date

JK/tlv/aal/sms
December 17, 2007

FACILITY DESCRIPTION

This facility consists of several industrial processes that convert insoluble rock containing phosphorus ore into a soluble form suitable for agricultural use. The processes consist of a molten sulfur storage & handling system, one material handling system, three (3) sulfuric acid plants, one (1) phosphoric acid plant (two trains), two (2) diammonium phosphate (DAP) plants, two (2) monoammonium phosphate (MAP) plants, one auxiliary boiler, and two (2) animal feed plants.

FACILITY REGULATORY CLASSIFICATIONS

- The facility is a major source of hazardous air pollutants (HAPs).
- The facility does not operate units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source pursuant to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

BART-ELIGIBLE EMISSIONS UNITS

This permitting action affects the following BART-eligible emissions units at the plant.

EU ID No.	Brief Description
-022	No. 3 MAP Plant
-023	No. 4 MAP Plant
-024	South Cooler
-063	Molten Sulfur Storage and Handling System -- Storage Tank Nos. 1, 2 and 3
-066	Molten Sulfur Storage and Handling System -- Storage Pit No. 7
-067	Molten Sulfur Storage and Handling System -- Storage Pit No. 8
-068	Molten Sulfur Storage and Handling System -- Storage Pit No. 9
-004	No. 7 Sulfuric Acid Plant
-005	No. 8 Sulfuric Acid Plant
-006	No. 9 Sulfuric Acid Plant

CONTENTS

1. Permitting Authority: The **Permitting Authority for this project is the Bureau of Air Regulation** in the Division of Air Resource Management of the Florida Department of Environmental Protection. The mailing address for the Bureau of Air Regulation is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the **Compliance Authority, the Environmental Protection Commission of Hillsborough County (EPCHC)**. The Compliance Authority's mailing address is:

   Environmental Protection Commission Hillsborough County
   3629 Queen Palm Drive
   Tampa, Florida 33619
   Telephone: 813/627-2600, Fax: 813/627-2660

3. Appendices: The following Appendices are attached as part of this permit: Appendix A (Citation Formats); Appendix B (General Conditions); Appendix C (Standard Testing Requirements); and, Appendix D (Memorandum of Understanding Regarding Best Operational Start-up Practices for Sulfuric Acid Plants).

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to the applicable provisions of: Chapter 403, F.S.; Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C.; and the applicable parts and subparts of Title 40, Code of Federal Regulations (CFR). Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.

5. Title V Permit: This permit authorizes specific modifications and/or new construction on the affected emissions units as well as initial operation to determine compliance with conditions of this permit. A Title V air operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V air operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after completing the required work and commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the **Permitting Authority, the Florida Department of Environmental Protection, Southwest District Office which is different from the Office cited in Condition No. 1** with copies to the Compliance Authority. The mailing address for the Southwest District Office is:

   Florida Department of Environmental Protection Southwest District
   13051 North Telecom Parkway
   Temple Terrace, FL 33637-0926
   Telephone: 813/632-7600, Fax:: 813/744-6458

   [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

6. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least 5 (five) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rule 62-213.440(1)(b)2., F.A.C.]

7. Annual Operating Report (AOR): The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(3), F.A.C.]

A. No. 3 MAP Plant, No. 4 MAP Plant, South Cooler (EU-022, -023, -024)

This subsection addresses the following affected emissions units.

EU ID No.	Emissions Unit Description
-022	No. 3 MAP Plant
-023	No. 4 MAP Plant
-024	South Cooler

PERMANENTLY SHUTDOWN EMISSIONS UNITS

1. Permanent Shutdown: The permittee permanently shutdown the Nos. 3 & 4 MAP Plant and the South Cooler (Emission unit identification numbers (EU ID Nos.) -022, -023 & -024) in September 2004. These emissions units are included in the recently issued Title V air operation permit, Permit Number 00570008-045-AV, effective May 31, 2006. As part of this BART determination, these units are not allowed to operate. These units were not included in the applicant's BART analysis. Since these units are deemed to be permanently shutdown, a BART determination was not required for these units. If any of these units resume operations a BART determination shall be performed as though they had not been shutdown. Other preconstruction review requirements may apply. [Rule 62-296.340, F.A.C. and Applicant's Request dated January 31, 2007]
2. Notification of Removal: The permittee shall notify the Department and the Compliance Authority upon the physical removal of these emissions units from on-site. [Rule 62-296.340, F.A.C. and Applicant's Request dated January 31, 2007]

B. Molten Sulfur Storage and Handling System -- Storage Tank Nos. 1, 2 & 3 (EU-063) and Storage Pit Nos. 7, 8, and 9 (EU-066, -067, -068)

This subsection addresses the following affected emissions units.

EU ID No.	Emissions Unit Description
-063	Molten Sulfur Storage and Handling System -- Storage Tank Nos. 1, 2 and 3
-066	Molten Sulfur Storage and Handling System -- Storage Pit No. 7
-067	Molten Sulfur Storage and Handling System -- Storage Pit No. 8
-068	Molten Sulfur Storage and Handling System -- Storage Pit No. 9
	Descriptions: The Molten Sulfur Storage and Handling System consists of storage tank nos. 1, 2 and 3 (capacity of 19,845 tons each), covered storage pit nos. 7, 8 and 9 (capacity of 127 tons, 127 tons, and 160 tons respectively), a ship unloading dock, truck loading station and associated transfer pumps and piping for storage and handling of molten sulfur. Molten sulfur from ships may be transferred to any combination of the three molten sulfur storage tanks at a combined maximum total of 2,277,081 tons of molten sulfur per any consecutive 12-month period. These tanks then transfer molten sulfur to the molten sulfur storage pits at the sulfuric acid plants and also to the molten sulfur truck loading station. The three molten sulfur storage pits are located at the three sulfuric acid plants. The pits receive molten sulfur from the molten sulfur storage tanks and/or by truck. Each of the storage pits may receive molten sulfur at a constant rate of 336 tons per hour. Each storage pit is allowed to transfer molten sulfur to each SAP at a maximum throughput rate of 492,361 tons per consecutive 12-month period. Initial construction of the three molten sulfur storage tanks and three molten sulfur storage pits was before August 7, 1977. *Air Pollution Control Systems and Measures*: A wet scrubber is currently used to control particulate matter (PM) emissions from the molten sulfur storage tank nos. 1, 2 and 3 as well as the truck loading station. Emissions from loading the three molten sulfur storage pits are uncontrolled, although they are equipped with covers. *Monitoring*: The scrubber pressure drop and liquid flow rate are recorded once every 8-hour shift. The condition of the covers on the three molten sulfur storage pits is checked at least once per 8-hour shift.

