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BUREAU OF AIR REGULATION

**APPLICATION FOR REVISION OF  
TITLE V AIR CONSTRUCTION PERMIT  
FOR THE C AND D SULFURIC ACID PLANTS  
PLANT CITY PHOSPHATE COMPLEX  
*PLANT CITY, FLORIDA***

**Prepared For:  
CF Industries, Inc.  
10608 Paul Buchman Highway  
Plant City, Florida 33565**

**Prepared By:  
Golder Associates Inc.  
6241 NW 23rd Street, Suite 500  
Gainesville, Florida 32653-1500**

November 2007

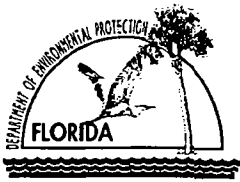
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# Department of Environmental Protection

## Division of Air Resource Management

### APPLICATION FOR AIR PERMIT - LONG FORM

#### I. APPLICATION INFORMATION

**Air Construction Permit** – Use this form to apply for an air construction permit at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air permit. Also use this form to apply for an air construction permit:

- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- Where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- Where the applicant proposes to establish, revise, or renew a plantwide applicability limit (PAL).

**Air Operation Permit** – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial/revised/renewal Title V air operation permit.

**Air Construction Permit & Title V Air Operation Permit (Concurrent Processing Option)** – Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

#### Identification of Facility

1. Facility Owner/Company Name: <b>CF Industries, Inc.</b>	
2. Site Name: <b>Plant City Phosphate Complex</b>	
3. Facility Identification Number: <b>0570005</b>	
4. Facility Location...: Street Address or Other Locator: <b>10608 Paul Buchman Highway</b> City: <b>Plant City</b> County: <b>Hillsborough</b> Zip Code: <b>33565</b>	
5. Relocatable Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Existing Title V Permitted Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

#### Application Contact

1. Application Contact Name: <b>Ron Brunk, Environmental Superintendent</b>	
2. Application Contact Mailing Address... Organization/Firm: <b>CF Industries, Inc.</b> Street Address: <b>P.O. Drawer L</b> City: <b>Plant City</b> State: <b>FL</b> Zip Code: <b>33564-9007</b>	
3. Application Contact Telephone Numbers... Telephone: <b>(813) 364-5608</b> ext.      Fax: <b>(813) 779-0371</b>	
4. Application Contact Email Address: <b>rbrunk@cfifl.com</b>	

#### Application Processing Information (DEP Use)

1. Date of Receipt of Application: <b>11/13/07</b>	3. PSD Number (if applicable):
2. Project Number(s): <b>0570005-026-AC</b>	4. Siting Number (if applicable):

## APPLICATION INFORMATION

### Purpose of Application

This application for air permit is submitted to obtain: (Check one)

#### **Air Construction Permit**

- Air construction permit.
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

#### **Air Operation Permit**

- Initial Title V air operation permit.
- Title V air operation permit revision.
- Title V air operation permit renewal.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

#### **Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)**

- Air construction permit and Title V permit revision, incorporating the proposed project.
- Air construction permit and Title V permit renewal, incorporating the proposed project.

**Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:**

- I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

### Application Comment

Application to increase the production rate of the "C" and "D" Sulfuric Acid Plants from 2,750 tons per day (TPD) to 2,995 TPD. It is requested that the sulfur dioxide (SO<sub>2</sub>) and sulfuric acid mist (SAM) permitted limits in lb/ton of 100% H<sub>2</sub>SO<sub>4</sub> be reduced to avoid Prevention of Significant Deterioration (PSD) review. The nitrogen oxides (NO<sub>x</sub>) permitted limit in lb/ton of 100% H<sub>2</sub>SO<sub>4</sub> will not change. See Attachment A for further description of the proposed projects.

# APPLICATION INFORMATION

## Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
007	"C" Sulfuric Acid Plant	ACM1	
008	"D" Sulfuric Acid Plant	ACM1	

### Application Processing Fee

Check one:  Attached - Amount: \$ \_\_\_\_\_  Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :
Herschel E. Morris, Vice President Phosphate Operations/General Manager
2. Owner/Authorized Representative Mailing Address...
Organization/Firm: CF Industries, Inc. Street Address: P.O. Drawer L City: Plant City State: FL Zip Code: 33564
3. Owner/Authorized Representative Telephone Numbers...
Telephone: (813) 364-5601 ext. Fax: (813) 788-9126
4. Owner/Authorized Representative Email Address: hmorris@cfifl.com
5. Owner/Authorized Representative Statement:
<i>I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.</i>
<i>Herschel E. Morris</i> Signature
<i>11/2/07</i> Date

