

FINAL DETERMINATION

DEP File No. 0570008-025-AC, PSD-FL-250

Cargill, Riverview - 3200 Tons Per Day Sulfuric Acid Plant

On August 25, 1998, an Intent to Issue Permit was sent to Cargill Fertilizer, Inc. to modify and increase production at its existing sulfuric acid plant No. 7 in Riverview, Hillsborough County, from 2200 to 3200 tons per day. Notice was published in the Tampa Tribune on August 29, 1998. Copies of the draft construction permit were available for public inspection at Department offices in Tampa and Tallahassee and at the offices of the Environmental Protection Commission of Hillsborough County (EPCHC).

Comments from the NPS and EPA were considered prior to issuance of the Intent. These resulted in a lower sulfuric acid limit than proposed by the applicant. No additional comments were submitted by the National Park Service, the U.S. Environmental Protection Agency, the public, or the applicant subsequent to the public notice. Substantial comments were submitted by EPCHC prior to issuance of the Intent that were not resolved until after the Intent was issued.

EPCHC and Cargill met to discuss the outstanding matters. After discussions, EPCHC advised the Department that (although they do not agree with some cost calculations) they accept the permit requirements and are satisfied that efforts that will be undertaken to address the modeled exceedances of sulfur dioxide concentrations in the vicinity of Cargill's and Tampa Electric Plants.

EPCHC still recommends an opacity limit of 5 percent to satisfy the Reasonable Available Control Technology (RACT) particulate requirements for miscellaneous industries given in Rule 62-296.712, F.A.C. The Department notes that specific limits for new sulfuric acid plants are given in Rule 62-296.402(2). These set limits for sulfuric acid mist which is arguably particulate matter. That limit is 0.15 pounds of sulfuric acid mist per ton of acid produced (lb SAM/ton). For reference, the Department's BACT required Cargill to meet 0.12 lb/ton. The same rule limits visible emissions to 10 percent opacity. This requirement is also met by the Department's BACT determination.

According to Rule 62-296.700(3), F.A.C., the specific particulate matter emission limiting standards set forth in Rules 62-296.401 through 62-296.414, F.A.C., have been found to represent the application of RACT for each emissions unit category listed in those rules unless that industry is specifically addressed in Rules 62-296.700 through 712, F.A.C. Since there are no references to sulfuric acid plants in Rules 62-296.700 through 712, F.A.C., Rule 62-296.402(2) represents RACT.

The modifications of Cargill's Sulfuric Acid Plant No. 7 comply with RACT requirements for sulfuric acid plants in general and more specifically with RACT requirements for sulfuric acid mist and visible emissions. This analysis should satisfy the request by EPCHC for further consideration of the matter.

The final action of the Department is to issue the permit and BACT determination as drafted.



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

PERMITTEE:

Cargill Fertilizer, Inc.
8813 US Highway 41 South
Riverview, Florida 33569

Authorized Representative:

David B. Jellerson, P.E.
Environmental Superintendent

File No.	0570008-025-AC
FID No.	0570008
SIC No.	2819
Permit No.	PSD-FL-250
Expires:	December 31, 2001

PROJECT AND LOCATION:

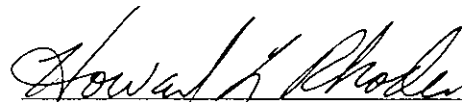
Permit to increase the capacity of Sulfuric Acid Plant No. 7 from 2,200 to 3,200 tons per day. The plant serves a fertilizer facility located at US Highway 41 South, Riverview, Hillsborough County. UTM coordinates are Zone 17; 362.9 km E ; 3082.5 km N.

STATEMENT OF BASIS:

This 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.). The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

APPENDICES AND ATTACHMENTS MADE A PART OF THIS PERMIT:

Table 1	Air Pollutant Standards and Terms
Appendix A	Best Operational Start-up Procedures for Sulfuric Acid Plants
Appendix BD	Best Available Control Technology Determination
Appendix CSC	Emission Unit(s) Common Specific Conditions
Appendix GC	Construction Permit General Conditions


Howard L. Rhodes, Director
Division of Air Resources
Management

AIR CONSTRUCTION PERMIT 0570008-025-AC

SECTION I. FACILITY INFORMATION

FACILITY DESCRIPTION

The existing complex consists of three sulfuric acid plants and associated molten sulfur storage and handling equipment, a phosphoric acid plant, mono and diammonium phosphate fertilizer plants, granular triple superphosphate plant, animal feed plant, phosphate rock grinding/drying facilities, sodium fluoride plant, a gypsum stack and process cooling ponds, and a material handling system. This permit is for a project to increase the capacity of an existing 2200 ton per day (TPY) sulfur-burning, double absorption sulfuric acid plant to 3200 TPY. The project consists of: replacement of the drying tower and blower; installation of a new converter and boiler; increase in catalyst loading; and modifications to the existing sulfur burner, converter, interpass tower, final tower, boiler, superheaters, economizers, feedwater system, and steam system.