{Permitting notes: These emissions units are currently regulated under Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD); Rule 62-296.320, F.A.C., General Pollutant Emission Limiting Standards; and Rule 62-296.411, F.A.C., Sulfur Storage and Handling Facilities.}

B. Molten Sulfur Storage and Handling System -- Storage Tank Nos. 1, 2 & 3 (EU-063) and Storage Pit Nos. 7, 8, and 9 (EU-066, -067, -068)

Pursuant to Rule 62-296.340 (BART), F.A.C., the following standards represent the Best Available Retrofit Technology. These standards apply to each BART-eligible unit and are in addition to any other applicable standards.

1. The standards, testing, monitoring, recordkeeping and reporting requirements contained in Rule 62-296.411, F.A.C., *Sulfur Storage and Handling Facilities*, are deemed to be adequate for this BART determination

   a. The specific applicable requirements from Rule 62-296.411, F.A.C., *Sulfur Storage and Handling Facilities*, are part of this permit. The specific parts of the state rule applicable to the molten sulfur storage tanks and pits are: Rule 62-296.411(1) & 62-296.411(4), F.A.C. Rule 62-296.411(4), F.A.C., provides alternate emission control methods and therefore are not included.

   The following specific conditions are from Rule 62-296.411(1), F.A.C. and the original numbering is maintained:
   (1) Molten Sulfur Storage and Handling Facilities - All molten sulfur facilities shall employ, as a minimum, the following practices to minimize the emission of sulfur particulate matter into the atmosphere. Other relevant detailed requirements shall be specified, as necessary, in the permits for the facility.
   (a) All molten sulfur transfer shall be through enclosed piping systems where feasible and practical. In user facilities, molten sulfur may be transferred by covered trench or a movable spout which is positioned over a receiving pit. Contact surfaces between movable unloading arms and stationary pipes shall seat effectively around the entire circumference to minimize spillage.
   (b) All areas surrounding points where molten sulfur pipes are routinely disconnected and areas where molten sulfur is transferred to trucks or railcars shall be paved and curbed within 20 feet of the point of disconnection or transfer to contain any spilled molten sulfur, or shall be provided with noncorrosible drip pans or other secondary containment, positioned to collect spills, that are adequate to contain amounts of sulfur that may escape during routine disconnection, reconnection or operation of the piping system.
   (c) <intentionally left blank>
   (d) All spilled molten sulfur shall be collected and properly disposed of whenever the containment area is filled to one-half its containment capacity, or monthly, whichever is more frequent. Spills of molten sulfur outside of a containment area, or where subject to vehicular traffic, shall be collected and disposed of as soon as possible, but no later than 24 hours after the spill occurs. Drip pans or other secondary containment shall be cleaned as needed to prevent exceedance of capacity, but at least weekly.
   (e) All vent surfaces shall be cleaned monthly to remove captured particles.
   (f) All owners and operators of molten sulfur storage and handling facilities shall maintain records of spills outside of containment areas and of collection and disposal of spilled sulfur. Such records shall be retained for a minimum of two years and shall be available for inspection by the Department upon request.
   (g) <intentionally left blank>
   (h) Operational procedures approved by the Department shall be established to minimize spills from any movable loading arm or pipe upon disconnection, reconnection or operation.
   (i) <intentionally left blank>
   (j) <intentionally left blank>
   [Rule 62-296.411(1), F.A.C.]

   b. The additional requirements as specified in the current Title V permit, Permit Number 0570008-045-AV are also a part of this permit.

   [Rule 62-296.340 (BART), F.A.C. and Proposed by the Applicant in the Application]

B. Molten Sulfur Storage and Handling System -- Storage Tank Nos. 1, 2 & 3 (EU-063) and Storage Pit Nos. 7, 8, and 9 (EU-066, -067, -068)

AIR POLLUTION CONTROL TECHNOLOGIES & MEASURES

2. PM/PM_{10} and SO_2 Controls: This BART determination does not require new, modified or additional air pollution control systems or measures. To control emissions of particulate matter (PM/PM_{10}) and SO_2 from the three molten sulfur storage tanks, the permittee shall operate and maintain a wet scrubber. [Rule 62-296.340 (BART), F.A.C. and Proposed by the Applicant in the Application]

3. PM/PM_{10} and SO_2 Controls: This BART determination does not require new, modified or additional air pollution control systems or measures. To control emissions of particulate matter (PM/PM_{10}) and SO_2 from the three molten sulfur storage pits, the permittee shall maintain covers on the three molten sulfur storage pits. [Rule 62-296.340 (BART), F.A.C. and Proposed by the Applicant in the Application]

4. Circumvention: The permittee shall not circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly. [Rule 62-210.650, F.A.C.]

EMISSION STANDARDS & LIMITATIONS

5. PM/PM_{10} Emissions Standard: Emissions of particulate matter with a mean diameter of 10 microns or less (PM_{10}) from the wet scrubber's stack shall not exceed 0.03 gr/dscf and 0.28 pounds per hour based on the average of three test runs as determined by EPA Method 201A. {The 0.03 gr/dscf standard is a current existing standard. The equivalent TPY value based on 0.28 pounds per hour is 1.23 tons per year.} [Rule 62-296.340 (BART), F.A.C. and Proposed by Applicant in the Additional Information Response dated July 9, 2007]

6. PM/PM_{10} - Opacity (VE) Standard: As determined by EPA Method 9, visible emissions from the molten sulfur storage tanks and molten sulfur storage pits shall not exceed 10% opacity based on a 6-minute average. {The 10% opacity standard is a current existing standard from Rule 62-296.411(1)(g), F.A.C..} [Rule 62-296.340 (BART), F.A.C.]

EXCESS EMISSIONS

7. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

8. Excess Emissions Allowed: Unless otherwise specified by permit, excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]

9. Excess Emissions Notification: In case of excess emissions resulting from malfunctions, the permittee shall notify the Compliance Authority in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]

OPERATION & MAINTENANCE PLAN

10. Operation & Maintenance (O&M) Plan for BART Controls: The permittee is required to comply with an O&M Plan for the wet scrubber. The permittee shall submit the O&M Plan with the Title V air operation permit request as required by Section 2., condition 5. of this permit. A requirement for the permittee to

follow the O&M Plan shall be included in the Title V air operation permit. [Rule 62-296.340(3)(b)2. (BART), F.A.C.]