# APPLICATION INFORMATION

## Application Responsible Official Certification

Complete if applying for an initial/revised/renewal Title V permit or concurrent processing of an air construction permit and a revised/renewal Title V permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name:
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input type="checkbox"/> For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C. <input type="checkbox"/> For a partnership or sole proprietorship, a general partner or the proprietor, respectively. <input type="checkbox"/> For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official. <input type="checkbox"/> The designated representative at an Acid Rain source.
3. Application Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
4. Application Responsible Official Telephone Numbers... Telephone: ( ) - ext. Fax: ( ) -
5. Application Responsible Official Email Address:
6. Application Responsible Official Certification: <i>I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.</i>  _____ Signature  _____ Date

**APPLICATION INFORMATION**

**Professional Engineer Certification**

1. Professional Engineer Name: <b>David A. Buff</b> Registration Number: <b>19011</b>
2. Professional Engineer Mailing Address... Organization/Firm: <b>Golder Associates Inc.**</b> Street Address: <b>6241 N.W. 23rd Street, Suite 500</b> City: <b>Gainesville</b> State: <b>Florida</b> Zip Code: <b>32653</b>
3. Professional Engineer Telephone Numbers... Telephone: <b>(352) 336-5600</b> ext. <b>545</b> Fax: <b>(352) 336-6603</b>
4. Professional Engineer Email Address: <b>dbuff@golder.com</b>
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i>  <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i>  <i>(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i>  <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/>, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i>  <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/>, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i>  <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i>  Signature <u>David A. Buff</u> Date <u>11/9/07</u> (seal)

\* Attach any exception to certification statement.  
\*\* Board of Professional Engineers Certificate of Authorization #00001670

## EMISSIONS UNIT INFORMATION

Section [1]

"C" Sulfuric Acid Plant

### III. EMISSIONS UNIT INFORMATION

**Title V Air Operation Permit Application** - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

**Air Construction Permit or FESOP Application** - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

**Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application** - Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.



**EMISSIONS UNIT INFORMATION**

Section [1]

"C" Sulfuric Acid Plant

**A. GENERAL EMISSIONS UNIT INFORMATION**

**Title V Air Operation Permit Emissions Unit Classification**

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

- The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.
- The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

**Emissions Unit Description and Status**

1. Type of Emissions Unit Addressed in this Section: (Check one)

- This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).
- This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.
- This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

"C" Sulfuric Acid Plant (SAP)

3. Emissions Unit Identification Number: 007

4. Emissions Unit Status Code: A	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code: 28	8. Acid Rain Unit? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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9. Package Unit:

Manufacturer:

Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment:

There exists a potential for fugitive emissions of SO<sub>2</sub>/NO<sub>x</sub>/SAM to occur from this emissions unit. It is our understanding, based on past FDEP interpretations and permitting history, that these emissions are not regulated under federal/state/local emission standards.

**EMISSIONS UNIT INFORMATION**

**Section [1]**

**"C" Sulfuric Acid Plant**

**Emissions Unit Control Equipment**

1. Control Equipment/Method(s) Description:

**Sulfuric Acid Plant – Double Contact Process  
Mist Eliminator – High Velocity**

2. Control Device or Method Code(s): **044, 014**

**EMISSIONS UNIT INFORMATION**

Section [1]

"C" Sulfuric Acid Plant

**B. EMISSIONS UNIT CAPACITY INFORMATION**

(Optional for unregulated emissions units.)

**Emissions Unit Operating Capacity and Schedule**

1. Maximum Process or Throughput Rate:		
2. Maximum Production Rate: 2,995 TPD 100% H <sub>2</sub> SO <sub>4</sub>		
3. Maximum Heat Input Rate: million Btu/hr		
4. Maximum Incineration Rate:	pounds/hr	
	tons/day	
5. Requested Maximum Operating Schedule:		
	24 hours/day	7 days/week
	52 weeks/year	8,760 hours/year
6. Operating Capacity/Schedule Comment:		

**EMISSIONS UNIT INFORMATION**

Section [1]

"C" Sulfuric Acid Plant

**C. EMISSION POINT (STACK/VENT) INFORMATION**  
 (Optional for unregulated emissions units.)

**Emission Point Description and Type**

1. Identification of Point on Plot Plan or Flow Diagram: "C" SAP		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code: V	6. Stack Height: 199 feet	7. Exit Diameter: 9.2 feet	
8. Exit Temperature: 163°F	9. Actual Volumetric Flow Rate: 131,725 acfm	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: Dscfm 112,692		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:  Exit temperature and volumetric flow rate updated based on 2007 stack test data.			

