Florida Department of Environmental Protection

Southwest District Office
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926

Rick Scott
Governor

Jennifer Carroll
Lt. Governor

Herschel T. Vinyard Jr.
Secretary

FINAL PERMIT

PERMITTEE

CF Industries, Inc.
P.O. Drawer L
Plant City, Florida 33564

Authorized Representative:
Mr. Ronald L. Brunk
Superintendent Environmental Affairs

Air Permit No. 0570005-052-AC
Permit Expires: 7/31/2015
Site Name : Plant City Phosphate Complex
Minor Air Construction Permit
Project Name: New Acid Distribution Header in "B" SAP Absorber

This is the final air construction permit for the installation of a new acid distribution header in the "B" Sulfuric Acid Plant's absorber tower. The proposed work will be conducted at the CF Industries, Inc., Plant City Phosphate Complex (Standard Industrial Classification No. 2874). The facility is located in Hillsborough County at 660 East County Line Road, Plant City, Florida. The UTM coordinates are Zone 17, 388.0 km East, and 3116.0 km North. As noted in the Final Determination provided with this final permit, no changes or only minor changes and clarifications were made to the draft permit.

This final permit is organized by the following sections:

Section 1. General Information

Section 2. Administrative Requirements

Section 3. Emissions Unit Specific Conditions

Section 4. Appendices

Due to the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit.

This air pollution 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.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Hillsborough County, Florida

Robert C. Wong
District Air Program Administrator
Southwest District

9/17/12
Effective Date

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination, the Final Permit and the Appendices) was sent by electronic mail (or a link to these documents made available electronically on a publicly accessible server) with received receipt requested before the close of business on the date indicated below to the persons listed below.

Mr. Ronald L. Brunk, CF Industries, Inc. (rbrunk@cfifl.com)
Mr. John B. Koogler, Koogler and Associates, Inc. (Jkoogler@kooglerassociates.com)
Mr. Pradeep Raval, Koogler and Associates, Inc. (praval@kooglerassociates.com)
Ms. Diana Lee, EPC of Hillsborough County (Lee@epchc.org)

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.

Digitally signed by Carol L. Moore
Date: 2012.09.18 13:19:37 -04'00'

(Clerk) (Date)

FACILITY AND PROJECT DESCRIPTION

Existing Facility

This facility is a phosphate fertilizer production facility. The facility includes four sulfuric acid production plants, two phosphoric acid production plants, four ammonium phosphate production plants with associated storage and shipping units, a molten sulfur storage and handling system, a phosphogypsum stack, and four emergency diesel engines. Final products produced at the facility include sulfuric acid, phosphoric acid, ammonium sulfate, diammonium phosphate (DAP), and monoammonium phosphate (MAP). The existing facility consists of the following emissions units.

Facility ID No. 0570005

ID No.	Emission Unit Description
001	Johnson Scotch Marine Type Boiler
002	"A" Sulfuric Acid Plant
003	"B" Sulfuric Acid Plant
004	"A" Phosphoric Acid Plant
007	"C" Sulfuric Acid Plant
008	"D" Sulfuric Acid Plant
009	"B" Phosphoric Acid Plant
010	"A" DAP/MAP Plant
011	"Z" DAP/MAP Plant
012	"X" DAP/MAP Plant
013	"Y" DAP/MAP Plant
014	"A & B" Storage Buildings
015, 018, 019, 020	"A & B" Storage, Sizing and Shipping
022, 023, 024, 033	Molten Sulfur Storage and Handling
032	Phosphoric Acid Cleanup Unit (PACU)
100	Phosphogypsum Stack
102	Emergency Diesel Engines (Existing stationary RICE)
099	Unregulated Facility Fugitive Emissions

Project Description and Affected Emission Units

This project is for the installation of a new acid distribution header and associated equipment (i.e., trough, pumps, piping, etc. as necessary) in the "B" Sulfuric Acid Plant's absorption tower. The new header will reduce gas velocity in the absorber and will result in reduced entrainment to the scrubber. This project is also for the replacement of the current Brinks inlet duct spray nozzle arrangement used to irrigate the demister candles and prevent the demister from plugging. The nozzle arrangement will be changed to improve the demister cleaning. To increase nozzle effectiveness, compressed air or steam also may be used. The plant is a source of the pollutants Nitrogen Oxide (NOx), Sulfuric Acid Mist (Acid Mist) and Sulfur Dioxide (SO_2); however, this project is not expected to result in a significant increase in emissions of these pollutants.