MONITORING REQUIREMENTS

11. Monitoring: The permittee shall monitor and record the scrubber's pressure drop and liquid flow rate at least once every 8-hour shift as per specific condition J.9. of the current Title V permit, Permit Number 0570008-045-AV. [Rules 62-296.340 (BART) and 62-4.070(3), F.A.C.]

12. Monitoring: The permittee shall check and record the condition of the covers on the three molten sulfur storage pits at least once per 8-hour shift. [Rules 62-296.340 (BART) and 62-4.070(3), F.A.C.]

EMISSIONS TESTING

13. Test Methods: The following reference methods (or more recent versions) shall be used to conduct any required emissions tests.

Method	Description of Method and Comments
1 - 4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
5	Determination of PM Emissions from Stationary Sources
9	Visual Determination of Opacity from Stationary Sources
201A	Determination of PM with a Mean Diameter of 10 Microns or Less (PM_{10})

EPA Methods 1, 2, 3, 4, and 19 shall be used as necessary to support the other test methods. The above methods are described in 40 CFR 60, Appendix A, which is adopted by reference in Rule 62-204.800, F.A.C. No other methods shall be used without prior written approval from the Permitting Authority. [Rules 62-204.800 and 62-297.100, F.A.C.; and 40 CFR 60, Appendix A]

14. Standard Testing Requirements: All required emissions tests shall be conducted in accordance with the requirements specified in Appendix C (Standard Testing Requirements) of this permit. [Rules 62-204.800 and 62-297.100, F.A.C.; and 40 CFR 60, Appendix A]

15. Compliance Test Schedule: In accordance with the following schedule, the permittee shall have stack tests conducted to demonstrate compliance with the emissions standards specified in this permit.

    a. *Annual Tests*: During each federal fiscal year (October 1st to September 30th), tests shall be conducted for VE. [Rules 62-296.340 (BART) and 62-297.310(7)(a)4, F.A.C.]

    b. *Tests Prior to Renewal*: Within the 12-month period prior to renewing the Title V air operation permit, tests shall be conducted for PM_{10} emissions from the wet scrubber's stack. This represents a testing frequency of no less than every 5 years for PM_{10} emissions. [Rules 62-296.340 (BART) and 62-297.310(7)(a)3, F.A.C.]

RECORDS & REPORTS

16. Records: The permittee shall maintain on-site records of the scrubber pressure drop and liquid flow rate recorded as required by specific condition 11. in this section. [Rules 62-296.340 (BART) and 62-4.070(3), F.A.C.]

17. Records: The permittee shall maintain on-site records of the condition of the covers on the three molten sulfur storage pits as required by specific condition 12. in this section. [Rules 62-296.340 (BART) and 62-

4.070(3), F.A.C.]

18. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]

C. Nos. 7, 8 and 9 Sulfuric Acid Plants (EU-004, -005, -006)

This subsection addresses the following affected emissions units.

EU ID No.	Emissions Unit Description
-004	No. 7 Sulfuric Acid Plant
-005	No. 8 Sulfuric Acid Plant
-006	No. 9 Sulfuric Acid Plant
	Descriptions:
	Sulfuric Acid Plants (SAPs) No. 7, No. 8, and No. 9 have a design capacity of 3,200 TPD, 2,700 TPD, and 3,400 TPD of 100% sulfuric acid, respectively. Each SAP recovers a portion of the waste heat (steam) for process use and to generate electricity. Waste heat recovery reduces plume visibility. There are two electrical generators at each SAP, rated at 35 kilowatts (kW) and 36 KW for a total of 71 kW. These plants are sulfur burning, double conversion, double absorption plants of Leonard-Monsanto design. Sulfur is burned with dried atmosphere oxygen to produce sulfur dioxide (SO_2). The sulfur dioxide is catalytically oxidized to sulfur trioxide (SO_3) over a catalyst bed. The sulfur trioxide is then absorbed in sulfuric acid. The remaining sulfur dioxide, not previously oxidized, is passed over a final converter bed of catalyst and the sulfur trioxide produced is then absorbed in sulfuric acid. SAP Nos. 7, 8 and 9 began operating in 1961, 1965, 1974, respectively.
	Air pollution control systems and measures: The control of SO_2 emissions is by the process itself primarily. Currently, a double conversion, double absorption plant efficiently converts SO_2 to SO_3 then SO_3 reacts in a mixture of water and sulfuric acid to produce sulfuric acid. In a double absorption system, the conversion efficiency of from SO_2 to SO_3 is at least 99.7%. All three plants use a vanadium catalyst in the converters except that in the 4th pass of the SAP Nos. 8 and 9 a cesium promoted catalyst is used. The catalyst bed volumes in the No. 7 SAP are 112,000 liters in the 1st pass, 154,000 liters in the 2nd pass, 154,000 liters in the 3rd pass, and 208,000 liters in the 4th pass. Sulfuric acid mist (SAM) emissions are controlled by the use of high efficiency acid mist eliminators (demister pads) or impaction-type glass fiber collection devices. Best operational practices are followed to minimize excess emissions during startup and shutdown.
	Monitors: Each SAP is equipped with an existing SO_2 continuous emissions monitoring system (CEMS). The SO_2 CEMS have been required by the circa 1977 NSPS. The CEMS installed for SAP No. 7 is an Ametek Model 4600B. SAP Nos. 8 and 9 each have an Ametek/Dupont Model 40/460 CEMS.
	Stack Parameters: Emissions not absorbed by each double absorption system are vented through each individual SAP's 150 foot stack. The stack exhaust gas characteristics for SAP Nos. 8 and 9 are: exhaust gas temperatures of 170, 150, & 152 °F; exhaust gas flow rates 122,000, 105,000, & 149,000 acfm; and, stack diameters of 7.5, 8.0, & 9.0 feet.

{Permitting notes: The SAPs are currently regulated under NSPS 40 CFR 60, Subpart H, Standards of Performance for Sulfuric Acid Plants, adopted and incorporated by reference in Rule 62-204.800(7)(b)10., F.A.C.; Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD), PSD-FL-209 (AC29-241660), PSD-FL-250 (0570008-025-AC), PSD-FL-315 (0570008-036-AC); Rule 62-296.402, F.A.C., Sulfuric Acid Plants; and, Rule 62-296.320, F.A.C., General Pollutant Emission Limiting Standards.}

Pursuant to Rule 62-296.340 (BART), F.A.C., the following standards represent the Best Available Retrofit Technology. These standards apply to each BART-eligible unit and are in addition to any other applicable standards.