**EMISSIONS UNIT INFORMATION**

**Section [1]**

**"C" Sulfuric Acid Plant**

**D. SEGMENT (PROCESS/FUEL) INFORMATION**

**Segment Description and Rate: Segment 1 of 1**

1. Segment Description (Process/Fuel Type):  Chemical Manufacturing; Sulfuric Acid (Contact Process); Absorber @ 99.9% Conversion			
2. Source Classification Code (SCC): 3-01-023-01		3. SCC Units: Tons 100% H <sub>2</sub> SO <sub>4</sub> Produced	
4. Maximum Hourly Rate: 124.8	5. Maximum Annual Rate: 1,093,175	6. Estimated Annual Activity Factor:	
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:	
10. Segment Comment:  Maximum rates based on 2,995 TPD 100% H <sub>2</sub> SO <sub>4</sub> .			

**Segment Description and Rate: Segment of**

1. Segment Description (Process/Fuel Type):			
2. Source Classification Code (SCC):		3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:	
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:	
10. Segment Comment:			

**EMISSIONS UNIT INFORMATION**

Section [1]

“C” Sulfuric Acid Plant

**E. EMISSIONS UNIT POLLUTANTS**

**List of Pollutants Emitted by Emissions Unit**

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
SO <sub>2</sub>	044		EL
SAM	014		EL
NO <sub>x</sub>			EL

**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [1]  
 "C" Sulfuric Acid Plant

Page [1] of [3]  
 Sulfur Dioxide

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –  
 POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: <b>SO<sub>2</sub></b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: <b>405.6 lb/hour                      1,776.4 tons/year</b>		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor: <b>3.25 lb/ton 100% H<sub>2</sub>SO<sub>4</sub></b>  Reference: <b>Proposed Emission Limit</b>		7. Emissions Method Code: <b>0</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:                      To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:  3-hr average: 3.25 lb/ton x 2,995 TPD x 1 day/24 hr = 405.6 lb/hr 24-hr average: 3.25 lb/ton x 2,995 TPD x 1 day/24 hr = 405.6 lb/hr Annual: 405.6 lb/hr x 8,760 hr/yr / 2,000 lb/ton = 1,776.4 TPY			
11. Potential Fugitive and Actual Emissions Comment:			

**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [1]  
 "C" Sulfuric Acid Plant

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 Sulfur Dioxide

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -  
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>3.25 lb/ton 100% H<sub>2</sub>SO<sub>4</sub></b>	4. Equivalent Allowable Emissions: <b>405.6 lb/hour 1,776.4 tons/year</b>
5. Method of Compliance:  <b>SO<sub>2</sub> CEMS.</b>	
6. Allowable Emissions Comment (Description of Operating Method):  <b>Represents 3-hour average.</b>	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>3.25 lb/ton 100% H<sub>2</sub>SO<sub>4</sub></b>	4. Equivalent Allowable Emissions: <b>405.6 lb/hour 1,776.4 tons/year</b>
5. Method of Compliance:  <b>SO<sub>2</sub> CEMS.</b>	
6. Allowable Emissions Comment (Description of Operating Method):  <b>Represents 24-hour average.</b>	

Allowable Emissions Allowable Emissions \_\_\_\_ of \_\_\_\_

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions:  lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	



**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [1]  
 "C" Sulfuric Acid Plant

Page [2] of [3]  
 Sulfuric Acid Mist

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –  
 POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

**Potential/Estimated Fugitive Emissions**

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: <b>SAM</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: <b>12.1 lb/hour</b> <b>53.0 tons/year</b>		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to            tons/year			
6. Emission Factor: <b>0.097 lb/ton 100% H<sub>2</sub>SO<sub>4</sub></b>  Reference: <b>Proposed Emission Limit</b>		7. Emissions Method Code: <b>0</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:            To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:  Hourly: <b>0.097 lb/ton x 2,995 TPD x 1 day/24 hr = 12.1 lb/hr</b>  Annual: <b>12.1 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 53.0 TPY</b>			
11. Potential Fugitive and Actual Emissions Comment:			

**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [1]  
 "C" Sulfuric Acid Plant

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 Sulfuric Acid Mist

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -  
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>0.097 lb/ton 100% H<sub>2</sub>SO<sub>4</sub></b>	4. Equivalent Allowable Emissions: <b>12.1 lb/hour      53.0 tons/year</b>
5. Method of Compliance:  <b>Annual stack test using EPA Method 8.</b>	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions \_\_\_\_ of \_\_\_\_

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions \_\_\_\_ of \_\_\_\_

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [1]  
 "C" Sulfuric Acid Plant