Air pollution control equipment consists of the double absorption process, use of additional vanadium catalyst beyond the requirement for the production increase, and impaction-based mist eliminators on the final tower.

EMISSION UNITS

This permit addresses the following emission units:

EMISSIONS UNIT No.	SYSTEM	EMISSIONS UNITS DESCRIPTION
004	Process	Sulfuric Acid Plant

REGULATORY CLASSIFICATION

The Cargill Fertilizer facility is classified as a "Major or Title V Source" per Rule 62-210.200, F.A.C., Definitions, because emissions of at least one regulated air pollutant exceed 100 tons per year (TPY).

Sulfuric acid plants are listed as a Major Facility Category in Table 62-212.400-1, F.A.C., "Major Facility Categories." Therefore, stack and fugitive emissions of over 100 TPY of sulfur dioxide are sufficient to classify the installation as a "Major Facility" per the definitions in **Rule 62-210.200, F.A.C.**, subject to the Significant Emission Rates for sulfuric acid mist and nitrogen oxides given in Table 62-212.400-2, F.A.C. and the requirements of **Rule 62-212.400, F.A.C.**, Prevention of Significant Deterioration (PSD) and Best Available Control Technology (BACT).

The molten sulfur storage and handling equipment is subject to **Rule 62-212.600, F.A.C.** The sulfuric acid plant is also subject to 40 CFR Subpart H, New Source Performance Standards (NSPS) for Sulfuric Acid Plants, incorporated by reference in **Rule 62-204.800, F.A.C.**

AIR CONSTRUCTION PERMIT-0570008-025-AC

SECTION I. FACILITY INFORMATION

PERMIT SCHEDULE:

- 08/29/98 Notice of Intent published in The Tampa Tribune
- 08/25/98 Distributed Intent to Issue Permit
- 07/23/98 Received Cargill Request to Process Application Per Rule 62-4.055, F.A.C.
- 05/01/98 Received Application

RELEVANT DOCUMENTS:

The documents listed below are the basis of the permit. They are specifically related to this permitting action but do not supersede the conditions given in the permit. These documents are on file with the Department.

- Application received May 1, 1998.
- Department's letters dated May 29 and July 10.
- Comments from the National Park Service dated May 27, May 29, and July 28.
- Comments from the Environmental Protection Commission of Hillsborough County dated May 27, July 10, and October 7.
- Applicant's completeness responses received June 12 and July 20, Request to Process Application received July 23, and additional comments received August 6.
- Department's Intent to Issue dated August 25 and associated documents.
- Department's Final Determination accompanying permit.

AIR CONSTRUCTION PERMIT 0570008-025-AC

SECTION II. EMISSION UNIT(S) GENERAL REQUIREMENTS

GENERAL AND ADMINISTRATIVE REQUIREMENTS

1. Regulating Agencies: All documents related to applications for permits to operate, reports, tests, minor modifications and notifications shall be submitted to the Environmental Protection Commission of Hillsborough County, 1410 North 21 Street, Tampa, Florida 33605 (phone number: 813/272-5530). All applications for permits to construct or modify an emissions unit(s) *subject to the Prevention of Significant Deterioration or Nonattainment (NA) review requirements* should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (FDEP), 2600 Blairstone Road, Tallahassee, Florida 32399-2400 (phone number 850/488-0114).
2. General Conditions: The owner and operator is subject to and shall operate under the attached General Permit Conditions G.1 through G.15 listed in *Appendix GC* of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
3. Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapters of the Florida Administrative Code.
4. Forms and Application Procedures: The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. [Rule 62-210.900, F.A.C.]
5. Expiration: This air construction permit shall expire on December 31, 2001 [Rule 62-210.300(1), F.A.C.]. The permittee may, for good cause, request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit. However, the permittee shall promptly notify the Department's Southwest District Office of any delays in completion of the project which would affect the startup day by more than 90 days. [Rule 62-4.090, F.A.C.]
6. Application for Title V Permit: An application for a Title V operating permit, pursuant to Chapter 62-213, F.A.C., must be submitted to the Department's Southwest District Office. [Chapter 62-213, F.A.C.]