AIR POLLUTION CONTROL TECHNOLOGIES & MEASURES

1. SO_2, PM/PM_{10} & VE Controls: This BART determination does not require new, modified or additional air pollution control systems for SO_2, PM/PM_{10} & VE. To control emissions of sulfur dioxide (SO_2) from each SAP, the permittee shall continue the use of the existing double absorption system technology with a vanadium catalyst in the converters and the use of good combustion practices & best operational practices to minimize excess emissions during startup and shutdown. The SAP Nos. 8 and 9 shall continue the use of a cesium promoted vanadium catalyst in the final converter bed. PM/PM_{10} and visible emissions are minimized by controlling sulfuric acid mist (SAM) emissions. To control emissions of SAM, the permittee shall continue the use of the existing packed-fiber mist eliminators or demister pads to remove SAM. PM/PM_{10} and visible emissions are minimized with these control technologies and techniques. [Rule 62-296.340 (BART), F.A.C.; Rule 62-210.700(1), F.A.C.; and, Proposed by the Applicant in the Application]

2. NOx Controls: This BART determination does not require new, modified or additional air pollution control systems for NOx. To control emissions of nitrogen oxides (NOx) from each SAP, the permittee shall continue the use of the existing combustion technology and the use of good combustion practices & best operational practices to minimize excess emissions during startup and shutdown. [Rule 62-296.340 (BART), F.A.C.; Rule 62-210.700(1), F.A.C.; and, Proposed by the Applicant in the Application]

3. Circumvention: The permittee shall not circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly. [Rule 62-210.650, F.A.C.]

EMISSION STANDARDS & LIMITATIONS

4. SO_2 Emission Standards: Emissions of SO_2 shall not exceed 3.5 lb SO_2/ton 100% H_2SO_4 produced based on a 24-hour rolling average as determined by CEMS data. Emissions of SO_2 shall not exceed 467 pounds per hour for No. 7 SAP, 393.8 pounds per hour for No. 8 SAP, and 495.8 pounds per hour for No. 9 SAP based on a 24-hour rolling average as determined by CEMS data. The equivalent tons per year (TPY) values for SAP Nos. 7, 8, and 9 are: 2,044; 1,724.6; and, 2,171.8 TPY respectively. {These numerical standards are current existing standards except that this permit requires CEMS to be used to demonstrate compliance on a continuous basis on a 24-hour rolling average.} [Rule 62-296.340 (BART), F.A.C.]

5. SO_2 Continuous Emissions Monitoring System (CEMS): This BART determination requires an SO_2 CEMS to be used to demonstrate continuous compliance with the SO_2 emission standards and limitations specified in this section.

   a. In accordance with the NSPS (40 CFR 60, Subpart H) requirements for sulfuric acid plants, the permittee shall continue to properly calibrate, maintain, and operate a CEMS to measure and record emissions of SO_2. In accordance with PSD-FL-250 & PSD-FL-315 the permittee shall continue to use SO_2 CEMS data to demonstrate compliance.

   b. A CEMS shall be properly calibrated, maintained, and operated to comply with: 40 CFR 60 Subpart A, General Provisions; 40 CFR 60 Appendix B, Performance Specification 2; and, 40 CFR 60, Appendix F, Quality Assurance Procedures for Gas CEMS Used for Compliance Determination. The operating CEMS shall be certified as complying with these provisions. The SO_2 CEMS data averaging must be changed from a 24-hour daily (block) average to a 24-hour rolling average by September 30, 2013.

c. The emissions data collected with the certified CEMS shall be used to demonstrate continuous compliance with the standards and limitations specified in this section.

[Rules 62-296.340 (BART), 62-4.070(3) (Reasonable Assurance), and 62-213.440(1) (Assurance of Compliance), F.A.C.]

6. PM/PM_{10} - Opacity (VE) Standard: As determined by EPA Method 9, visible emissions from the SAPs shall not exceed 10% opacity based on a 6-minute average. {The 10% opacity standard is a current existing standard.} [Rule 62-296.340 (BART), F.A.C.]

7. NO_X Emission Standards: This BART determination specifies a new NO_X emission standard. Emissions of NO_X expressed as nitrogen dioxide (NO_2) from each SAP shall not exceed 0.12 lb/ton 100% sulfuric acid (H_2SO_4) produced based on a 3-hour average as determined by stack test. Emissions of NO_X expressed as nitrogen dioxide (NO_2) from SAP Nos. 7, 8, and 9 shall not exceed 16.0, 13.5, and 17.0 pounds per hour based on a 3-hour average as determined by stack test. The equivalent tons per year (TPY) values for SAP Nos. 7, 8, and 9 are 70.1, 59.1, and 74.4, respectively. [Rule 62-296.340 (BART), F.A.C. and Applicant Response dated July 9, 2007]

EXCESS EMISSIONS

8. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

9. Excess Emissions Allowed: Unless otherwise specified by permit, excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]

10. Excess Emissions Notification: In case of excess emissions resulting from malfunctions, the permittee shall notify the Compliance Authority in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]

11. Best Operational Practices to Minimize Excess Emissions:

a. The permittee shall follow the best operational practices to minimize excess emissions during startup and shutdown as described in the most recent Title V permit application.

b. Best operational practices to minimize excess SO_2 and SO_3 emissions during startup are governed by this condition. The permittee shall follow the best operational practices to minimize excess emissions during startup contained within the attached Appendix D - Memorandum of Understanding Regarding Best Operational Start-up Practices for Sulfuric Acid Plants initially executed on October 25, 1989.

[Rule 62-296.340 (BART), F.A.C.; Rule 62-210.700(1), F.A.C.; and, Proposed by the Applicant in the Application]

12. Best Operational Practices to Minimize Leaks of SO_2 and SO_3, or Other Fugitive Process Emissions: Best operational practices to minimize leaks of SO_2 and SO_3, or other fugitive process emissions shall be adhered to and shall include regular inspections and the prompt repair or correction of any leaks or other fugitive emissions. [Rules 62-4.070(3) and 62-296.320, F.A.C.]

EMISSIONS TESTING

13. Test Methods: The following reference methods (or more recent versions) shall be used to conduct any required emissions tests.