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 Nitrogen Oxides

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –  
 POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

**Potential/Estimated Fugitive Emissions**

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: NO <sub>x</sub>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 15.0 lb/hour                      65.6 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor: 0.12 lb/ton 100% H <sub>2</sub> SO <sub>4</sub>  Reference: Current Emission Limit (Permit No. 0570005-017-AV)		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:                      To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:  Hourly: 0.12 lb/ton x 2,995 TPD x 1 day/24 hr = 15.0 lb/hr  Annual: 15.0 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 65.6 TPY			
11. Potential Fugitive and Actual Emissions Comment:			

**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [1]  
 "C" Sulfuric Acid Plant

Page [3] of [3]  
 Nitrogen Oxides

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -  
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>0.12 lb/ton 100% H<sub>2</sub>SO<sub>4</sub></b>	4. Equivalent Allowable Emissions: <b>15.0 lb/hour          65.6 tons/year</b>
5. Method of Compliance: <b>Annual source test using EPA Method 7E.</b>	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions \_\_\_\_ of \_\_\_\_

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour          tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions \_\_\_\_ of \_\_\_\_

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour          tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

## EMISSIONS UNIT INFORMATION

Section [2]

"D" Sulfuric Acid Plant

### III. EMISSIONS UNIT INFORMATION

**Title V Air Operation Permit Application** - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

**Air Construction Permit or FESOP Application** - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

**Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application** - Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

**EMISSIONS UNIT INFORMATION**

Section [2]

"D" Sulfuric Acid Plant

**A. GENERAL EMISSIONS UNIT INFORMATION**

**Title V Air Operation Permit Emissions Unit Classification**

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)
- The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.
  - The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

**Emissions Unit Description and Status**

1. Type of Emissions Unit Addressed in this Section: (Check one)
- This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).
  - This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.
  - This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

"D" Sulfuric Acid Plant (SAP)

3. Emissions Unit Identification Number: 008

4. Emissions Unit Status Code: A	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code: 28	8. Acid Rain Unit? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
-------------------------------------	--------------------------------	--------------------------	---	--

9. Package Unit:

Manufacturer:

Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment:

There exists a potential for fugitive emissions of SO<sub>2</sub>/NO<sub>x</sub>/SAM to occur from this emissions unit. It is our understanding, based on past FDEP interpretations and permitting history, that these emissions are not regulated under federal/state/local emission standards.

**EMISSIONS UNIT INFORMATION**

Section [2]

"D" Sulfuric Acid Plant

**Emissions Unit Control Equipment**

1. Control Equipment/Method(s) Description:

**Sulfuric Acid Plant – Double Contact Process  
Mist Eliminator – High Velocity**

2. Control Device or Method Code(s): **044, 014**

**EMISSIONS UNIT INFORMATION**

Section [2]

"D" Sulfuric Acid Plant

**B. EMISSIONS UNIT CAPACITY INFORMATION**

(Optional for unregulated emissions units.)

**Emissions Unit Operating Capacity and Schedule**

1. Maximum Process or Throughput Rate:		
2. Maximum Production Rate: 2,995 TPD 100% H <sub>2</sub> SO <sub>4</sub>		
3. Maximum Heat Input Rate: million Btu/hr		
4. Maximum Incineration Rate:	pounds/hr	
	tons/day	
5. Requested Maximum Operating Schedule:		
	24 hours/day	7 days/week
	52 weeks/year	8,760 hours/year
6. Operating Capacity/Schedule Comment:		



**EMISSIONS UNIT INFORMATION**

Section [2]

"D" Sulfuric Acid Plant

**C. EMISSION POINT (STACK/VENT) INFORMATION**  
(Optional for unregulated emissions units.)**Emission Point Description and Type**

1. Identification of Point on Plot Plan or Flow Diagram: "D" SAP		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code: V	6. Stack Height: 199 feet	7. Exit Diameter: 9.2 feet	
8. Exit Temperature: 157°F	9. Actual Volumetric Flow Rate: 125,718 acfm	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: Dscfm 108,712		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:  Exit temperature and volumetric flow rate updated based on 2007 stack test data.			

**EMISSIONS UNIT INFORMATION**

Section [2]

"D" Sulfuric Acid Plant

**D. SEGMENT (PROCESS/FUEL) INFORMATION**

**Segment Description and Rate:** Segment 1 of 1

1. Segment Description (Process/Fuel Type):  Chemical Manufacturing; Sulfuric Acid (Contact Process); Absorber @ 99.9% Conversion		
2. Source Classification Code (SCC): 3-01-023-01		3. SCC Units: Tons 100% H <sub>2</sub> SO <sub>4</sub> Produced
4. Maximum Hourly Rate: 124.8	5. Maximum Annual Rate: 1,093,175	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:  Maximum rates based on 2,995 TPD 100% H <sub>2</sub> SO <sub>4</sub> .		