This project will modify the following emissions units.

Facility ID No. 0570005	
ID No.	Emission Unit Description
003	"B" Sulfuric Acid Plant

NOTE: *Please reference the Permit No., Facility ID, and Emission Unit ID in all correspondence, test report submittals, applications, etc.*

FACILITY REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants (HAPs).
- The facility has no units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.

PERMIT HISTORY/AFFECTED PERMITS

Reference Permit No. 0570005-048-AV

SECTION 2. ADMINISTRATIVE REQUIREMENTS (FINAL)

1. Permitting Authority: The permitting authority for this project is the Florida Department of Environmental Protection (Department), Southwest District's Air Resource Management Section. The Southwest District's mailing address and phone number is:

   Florida Department of Environmental Protection
   Southwest District Office
   Air Resource Management Section
   13051 North Telecom Parkway
   Temple Terrace, Florida 33637-0926
   Telephone: 813-632-7600

   All documents related to applications for permits shall be submitted to the above address.

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

   Environmental Protection Commission of Hillsborough County
   Air Management Division
   3629 Queen Palm Drive
   Tampa, Florida 33619
   Telephone: 813-627-2600

3. Appendices: The following Appendices are attached as part of this permit:

   a. Appendix A. Citation Formats and Glossary of Common Terms;
   b. Appendix B. General Conditions;
   c. Appendix C. Common Conditions; and
   d. Appendix D. Common Testing Requirements.

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 all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.

5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time.
   [Rule 62-4.080, F.A.C.]

6. Modifications: Unless otherwise exempt by rule, the permittee shall not initiate any construction, reconstruction, or modification at the facility and shall not install/modify any pollution control device at the facility without obtaining prior authorization from the Department. Modification is defined as: Any physical change or changes in the method of operations or addition to a facility that would result in an increase in the actual emissions of any air pollutant subject to air regulations, including any not previously emitted, from any emission unit or facility.
   [Rules 62-210.200 - Definition of "Modification" and 62-210.300(1)(a), F.A.C.]

7. Source Obligation (PSD Major facilities only):

   a. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7,

1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

b. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

[Rule 62-212.400(12), F.A.C.]

8. Actual Emissions Reporting (PSD Major Facilities only): This permit is based on an analysis that compared baseline actual emissions with projected actual emissions and avoided the requirements of subsection 62-212.400(4) through (12), F.A.C. for several pollutants. Therefore, pursuant to Rule 62-212.300(1)(e), F.A.C., the permittee is subject to the following monitoring, reporting and recordkeeping provisions.

   a. The permittee shall monitor the emissions of any PSD pollutant that the Department identifies could increase as a result of the construction or modification and that is emitted by any emissions unit that could be affected; and, using the most reliable information available, calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after the change. Emissions shall be computed in accordance with the provisions in Rule 62-210.370, F.A.C., which are provided in Appendix C of this permit.

   b. The permittee shall report to the Department within 60 days after the end of each calendar year during the 5-year setting out the unit's annual emissions during the calendar year that preceded submission of the report. The report shall contain the following:

      1) The name, address and telephone number of the owner or operator of the major stationary source;

      2) The annual emissions as calculated pursuant to the provisions of 62-210.370, F.A.C., which are provided in Appendix C of this permit;

      3) If the emissions differ from the preconstruction projection, an explanation as to why there is a difference; and

      4) Any other information that the owner or operator wishes to include in the report.

   c. The information required to be documented and maintained pursuant to subparagraphs 62-212.300(1)(e)1 and 2, F.A.C., shall be submitted to the Department, which shall make it available for review to the general public.

   For this project, the Department requires the annual reporting of actual Nitrogen Oxide (NOx), Sulfuric Acid Mist (Acid Mist) and Sulfur Dioxide (SO_2) emissions for E.U. No. 003.

   [Permit Application dated 07/16/2012; Rules 62-212.300(1)(e) and 62-210.370, F.A.C.]

9. Annual Operating Report: On or before **April 1** of each year, the permittee shall submit a completed DEP Form 62-210.900(5), "Annual Operating Report for Air Pollutant Emitting Facility" (AOR) for the preceding calendar year. The report may be submitted electronically in accordance with the instructions received with the AOR package sent by the Department, or a hardcopy may be sent to the Compliance Authority.
   [Rule 62-210.370(3), F.A.C.]