Method	Description of Method and Comments
1 - 4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
7E	Determination of NO_X Emissions from Stationary Sources
8	Determination of SAM/SO_2 Emissions from Stationary Sources
9	Visual Determination of Opacity from Stationary Sources

EPA Methods 1, 2, 3, 4, and 19 shall be used as necessary to support the other test methods. The above methods are described in 40 CFR 60, Appendix A, which is adopted by reference in Rule 62-204.800, F.A.C. No other methods shall be used without prior written approval from the Permitting Authority. [Rules 62-204.800 and 62-297.100, F.A.C.; and 40 CFR 60, Appendix A]

14. Standard Testing Requirements: All required emissions tests shall be conducted in accordance with the requirements specified in Appendix C (Standard Testing Requirements) of this permit. [Rules 62-204.800 and 62-297.100, F.A.C.; and 40 CFR 60, Appendix A]

15. Compliance Test Schedule: In accordance with the following schedule, the permittee shall have stack tests conducted to demonstrate compliance with the emissions standards specified in this permit.

    a. *Initial Tests*: On or before April 1, 2013, initial tests shall be conducted for NO_X emissions {October 1, 2013 - 6 months. October 1, 2013 being the start of the next federal fiscal year in which the compliance deadline of December 13, 2013 falls within.} The initial compliance test report for NOx shall be submitted within 45 days of completion of testing. [Rules 62-296.340 (BART) and 62-297.310(7)(a)1, F.A.C.]

    b. *Annual Tests*: During each federal fiscal year (October 1st to September 30th), tests shall be conducted for VE. [Rules 62-296.340 (BART) and 62-297.310(7)(a)4, F.A.C.]

    c. *Tests Prior to Renewal*: Within the 12-month period prior to renewing the Title V air operation permit, tests shall be conducted for NO_X emissions. This represents a testing frequency of no less than every 5 years for NO_X emissions. [Rules 62-296.340 (BART) and 62-297.310(7)(a)3, F.A.C.]

    {Note: When SO_2 CEMS are required to demonstrate compliance on a continuous basis, no initial or annual compliance tests are necessary.}

RECORDS & REPORTS

16. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]

17. Quarterly Reporting Requirements: The owners or operators of facilities for which monitoring is required shall submit to the Department a written report of emissions in excess of emission limiting standards as set forth in Rule 62-296.402, F.A.C., for each calendar quarter. The nature and cause of the excessive emissions shall be explained. This report does not relieve the owner or operator of the legal liability for violations. All

recorded data shall be maintained on file by the Source for a period of 5 (five) years. {The permittee is required to use SO_2 continuous emissions monitoring systems for continuous compliance demonstrations.} [Rules 62-296.402(5) and 62-213.440(1)(b)2., F.A.C.]

18. SO_2 CEMS Conversion Plan: The permittee shall submit a CEMS Conversion Plan with milestones to convert to a CEMS complying with specific condition 5. of this permit. The Plan shall include at a minimum the necessary actions and corresponding scheduled due dates to complete those actions to meet specific condition 5.b.

    a. The permittee shall submit status reports regarding the milestones in the CEMS Conversion Plan to the Department and to the Compliance Authority, no less than annually.

    b. The permittee shall complete the CEMS conversion no later than 3 months prior to the compliance deadline sated in this permit September 30, 2013 {December 31, 2013 - 3 months}.

    [Rules 62-296.340 (BART), 62-4.070(3) (Reasonable Assurance), and 62-213.440(1) (Assurance of Compliance), F.A.C.]

SECTION 4. APPENDICES

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SECTION 4. APPENDIX A
CITATION FORMATS

The following examples illustrate the format used in the permit to identify applicable permitting actions and regulations.

REFERENCES TO PREVIOUS PERMITTING ACTIONS

Old Permit Numbers

Example: Permit No. AC50-123456 or Air Permit No. AO50-123456

Where: "AC" identifies the permit as an Air Construction Permit
"AO" identifies the permit as an Air Operation Permit
"123456" identifies the specific permit project number

New Permit Numbers

Example: Permit Nos. 099-2222-001-AC, 099-2222-001-AO, or 099-2222-001-AV

Where: "099" represents the specific county ID number in which the project is located
"2222" represents the specific facility ID number
"001"identifies the specific permit project
"AC" identifies the permit as an air construction permit
"AO" identifies the permit as a minor source air operation permit
"AV" identifies the permit as a Title V Major Source Air Operation Permit

PSD Permit Numbers

Example: Permit No. PSD-FL-317

Where: "PSD" means issued pursuant to the Prevention of Significant Deterioration of Air Quality
"FL" means that the permit was issued by the State of Florida
"317" identifies the specific permit project

RULE CITATION FORMATS

Florida Administrative Code (F.A.C.)

Example: [Rule 62-213.205, F.A.C.]

Means: Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

Code of Federal Regulations (CFR)

Example: [40 CFR 60.7]

Means: Title 40, Part 60, Section 7

GENERAL CONDITIONS

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
   a. Have access to and copy and records that must be kept under the conditions of the permit;
   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time may depend on the nature of the concern being investigated.
8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
   a. A description of and cause of non-compliance; and
   b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
12. This permit or a copy thereof shall be kept at the work site of the permitted activity.
13. This permit also constitutes:
    a. Determination of Best Available Control Technology (Not Applicable);
    b. Determination of Prevention of Significant Deterioration (Not Applicable); and
    c. Compliance with New Source Performance Standards (Not Applicable).
14. The permittee shall comply with the following:
    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
    b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
    c. Records of monitoring information shall include:
        1) The date, exact place, and time of sampling or measurements;
        2) The person responsible for performing the sampling or measurements;
        3) The dates analyses were performed;
        4) The person responsible for performing the analyses;
        5) The analytical techniques or methods used; and
        6) The results of such analyses.
15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

Unless otherwise specified by permit, all emissions units that require testing are subject to the following conditions as applicable.

1. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]
2. Operating Rate During Testing: Unless otherwise stated in the applicable emission limiting standard rule, testing of emissions shall be conducted with the emissions unit operating at permitted capacity as defined below. If it is impracticable to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity.
   a. *Combustion Turbines.* (Reserved)
   b. *All Other Sources.* Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit.

   [Rule 62-297.310(2), F.A.C.]
3. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]
4. Applicable Test Procedures:
   a. *Required Sampling Time.*
      1) Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes.
      2) Opacity Compliance Tests. When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:
         a) For batch, cyclical processes, or other operations which are normally completed within less than the minimum observation period and do not recur within that time, the period of observation

shall be equal to the duration of the batch cycle or operation completion time.

b) The observation period for special opacity tests that are conducted to provide data to establish a surrogate standard pursuant to Rule 62-297.310(5)(k), F.A.C., Waiver of Compliance Test Requirements, shall be established as necessary to properly establish the relationship between a proposed surrogate standard and an existing mass emission limiting standard.

c) The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.

b. *Minimum Sample Volume.* Unless otherwise specified in the applicable rule, the minimum sample volume per run shall be 25 dry standard cubic feet.

c. *Required Flow Rate Range.* For EPA Method 5 particulate sampling, acid mist/sulfur dioxide, and fluoride sampling which uses Greenburg Smith type impingers, the sampling nozzle and sampling time shall be selected such that the average sampling rate will be between 0.5 and 1.0 actual cubic feet per minute, and the required minimum sampling volume will be obtained.

d. *Calibration of Sampling Equipment.* Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1.

e. *Allowed Modification to EPA Method 5.* When EPA Method 5 is required, the following modification is allowed: the heated filter may be separated from the impingers by a flexible tube.