**Segment Description and Rate:** Segment of

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		



**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [2]

Page [1] of [3]

"D" Sulfuric Acid Plant

Sulfur Dioxide

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –**

**POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: <b>SO<sub>2</sub></b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: <b>405.6 lb/hour                      1,776.4 tons/year</b>		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor: <b>3.25 lb/ton 100% H<sub>2</sub>SO<sub>4</sub></b>  Reference: <b>Proposed Emission Limit</b>		7. Emissions Method Code: <b>0</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:                      To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:  3-hr average: 3.25 lb/ton x 2,995 TPD x 1 day/24 hr = 405.6 lb/hr 24-hr average: 3.25 lb/ton x 2,995 TPD x 1 day/24 hr = 405.6 lb/hr Annual: 405.6 lb/hr x 8,760 hr/yr / 2,000 lb/ton = 1,776.4 TPY			
11. Potential Fugitive and Actual Emissions Comment:			

**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [2]  
 "D" Sulfuric Acid Plant

Page [1] of [3]  
 Sulfur Dioxide

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -  
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

**Allowable Emissions** Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>3.25 lb/ton 100% H<sub>2</sub>SO<sub>4</sub></b>	4. Equivalent Allowable Emissions: <b>405.6 lb/hour 1,776.4 tons/year</b>
5. Method of Compliance:  <b>SO<sub>2</sub> CEMS.</b>	
6. Allowable Emissions Comment (Description of Operating Method):  <b>Represents 3-hour average.</b>	

**Allowable Emissions** Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>3.25 lb/ton 100% H<sub>2</sub>SO<sub>4</sub></b>	4. Equivalent Allowable Emissions: <b>405.6 lb/hour 1,776.4 tons/year</b>
5. Method of Compliance:  <b>SO<sub>2</sub> CEMS.</b>	
6. Allowable Emissions Comment (Description of Operating Method):  <b>Represents 24-hour average.</b>	

**Allowable Emissions** Allowable Emissions \_\_\_\_\_ of \_\_\_\_\_

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –  
 POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: <b>SAM</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: <b>12.1 lb/hour                      53.0 tons/year</b>		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor: <b>0.097 lb/ton 100% H<sub>2</sub>SO<sub>4</sub></b>  Reference: <b>Proposed Emission Limit</b>		7. Emissions Method Code: <b>0</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:                      To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:  Hourly: <b>0.097 lb/ton x 2,995 TPD x 1 day/24 hr = 12.1 lb/hr</b>  Annual: <b>12.1 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 53.0 TPY</b>			
11. Potential Fugitive and Actual Emissions Comment:			

**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [2]  
 "D" Sulfuric Acid Plant

Page [2] of [3]  
 Sulfuric Acid Mist

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -  
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>0.097 lb/ton 100% H<sub>2</sub>SO<sub>4</sub></b>	4. Equivalent Allowable Emissions: <b>12.1 lb/hour      53.0 tons/year</b>
5. Method of Compliance:  <b>Annual stack test using EPA Method 8.</b>	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions \_\_\_\_ of \_\_\_\_

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: <b>lb/hour      tons/year</b>
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions \_\_\_\_ of \_\_\_\_

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: <b>lb/hour      tons/year</b>
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [2]  
 "D" Sulfuric Acid Plant

Page [3] of [3]  
 Nitrogen Oxides

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –  
 POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

**Potential/Estimated Fugitive Emissions**

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: <b>NO<sub>x</sub></b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: <b>15.0 lb/hour                      65.6 tons/year</b>		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor: <b>0.12 lb/ton 100% H<sub>2</sub>SO<sub>4</sub></b>  Reference: <b>Current Emission Limit (Permit No. 0570005-017-AV)</b>		7. Emissions Method Code: <b>0</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:                      To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:  Hourly: <b>0.12 lb/ton x 2,995 TPD x 1 day/24 hr = 15.0 lb/hr</b>  Annual: <b>15.0 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 65.6 TPY</b>			
11. Potential Fugitive and Actual Emissions Comment:			



**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [2]  
 "D" Sulfuric Acid Plant

Page [3] of [3]  
 Nitrogen Oxides

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -  
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

**Allowable Emissions** Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>0.12 lb/ton 100% H<sub>2</sub>SO<sub>4</sub></b>	4. Equivalent Allowable Emissions: <b>15.0 lb/hour          65.6 tons/year</b>
5. Method of Compliance: <b>Annual source test using EPA Method 7E.</b>	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions \_\_\_\_ of \_\_\_\_