10. Application for Title V Air Operation Permit: This permit authorizes modification of the permitted emissions unit and initial operation to determine compliance with Department rules. A Title V air operation permit is required for continued 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 commencing operation or commencing operation as modified. Commencing operation means setting into operation of any emissions unit for any purpose. To apply for a Title V air operation permit, the applicant shall submit the following:

    a. the appropriate permit application form *(see current version of Rule 62-210.900, F.A.C. (Forms and Instructions), and/or FDEP Division of Air Resource Management website at: http://www.dep.state.fl.us/air/)*; and

    b. a copy of the initial compliance test report(s) required by Specific Condition No. A.15., if not previously submitted.

    The application shall be submitted to the Permitting Authority with a copy to the Environmental Protection Commission of Hillsborough County (Compliance Authority).

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

A. EU No. 003 – "B" Sulfuric Acid Plant

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
003	"B" Sulfuric Acid Plant: The "B" Sulfuric Acid Plant has a maximum permitted production rate of 1,600 tons per day of 100% sulfuric acid. In the process, molten sulfur is combusted (oxidized) with dry air in the sulfur furnace. The resulting sulfur dioxide gas is catalytically converted (further oxidized) to sulfur trioxide in a 5 bed converter tower. Sulfur trioxide is then absorbed in an approximately 98% H_2SO_4 stream to form a more concentrated acid in a single stage absorption tower (final stage of production). The heat generated by the chemical reactions in the sulfur furnace and the 5-bed converter tower is recovered to operate two boilers, two economizers and two superheaters. (The boilers, economizers and superheaters are not sources of air pollution.) Sulfur dioxide and sulfuric acid mist (acid mist) emissions are controlled by a two-stage SO_2 scrubber (with ammonia as the scrubbing liquid) and a high-efficiency mist eliminator and exhausted through an approximately 110-foot stack. This construction project is for the installation of a new acid distribution header and associated equipment (i.e., trough, pumps, piping, etc. as necessary) in the "B" Sulfuric Acid Plant's absorption tower. The new header will reduce gas velocity in the absorber and will result in reduced entrainment to the scrubber. This project is also for the replacement of the current Brinks inlet duct spray nozzle arrangement used to irrigate the demister candles and prevent the demister from plugging. The nozzle arrangement will be changed to improve the demister cleaning and compressed air or steam also may be used to increase nozzle effectiveness.

PERFORMANCE RESTRICTIONS

A.1. Federal Regulatory Requirements: This emission unit is subject to the applicable requirements contained in 40 CFR 60 Subpart A - General Provisions and 40 CFR 60 Subpart H – Standards of Performance for Sulfuric Acid Plants.

{Permitting Note: Sulfuric Acid Plant "B" is subject to 40 CFR 60, Subpart H for sulfuric acid mist only.}

[Rules 62-213.440, F.A.C. and 62-204.800(8), F.A.C. and 40 CFR 60, Subparts A and H]

A.2. Permitted Capacity: The "B" Sulfuric Acid Plant's maximum allowable production rate is:

E.U. No.	Plant Name	Maximum Production Rate
003	"B" SAP	1,600 tpd of 100% H_2SO_4

{Permitting note: See Appendix D, Condition 1, for Operation Rate during Testing requirements.}

[Construction Permit 0570005-034-AC; Rules 62-296.340(5)(c) (escape BART), 62-4.160(2) and 62-210.200 (Definitions – Potential to Emit (PTE)), F.A.C.]

A.4. Hours of Operation: The hours of operation are not limited (8760 hours per year).
[Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

EMISSIONS STANDARDS

A.5. Visible Emissions Standard: Visible emissions shall not exceed 10% opacity (except during start-up, shutdown, or malfunction, pursuant to Rule 62-210.700, F.A.C.).
[Rules 62-296.402(1)(b)1. and 62-204.800(8)(b)11., F.A.C.; 40 CFR 60.83(a)(2)]

A.6. SO_2 Emissions Standard: The maximum allowable emission rates for SO2 are as follows:

Sulfur Dioxide (SO_2)			
E.U. No.	**Plant Name**	**Rolling/ block average based on CEMS data***	**Consecutive 12-month rolling total based on CEMS data***
003	"B" SAP	**3-hour rolling average:** 3.5 lbs/ton of 100% H_2SO_4 Produced; {Equivalent to 233.3 lb/hr at 1,600 tpd of 100% H_2SO_4 } **24-hour (daily) block average:** 93.3 lb/hr; {Equivalent to 1.4 lbs/ton of 100% H_2SO_4 Produced at 1,600 tpd}	409 tons/yr

[Construction Permits 0570005-020-AC, 0570005-021-AC/PSD-FL-355; Rules 62-296.402, 62-4.340(5)(c) (escape BART), 62-4.070(1)&(2) and 62-213.440(1), F.A.C.; 40 CFR 60, Subpart H]

A.7. SAM Emissions Standard: The maximum allowable emission rates for SAM are as follows:

Sulfuric Acid Mist (SAM)			
E.U. No.	**Plant Name**	**Allowable Emissions Rate**	**Annual Allowable Emissions Rate**
003	"B" SAP	0.075 lb/ton of 100% H_2SO_4 Produced; {1.8 lbs/hr (each hour)}	7.9 tons/yr

[Construction Permit 0570005-034-AC; Rules 62-296.402, 62-4.340(5)(c) (escape BART), 62-4.070(1)&(2) and 62-213.440(1), F.A.C.; 40 CFR 60, Subpart H]

A.8. NOx Emissions Standard: The maximum allowable emission rates for NOx are as follows:

Nitrogen Oxides (NOx)			
E.U. No.	**Plant Name**	**Allowable Emissions Rate**	**Annual Allowable Emissions Rate**
003	"B" SAP	0.12 lb/ton of 100% H_2SO_4 Produced; {8.0 lb/hr}	35.0 tons/year

[Construction Permit 0570005-021-AC/PSD-FL-355 and 0570005-034-AC; Rules 62-4.340(5)(c) (escape BART), 62-4.070(1)&(2) and 62-213.440(1), F.A.C.]

TESTING REQUIREMENTS

A.9. Initial Compliance Tests: The emissions unit shall be tested to demonstrate initial compliance with the emissions standards for Nitrogen Oxide (NOx), Sulfuric Acid Mist (Acid Mist) and Visible Emissions (VE). The initial tests shall be conducted no later than 90 days after initial operation of the unit following the completion of this project.
[Rules 62-4.070(3) and 62-297.310(7)(a)1., F.A.C.]

A.10. Compliance Tests After Initial Testing: During each federal fiscal year (October 1st to September 30th), the emissions unit shall be tested to demonstrate compliance with the emissions standards for Nitrogen Oxide (NOx), Sulfuric Acid Mist (Acid Mist) and Visible Emissions (VE).
[Rule 62-297.310, F.A.C.]

A.11. Test Requirements: Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit.
[Rule 62-297.310, F.A.C.]

A.12. Test Methods: Required tests shall be performed in accordance with the following reference methods.

Methods	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content,
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
8	Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources

The above method(s) are described in Appendix A of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department.

[Rules 62-296.402(3), 62-297.310(4)(a)2. and 62-297.401, F.A.C., Construction Permit 0570005-026-AC/PSD-FL 339B]

NOTIFICATION REQUIREMENTS

A.13. Test Notification: The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. The notification must include the following information: the date, time, and location of each test; the name and telephone number of the facility's contact person who will be responsible for coordinating the test; and the name, company, and the telephone number of the person conducting the test.

{Permitting Note: The notification should also include the relevant emission unit ID No(s)., test method(s) to be used, and pollutants to be tested.}

[Rules 62-4.070(3) and 62-297.310(7)(a)9., F.A.C.]

A.14. Notification of Operation Commencement: The permittee shall notify the Compliance Authority in writing of the date of commencing operation of the EU No. 003, no later than fifteen (15) days after that date. Commencing operation means setting into operation of any emissions unit for any purpose. [Rule 62-4.070, F.A.C., and Rule 62-210.200, F.A.C., (Definition of Commence Operation)]

RECORDS AND REPORTS

A.15. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. [Rule 62-297.310(8), F.A.C.]

{Permitting Note: Except for the changes specified in the conditions above, this emissions unit remain subject to the all other valid conditions contained in the current Title V permit (0570005-048-AV .}