TABLE 297.310-1 CALIBRATION SCHEDULE

Item	Minimum Frequency	Reference Instrument	Tolerence
Liquid in glass thermometer	Annually	ASTM Hg in glass ref. thermometer or equivalent or thermometric points	± 2%
Bimetallic thermometer	Quarterly	Calib. liq. in glass	5° F
Thermocouple	Annually	ASTM Hg in glass ref. thermometer, NBS calibrated reference and potentiometer	5° F
Barometer	Monthly	Hg barometer or NOAA station	± 1% scale
Pitot Tube	When required or when damaged	By construction or measurements in wind tunnel D greater than 16" and standard pitot tube	See EPA Method 2, Fig. 2-2 & 2-3
Probe Nozzles	Before each test or when nicked, dented, or corroded	Micrometer	± 0.001" mean of at least three readings; maximum deviation between readings, 0.004"
Dry Gas Meter and Orifice Meter	1. Full Scale: When received, when 5% change observed, annually	Spirometer or calibrated wet test or dry gas test meter	2%
	2. One Point: Semiannually		
	3. Check after each test series	Comparison check	5%

[Rule 62-297.310(4), F.A.C.]

5. Determination of Process Variables:

   a. *Required Equipment.* The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

   b. *Accuracy of Equipment.* Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

   [Rule 62-297.310(5), F.A.C.]

6. Required Stack Sampling Facilities: Sampling facilities include sampling ports, work platforms, access to work platforms, electrical power, and sampling equipment support. All stack sampling facilities must meet any Occupational Safety and Health Administration (OSHA) Safety and Health Standards described in 29 CFR Part 1910, Subparts D and E.

   a. *Permanent Test Facilities.* The owner or operator of an emissions unit for which a compliance test, other than a visible emissions test, is required on at least an annual basis, shall install and maintain permanent stack sampling facilities.

   b. *Temporary Test Facilities.* The owner or operator of an emissions unit that is not required to conduct a compliance test on at least an annual basis may use permanent or temporary stack sampling facilities. If the owner chooses to use temporary sampling facilities on an emissions unit, and the Department elects to test the unit, such temporary facilities shall be installed on the emissions unit within 5 days of a request by the Department and remain on the emissions unit until the test is completed.

   c. *Sampling Ports.*

      1) All sampling ports shall have a minimum inside diameter of 3 inches.

      2) The ports shall be capable of being sealed when not in use.

      3) The sampling ports shall be located in the stack at least 2 stack diameters or equivalent diameters downstream and at least 0.5 stack diameter or equivalent diameter upstream from any fan, bend, constriction or other flow disturbance.

      4) For emissions units for which a complete application to construct has been filed prior to December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 15 feet or less. For stacks with a larger diameter, four sampling ports, each 90 degrees apart, shall be installed. For emissions units for which a complete application to construct is filed on or after December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 10 feet or less. For stacks with larger diameters, four sampling ports, each 90 degrees apart, shall be installed. On horizontal circular ducts, the ports shall be located so that the probe can enter the stack vertically, horizontally or at a 45 degree angle.

      5) On rectangular ducts, the cross sectional area shall be divided into the number of equal areas in accordance with EPA Method 1. Sampling ports shall be provided which allow access to each sampling point. The ports shall be located so that the probe can be inserted perpendicular to the gas flow.

d. *Work Platforms.*

1) Minimum size of the working platform shall be 24 square feet in area. Platforms shall be at least 3 feet wide.

2) On circular stacks with 2 sampling ports, the platform shall extend at least 110 degrees around the stack.

3) On circular stacks with more than two sampling ports, the work platform shall extend 360 degrees around the stack.

4) All platforms shall be equipped with an adequate safety rail (ropes are not acceptable), toeboard, and hinged floor-opening cover if ladder access is used to reach the platform. The safety rail directly in line with the sampling ports shall be removable so that no obstruction exists in an area 14 inches below each sample port and 6 inches on either side of the sampling port.

e. *Access to Work Platform.*

1) Ladders to the work platform exceeding 15 feet in length shall have safety cages or fall arresters with a minimum of 3 compatible safety belts available for use by sampling personnel.

2) Walkways over free-fall areas shall be equipped with safety rails and toeboards.

f. *Electrical Power.*

1) A minimum of two 120-volt AC, 20-amp outlets shall be provided at the sampling platform within 20 feet of each sampling port.

2) If extension cords are used to provide the electrical power, they shall be kept on the plant's property and be available immediately upon request by sampling personnel.

g. *Sampling Equipment Support.*

1) A three-quarter inch eyebolt and an angle bracket shall be attached directly above each port on vertical stacks and above each row of sampling ports on the sides of horizontal ducts.

a) The bracket shall be a standard 3 inch × 3 inch × one-quarter inch equal-legs bracket which is 1 and one-half inches wide. A hole that is one-half inch in diameter shall be drilled through the exact center of the horizontal portion of the bracket. The horizontal portion of the bracket shall be located 14 inches above the centerline of the sampling port.

b) A three-eighth inch bolt which protrudes 2 inches from the stack may be substituted for the required bracket. The bolt shall be located 15 and one-half inches above the centerline of the sampling port.

c) The three-quarter inch eyebolt shall be capable of supporting a 500 pound working load. For stacks that are less than 12 feet in diameter, the eyebolt shall be located 48 inches above the horizontal portion of the angle bracket. For stacks that are greater than or equal to 12 feet in diameter, the eyebolt shall be located 60 inches above the horizontal portion of the angle bracket. If the eyebolt is more than 120 inches above the platform, a length of chain shall be attached to it to bring the free end of the chain to within safe reach from the platform.

2) A complete monorail or dualrail arrangement may be substituted for the eyebolt and bracket.

3) When the sample ports are located in the top of a horizontal duct, a frame shall be provided above the port to allow the sample probe to be secured during the test.

7. Frequency of Compliance Tests: The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required.

   a. General Compliance Testing.

      1) The owner or operator of a new or modified emissions unit that is subject to an emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining an operation permit for such emissions unit.