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour          tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions \_\_\_\_ of \_\_\_\_

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour          tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**ATTACHMENT A**  
**SUPPLEMENTAL INFORMATION FOR**  
**CONSTRUCTION PERMIT APPLICATION**

CF Industries, Inc. (CFI) is proposing to increase the C and D Sulfuric Acid Plant (SAP) production rates at its Plant City Phosphate Complex located in Plant City, Florida. Currently, the C and D SAPs are each permitted to produce sulfuric acid ( $H_2SO_4$ ) up to 2,750 tons per day (TPD) of 100-percent  $H_2SO_4$ . The proposed increased production rate will allow them to produce up to 2,995 TPD of 100-percent  $H_2SO_4$ . It is requested that the sulfur dioxide ( $SO_2$ ) and sulfuric acid mist (SAM) permitted limits in lb/ton 100-percent  $H_2SO_4$  be reduced to avoid Prevention of Significant Deterioration (PSD) review. The nitrogen oxides ( $NO_x$ ) permitted limits in lb/ton 100-percent  $H_2SO_4$  will not change. In addition, there will be no physical change or change in the permitted throughput to the Molten Sulfur Storage and Handling System.

The CFI Plant City facility is located south of Zephyrhills and north of Plant City in northeastern Hillsborough County, Florida. The CFI Plant City facility operates four SAPs, two phosphoric acid plants (PAPs), four diammonium phosphate/monoammonium phosphate (DAP/MAP) plants, molten sulfur storage and handling operations, product storage and shipping operations, and ancillary equipment in order to produce phosphate fertilizers. The CFI Plant City facility currently operates under Title V Permit No. 0570005-017-AV, most recently issued on October 13, 2005.

The C and D SAPs are Monsanto double absorption sulfuric acid plants with a current maximum production capacity of 2,750 TPD of 100-percent  $H_2SO_4$ . At the C and D SAPs, dry air and molten sulfur are ignited in a sulfur burner. The combustion gases, primarily  $SO_2$ , are passed through a 3-stage catalytic converter where  $SO_2$  is converted to  $SO_3$ . The gases, now primarily  $SO_3$ , enter the interpass tower where the  $SO_3$  is absorbed into a sulfuric acid solution. The remaining gases (a mixture of  $SO_2$ ,  $SO_3$  and other products) exit the interpass tower through a high-efficiency mist eliminator. The gas then enters the 4th stage of the catalytic converter where additional  $SO_2$  is converted to  $SO_3$ . This gas enters the final tower where  $SO_3$  is again absorbed into a sulfuric acid solution. The remaining gases exit to the atmosphere through a high-efficiency mist eliminator. The plants also incorporate a Waste Heat Boiler System for generating steam from the energy produced by the combustion of the molten sulfur.

The current SO<sub>2</sub> emission limit for both the C and D SAPs is 3.5 lb/ton of 100-percent H<sub>2</sub>SO<sub>4</sub>, which is equivalent to 401 lb/hr and 1,757 tons per year (TPY) for each SAP. The hourly limits are based on a 3-hour rolling average and the annual limit is based on a consecutive 12-month rolling average. The current SAM emission limit is 0.10 lb/ton of 100-percent H<sub>2</sub>SO<sub>4</sub> for each SAP, which is equivalent to 11 lb/hr and 50 TPY based on a consecutive 12-month rolling average for each SAP. The current hourly NO<sub>x</sub> emission limit for each SAP is 0.12 lb/ton of 100-percent H<sub>2</sub>SO<sub>4</sub>, which is equivalent to 14 lb/hr and 60 TPY for each SAP.

The proposed production rate increase to 2,995 lb/ton of 100-percent H<sub>2</sub>SO<sub>4</sub> requires a reduction in the permitted SO<sub>2</sub> and SAM limits in lb/ton of 100-percent H<sub>2</sub>SO<sub>4</sub> to avoid PSD review. The NO<sub>x</sub> current permitted limit will not change. The following permit limits are proposed as shown in Tables A-1 and A-2: 3.25 lb/ton of 100-percent H<sub>2</sub>SO<sub>4</sub> for SO<sub>2</sub>, 0.097 lb/ton of 100-percent H<sub>2</sub>SO<sub>4</sub> for SAM, and 0.12 lb/ton of 100-percent H<sub>2</sub>SO<sub>4</sub> for NO<sub>x</sub>. The increased production rate and reduced emission rates yield an annual emissions increase for each SAP of 19.4 TPY for SO<sub>2</sub>, 3.0 TPY for SAM, and 5.6 TPY for NO<sub>x</sub>.

Both C and D SAPs were issued Air Construction Permit No. 0570005-019-AC/PSD-FL-339 on June 1, 2004, to increase the production rate of each plant to 2,750 TPD of 100-percent H<sub>2</sub>SO<sub>4</sub>. However, construction has not yet been completed since a few upgrades to plant equipment are still needed to accomplish the production increases. The upgrades authorized under the permit include the following:

1. Replacement of potassium- or sodium-promoted vanadium catalyst with installation of cesium-promoted vanadium catalyst;
2. Replacement of the C SAP final and drying absorption tower packing with low pressure drop packing;
3. Installation of a new tube side bypass on the No. 3 cold gas heat exchanger;
4. Installation of a bypass around the superheater/economizer and replacement of the existing No. 1 cross flow hot gas exchanger without a low pressure drop radial heat exchanger; and
5. Installation of onsite oxygen generation, storage, and injection equipment.

(Note: See Table A-3 for the status of these projects.)

Because construction at each SAP is not complete and normal operation (i.e., 2,750 TPD of 100-percent H<sub>2</sub>SO<sub>4</sub>) has not been reached, both C and D SAPs are considered new emissions units as defined in Rule 62-210.200(213), F.A.C. For new emissions units, the baseline actual emissions shall

equal the unit's potential-to-emit [Rule 62-210.200(36)(c), F.A.C.]. Table A-4 presents the comparison of the current potential emissions to the future potential emissions to show the net increase in annual emissions from the proposed project. The total emissions increases for the project are all less than the PSD significant emission rates, and therefore, the proposed increases do not trigger PSD review.

In addition to increasing the production rate of the C and D SAPs, CFI is requesting to extend the expiration date of the current air construction permit (Permit No. 0570005-019-AC/PSD-FL-339), which currently expires June 1, 2008. Because CFI has faced extensive delivery problems with the boiler feedwater pumps, which are not expected to be delivered until after June 1, 2008, CFI would like to extend the expiration date by 3 months. If approved, the permit would then expire on September 1, 2008.

**TABLE A-1**  
**SUMMARY OF CURRENT AND PROPOSED PERMITTED EMISSION RATES FOR THE**  
**C SULFURIC ACID PLANT, CF INDUSTRIES, PLANT CITY**

Pollutant & Averaging Time	Current Permit Limits <sup>a</sup>				Proposed Permit Limits				Project Increase (TPY)
	Production Rate (TPD)	Emission Rates			Production Rate (TPD)	Emission Rates			
		(lb/ton H <sub>2</sub> SO <sub>4</sub> )	(lb/hr)	(TPY)		(lb/ton H <sub>2</sub> SO <sub>4</sub> )	(lb/hr)	(TPY)	
SO <sub>2</sub>	2,750				2,995				
3-Hour		3.5 <sup>b</sup>	401 <sup>b</sup>	--		3.25	405.6	--	
24-Hour		3.5	401	--		3.25	405.6	--	
Annual		--	--	1,757 <sup>c</sup>		--	--	1,776.4	19.4
SAM									
Hourly		0.10	11	--		0.097	12.1	--	
Annual		--	--	50 <sup>c</sup>		--	--	53.0	3.0
NO <sub>x</sub>									
Hourly		0.12	14	--		0.12	15.0	--	
Annual		--	--	60		--	--	65.6	5.6

<sup>a</sup> Based on Title V Permit No. 0570005-017-AV.

<sup>b</sup> Limits are based on a 3-hour rolling average.

<sup>c</sup> Limits are based on a consecutive 12-month rolling average.

**TABLE A-2**  
**SUMMARY OF CURRENT AND PROPOSED PERMITTED EMISSION RATES FOR THE**  
**D SULFURIC ACID PLANT, CF INDUSTRIES, PLANT CITY**

Pollutant & Averaging Time	Current Permit Limits <sup>a</sup>				Proposed Permit Limits				Project Increase (TPY)
	Production Rate (TPD)	Emission Rates			Production Rate (TPD)	Emission Rates			
		(lb/ton H <sub>2</sub> SO <sub>4</sub> )	(lb/hr)	(TPY)		(lb/ton H <sub>2</sub> SO <sub>4</sub> )	(lb/hr)	(TPY)	
SO <sub>2</sub>	2,750				2,995				
3-Hour		3.5 <sup>b</sup>	401 <sup>b</sup>	--		3.25	405.6	--	
24-Hour		3.5	401	--		3.25	405.6	--	
Annual		--	--	1,757 <sup>c</sup>		--	--	1,776.4	19.4
SAM									
Hourly		0.10	11	--		0.097	12.1	--	
Annual		--	--	50 <sup>c</sup>		--	--	53.0	3.0
NO <sub>x</sub>									
Hourly		0.12	14	--		0.12	15.0	--	
Annual		--	--	60		--	--	65.6	5.6

<sup>a</sup> Based on Title V Permit No. 0570005-017-AV.