      2) For excess emission limitations for particulate matter specified in Rule 62-210.700, F.A.C., a compliance test shall be conducted annually while the emissions unit is operating under soot blowing conditions in each federal fiscal year during which soot blowing is part of normal emissions unit operation, except that such test shall not be required in any federal fiscal year in which a fossil fuel steam generator does not burn liquid and/or solid fuel for more than 400 hours other than during startup.

      3) The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to sub-subparagraph 62-210.300(2)(a)3.b., c., or d., F.A.C., the Department shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:

         a) Did not operate; or

         b) In the case of a fuel burning emissions unit, burned liquid and/or solid fuel for a total of no more than 400 hours,

      4) During each federal fiscal year (October 1 – September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:

         a) Visible emissions, if there is an applicable standard;

         b) Each of the following pollutants, if there is an applicable standard, and if the emissions unit emits or has the potential to emit: 5 tons per year or more of lead or lead compounds measured as elemental lead; 30 tons per year or more of acrylonitrile; or 100 tons per year or more of any other regulated air pollutant; and

         c) Each NESHAP pollutant, if there is an applicable emission standard.

      5) An annual compliance test for particulate matter emissions shall not be required for any fuel burning emissions unit that, in a federal fiscal year, does not burn liquid and/or solid fuel, other than during startup, for a total of more than 400 hours.

      6) For fossil fuel steam generators on a semi-annual particulate matter emission compliance testing schedule, a compliance test shall not be required for any six-month period in which liquid and/or solid fuel is not burned for more than 200 hours other than during startup.

      7) For emissions units electing to conduct particulate matter emission compliance testing quarterly pursuant to paragraph 62-296.405(2)(a), F.A.C., a compliance test shall not be required for any quarter in which liquid and/or solid fuel is not burned for more than 100 hours other than during startup.

      8) Any combustion turbine that does not operate for more than 400 hours per year shall conduct a

visible emissions compliance test once per each five-year period, coinciding with the term of its air operation permit.

9) The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.

10) An annual compliance test conducted for visible emissions shall not be required for units exempted from air permitting pursuant to subsection 62-210.300(3), F.A.C.; units determined to be insignificant pursuant to subparagraph 62-213.300(2)(a)1., F.A.C., or paragraph 62-213.430(6)(b), F.A.C.; or units permitted under the General Permit provisions in paragraph 62-210.300(4)(a) or Rule 62-213.300, F.A.C., unless the general permit specifically requires such testing.

b. Special Compliance Tests. When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department.

8. Test Reports:

a. The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test.

b. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed.

c. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

1) The type, location, and designation of the emissions unit tested.

2) The facility at which the emissions unit is located.

3) The owner or operator of the emissions unit.

4) The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.

5) The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.

6) The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.

7) A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.

8) The date, starting time and duration of each sampling run.

9) The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.

10) The number of points sampled and configuration and location of the sampling plane.

11) For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.

12) The type, manufacturer and configuration of the sampling equipment used.

13) Data related to the required calibration of the test equipment.

14) Data on the identification, processing and weights of all filters used.

15) Data on the types and amounts of any chemical solutions used.

16) Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.

17) The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.

18) All measured and calculated data required to be determined by each applicable test procedure for each run.

19) The detailed calculations for one run that relate the collected data to the calculated emission rate.

20) The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit plus the test result in the same form and unit of measure.

21) A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

9. Stack: The terms stack and duct are used interchangeably in this rule.

[Rule 62-297.310(9), F.A.C.]

MEMORANDUM OF UNDERSTANDING REGARDING BEST OPERATIONAL START-UP PRACTICES FOR SULFURIC ACID PLANTS

These Sulfuric Acid Plant Best Operation Start-Up Practices will be made available in the control room at all times.

1. Only one sulfuric acid plant at a facility should be started up and burning sulfur at a time, There are times when it will be acceptable for more than one sulfuric acid plant to be in the start-up mode at the same time, provided the following condition is met. It is not acceptable to initiate sulfur burning at one sulfuric acid plant when another plant at the same facility is emitting SO_2 at a rate in excess of the emission limits imposed by the permit or rule, as determined by the CEMs emission rates for the immediately preceding 20 minutes.

2. A plant start-up must be at the lowest practicable operating rate, not to exceed 70 percent of the designated operating rate, until the SO_2 monitor indicates compliance, Because production rate is difficult to measure during start-up, if a more appropriate indicator (such as blower pressure, furnace temperature, gas strength, blower speed, number of sulfur guns operating, etc.) can be documented, tested and validated, the Department will accept this in lieu of directly documenting the operating rate. Implementation requires the development of a suitable list of surrogate parameters to demonstrate and document the reduced operating rate on a plant-by-plant basis. Documentation that the plant is conducting start-up at the reduced rate is the responsibility of the owner or operator.

3. Sulfuric acid plants are authorized to emit excess emissions from start-up for a period of three consecutive hours provided best operational practices, in accordance with this agreement, to minimize emissions are followed. No plant shall be operated (with sulfur as fuel) out of compliance for more than three consecutive hours, Thereafter, the plant shall be shut down, The plant shall be shut down (cease burning sulfur) if, as indicated by the continuous emission monitoring system, the plant is not in compliance within three hours of start-up, Restart may occur as soon as practicable following any needed repairs or adjustments, provided the corrective action is taken and properly documented.

4. Cold Start-Up Procedures.

a. Converter.

(1) The inlet and outlet temperature at the first two masses of catalyst shall be sufficiently high to provide immediate ignition when SO_2 enters the masses, In no event shall the inlet temperature to the first mass be less than 800°F or the outlet temperature to the first two masses be less than 700°F. These temperatures are the desired temperatures at the time the use of auxiliary fuel is terminated.

(2) The gas stream entering the converter shall contain SO_2 at a level less than normal, and sufficiently low to promote catalytic conversion to SO_3.

b. Absorbing Towers.

The concentration, temperature and flow of circulating acid shall be as near to normal conditions as reasonably can be achieved. In no event shall the concentration be less than 96 percent H_2SO_4.

5. Warm Restart.

a. Converter.

MEMORANDUM OF UNDERSTANDING REGARDING BEST OPERATIONAL START-UP PRACTICES FOR SULFURIC ACID PLANTS

The inlet and outlet temperatures of the first two catalyst masses should be sufficiently high to ensure conversion. one of the following three conditions must be met:

(1) The first two catalyst masses inlet and outlet temperatures must be at a minimum of 700°F; or

(2) Two of the four inlet and outlet temperatures must be greater than or equal to 800°F; or

(3) The inlet temperature of the first catalyst must be greater than or equal to 600°F and the outlet temperature greater than or equal to 800°F. Also, the inlet and outlet temperatures of the second catalyst must be greater than or equal to 700°F.