<sup>b</sup> Limits are based on a 3-hour rolling average.

<sup>c</sup> Limits are based on a consecutive 12-month rolling average.

**TABLE A-3  
AIR CONSTRUCTION PERMIT PROJECTS – CURRENT STATUS  
CF INDUSTRIES, INC. – PLANT CITY, FL**

Project	Status
<b>C SAP to 2,750 TPD (Permit No. 0570005-019-AC/PSD-FL-339)</b>	
Install Cesium-promoted catalyst.	Complete.
Install low P-drop packing in final and drying absorption tower, and interpass absorption tower.	In Progress.
Install new tube side bypass on #3 cold gas heat exchanger.	Complete.
Install superheater/economizer bypass.	Complete.
Replace #1 cross flow hot gas heat exchanger with low P-drop radial heat exchanger.	Complete.
Install oxygen generation, storage and injection equipment.	Canceled. Determined to be unsuitable.
Increase sulfur throughput.	In progress.
Boiler modifications.	In progress.
Install new boiler feedwater pumps and motors.	In progress.
Modifications to deaerator feed tank pumps.	In progress.
Acid cooling system modifications.	In progress.
Install new main blower.	Complete.
Upgrade main blower turbine horsepower.	Increase from 6000 to 7000 hp. In progress.
New cooling tower cell.	In progress.

**TABLE A-3**  
**AIR CONSTRUCTION PERMIT PROJECTS – CURRENT STATUS**  
**CF INDUSTRIES, INC. – PLANT CITY, FL**

<b>D SAP to 2,750 TPD (Permit No. 0570005-019-AC/PSD-FL-339)</b>	
Install Cesium-promoted catalyst.	Complete.
Install low P-drop packing in final and drying absorption tower, and interpass absorption tower.	In Progress.
Install new tube side bypass on #3 cold gas heat exchanger.	Complete.
Replace #1 cross flow hot gas heat exchanger with low P-drop radial heat exchanger.	Complete.
Install oxygen generation, storage and injection equipment.	Canceled. Determined to be unsuitable.
Increase sulfur throughput.	In progress.
Boiler modifications.	In progress.
Install new boiler feedwater pumps and motors.	In progress.
Modifications to deaerator feed tank pumps.	In progress.
Acid cooling system modifications.	In progress.
Install new main blower.	In progress.
Upgrade main blower turbine horsepower.	Increase from 6000 to 7000 hp. In progress.
New cooling tower cell.	In progress.



**TABLE A-4  
PSD APPLICABILITY ANALYSIS**

Source Description	Pollutant Emission Rate (TPY)								
	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM	PM <sub>10</sub>	VOC	TRS	SAM	Fluoride
<b><u>Future Potential Emissions From Affected Sources <sup>a</sup></u></b>									
C Sulfuric Acid Plant	1,776.41	65.59	--	--	--	--	--	53.02	--
D Sulfuric Acid Plant	1,776.41	65.59	--	--	--	--	--	53.02	--
<i>Total Potential Emission Rates</i>	<b>3,552.82</b>	<b>131.18</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>106.04</b>	<b>0.00</b>
<b><u>Current Potential Emissions <sup>b</sup></u></b>									
C Sulfuric Acid Plant	1,757.00	60.00	--	--	--	--	--	50.00	--
D Sulfuric Acid Plant	1,757.00	60.00	--	--	--	--	--	50.00	--
<i>Total Actual Emission Rates</i>	<b>3,514.00</b>	<b>120.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>100.00</b>	<b>0.00</b>
<b>TOTAL CHANGE DUE TO PROPOSED PROJECT</b>	<b>38.82</b>	<b>11.18</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>6.04</b>	<b>0.00</b>
<b>PSD SIGNIFICANT EMISSION RATE</b>	<b>40</b>	<b>40</b>	<b>100</b>	<b>25</b>	<b>15</b>	<b>40</b>	<b>10</b>	<b>7</b>	<b>3</b>
<b>PSD REVIEW TRIGGERED?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

**Footnotes:**<sup>a</sup> Refer to Tables A-1 and A-2 for emission calculations.<sup>b</sup> Based on Permit No. 0570005-017-AV.