Failure to meet one of the above conditions, requires use of cold start-up procedures.

To allow for technological improvements or individual plant conditions, alternative conditions will be considered by the Department in appropriate cases.

b. Absorbing Towers.

The concentration, temperature and flow of circulating acid shall be as near to normal conditions as reasonably can be achieved, In no event shall the concentration be less than 96 percent H_2SO_4.

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

P.E. Certification Statement

Applicant:
Mosaic Fertilizer, LLC
Riverview Facility

Project No.: 0570008-055-AC

Project Type: Best Available Retrofit Technology (BART) Project
Air Construction Permit

I HEREBY CERTIFY *that the engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297.* ***This permit satisfies the specific requirements of Rule 62-296.340, (BART) F.A.C.*** *However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including but not limited to the electrical, mechanical, structural, hydrological, geological features, and* ***the visibility impact analysis completed by the project meteorologist)****.*

Scott M. Sheplak 12/17/2007
Scott M. Sheplak Date
Professional Engineer (P.E.)
License Number 48866

Permitting Authority:
Department of Environmental Protection
Bureau of Air Regulation
111 South Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: 850/921-9532
Fax: 850/921-9533

SMS/dn

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

December 17, 2007

Alan.Lulf@mosaicco.com

Mr. Alan Lulf, Plant Manager
Riverview Facility
Mosaic Fertilizer, LLC
8813 U.S. Highway 41 South
Riverview, FL 33569

Re: Draft Permit No. 0570008-055-AC
Mosaic Fertilizer, LLC - Riverview Facility
BART Project

Dear Mr. Lulf:

On February 2, 2007, an application was submitted to satisfy the requirements of Best Available Retrofit Technology (BART) in Rule 62-296.340, Florida Administrative Code for the eligible units at the facility identified above. Enclosed are the following documents:

- The Technical Evaluation & Preliminary Determination summarizes the Permitting Authority's technical review of the application and provides the rationale for making the preliminary determination to issue a Draft Permit.
- The proposed Draft Permit includes the specific conditions that regulate the emissions units covered by the proposed project.
- The Written Notice of Intent to Issue Air Permit provides important information regarding: the Permitting Authority's intent to issue an air permit for the proposed project; the requirements for publishing a Public Notice of the Permitting Authority's intent to issue an air permit; the procedures for submitting comments on the Draft Permit; the process for filing a petition for an administrative hearing; and the availability of mediation.
- The Public Notice of Intent to Issue Air Permit is the actual notice that you must have published in the legal advertisement section of a newspaper of general circulation in the area affected by this project.

If you have any questions, please contact Mr. Scott M. Sheplak, P.E. at 850/921-9532.

Sincerely,

Trina L. Vielhauer

Trina L. Vielhauer, Chief
Bureau of Air Regulation

Enclosures

TLV/aal/sms

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

In the Matter of an
Application for Air Permit by:

Mosaic Fertilizer, LLC
8813 U.S. Highway 41 South
Riverview, FL 33569

Draft Permit No. 0570008-055-AC
Facility ID No. 0570008
Riverview Facility

Authorized Representative:
Mr. Alan Lulf, Plant Manager

BART Project
Hillsborough County, Florida

Facility Location: The applicant, Mosaic Fertilizer, LLC, operates the existing Riverview Facility, which is located in Hillsborough County at 8813 U.S. Highway 41 South, Riverview, Florida.

Project: On February 2, 2007, Mosaic Fertilizer, LLC submitted an application to satisfy the requirements of Best Available Retrofit Technology (BART) in Rule 62-296.340, Florida Administrative Code (F.A.C.) for the eligible units at the facility identified above. Details of the project are provided in the application and the enclosed Technical Evaluation & Preliminary Determination.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters F.A.C. 62-4, 62-210, and 62-212. The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation & Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address or phone number listed above. In addition, electronic copies of these documents are available on the following web site: http://www.dep.state.fl.us/air/eproducts/apds/default.asp .

Notice of Intent to Issue Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of the proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Public Notice: Pursuant to Section 403.815, F.S. and Rules 62-110.106 and 62-210.350, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Permit (Public Notice). The Public Notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The newspaper used must meet the requirements of Sections 50.011 and 50.031, F.S. in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Permitting Authority at above address or phone number. Pursuant to Rule 62-110.106(5) and (9), F.A.C., the applicant shall provide proof of publication to the Permitting Authority at the above address within 7 days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of 30 days from the date of publication of the Public Notice. Written comments must be postmarked by the Permitting Authority by close of business (5:00 p.m.) on or before the end of this 30-day period. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any of the parties listed below must be filed within 14 days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of the attached Public Notice or within 14 days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of when and how each petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Written Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.

Executed in Tallahassee, Florida.

Trina L. Vielhauer, Chief
Bureau of Air Regulation

TLV/aal/sms

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Intent to Issue Air Permit package (including the Written Notice of Intent to Issue Air Permit, Public Notice of Intent to Issue Air Permit, the Technical Evaluation & Preliminary Determination, and the Draft Permit) was sent by electronic mail with received receipt requested before the close of business on 12/18/07 to the persons listed below.

Alan Lulf, Mosaic Fertilizer, LLC, Alan.Lulf@mosaicco.com
Jeff Stewart, Mosaic Fertilizer, LLC, jeff.stewart@mosaicco.com
David A. Buff, P.E., Golder Associates Inc.: dbuff@golder.com
Sal Mohammad, Golder Associates Inc.: smohammad@golder.com
Diana M. Lee, P.E., EPCHC: lee@epchc.org
Cindy Zhang-Torres, P.E., DEP SWD: Zhang-Torres@dep.state.fl.us
Jim Little, EPA Region 4: little.james@epa.gov
Katy Forney, EPA Region 4 Forney.Kathleen@epa.gov
Dee Morse, National Park Service: Dee_Morse@nps.gov

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

Mary L. Harvey (Clerk) 12/18/07 (Date)

Adams, Patty

From: Stewart, Jeff M - Riverview [Jeff.Stewart@mosaicco.com]
Sent: Wednesday, December 19, 2007 10:50 AM
To: Adams, Patty
Subject: RE: Mosaic Fertilizer, LLC 0570008-055-AC DRAFT BART Permit

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From: Adams, Patty [mailto:Patty.Adams@dep.state.fl.us]
Sent: Tuesday, December 18, 2007 5:40 PM
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Cc: Harvey, Mary; Sheplak, Scott; Gibson, Victoria
Subject: Mosaic Fertilizer, LLC 0570008-055-AC DRAFT BART Permit

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