AIR CONSTRUCTION PERMIT 0570008-025-AC

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SPECIFIC CONDITIONS - SULFURIC ACID PLANT No. 7:

The following Specific Conditions apply to the following emission units:

EMISSIONS UNIT No.	SYSTEM	EMISSIONS UNITS DESCRIPTION
004	Process	Sulfuric Acid Plant

1. Emissions Unit 004 shall comply with all applicable provisions of the 40 CFR 60, Standards of Performance for New Stationary Sources, Subpart H, Sulfuric Acid Plants. [Rule 62-204.800(7)(b)11., F.A.C]
2. Emissions Unit 004 shall also comply with all applicable requirements of 40 CFR 60, Standards of Performance for New Stationary Sources, Subpart A, General Provisions. These include:
 - 40 CFR 60.7, Notification and record keeping
 - 40 CFR 60.8, Performance tests
 - 40 CFR 60.11, Compliance with standards and maintenance requirements
 - 40 CFR 60.12, Circumvention
 - 40 CFR 60.13, Monitoring requirements
 - 40 CFR 60.19, General notification and reporting requirements
3. Emissions of sulfur dioxide (SO₂), sulfuric acid mist (SAM), visible emissions (VE), and nitrogen oxides (NO_x) from the sulfuric acid plant shall not exceed the following limits: [Rules 62-204.800(7)(b)10; 62-210.200; 62-212.400, F.A.C.]

Pollutant	Pounds per Hour	Tons per Year	Limit Basis
SO ₂	467 ¹	2044	3.5 lb/ton 100% H ₂ SO ₄ produced (BACT) ¹
SO ₂	533		4 lb/ton 100% H ₂ SO ₄ produced (NSPS)
SAM	16	70	0.12 lb/ton 100% H ₂ SO ₄ produced (BACT)
VE	10% opacity		NSPS
NO _x	16.0 ²	70	0.12 lb/ton 100% H ₂ SO ₄ produced ²

1. 24-hour daily average based on CEMS data.
2. Applicant's estimate. Required for initial compliance test only to demonstrate that modification is minor with respect to PSD.
4. The production rate shall not exceed 3200 TPD as 100% sulfuric acid on a 24-hour basis. [Rule 62-210.200, F.A.C. (Definitions - Potential Emissions)]
5. This emission unit is allowed to operate continuously (8760 hours/year) [Rule 62-210.200, F.A.C. (Definitions - Potential Emissions)]
6. The permittee shall install approximately 586,000 liters of vanadium catalyst in the two converters. A change to another SO₂ control strategy shall not occur without the Department's review and approval and shall require submittal of a permit modification request to revise the Best Available Control Technology Determination. [Rules 62-4.070 and 62-212.400, F.A.C.]

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SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

7. The permittee shall install new impaction-based or Brownian diffusion-based mist eliminators to reduce emissions of sulfuric acid mist from the final tower. [Rule 62-4.070 and 62-212.400, F.A.C.]
8. The permittee shall comply with all applicable requirements of the Department's sulfur storage and handling rule. [Rule 62-296.411, F.A.C.]
9. No person shall cause, suffer, allow, or permit the discharge of air pollutants which cause or contribute to an objectionable odor. [Rule 62-296.320, F.A.C.]
10. Plant and emission control equipment operating parameters determined during compliance testing and/or inspection that will establish the proper operation of each emissions unit shall be included in the Title V permit. [Rule 62-297.310, F.A.C. and 62-4.070(3), F.A.C.]
11. A continuous emissions monitoring system (CEMS) shall be installed, calibrated, maintained, operated, and used to determine compliance with the 24-hour emissions limit for SO₂. The CEMS shall be installed and certified before the initial performance test and operated in compliance with 40 CFR 60, Appendix F, Quality Assurance Procedures (1997 version) or other Department-approved QA plan; 40 CFR 60, Appendix B, Performance Specification 2 (1997 version).

The CEMS shall calculate and record emission rates in units of pounds of SO₂ per ton of 100 percent sulfuric acid produced. Each operating day, the average SO₂ emission rate for the previous 24 hours shall be calculated and recorded. Emissions shall be calculated in units of pounds of SO₂ per ton of 100 percent acid produced using one of the methods specified in 40 CFR 60.84. Averages are to be calculated as the arithmetic mean of each monitored operating hour from the previous 24 monitored operating hours. A monitored operating hour is each hour in which sulfur is burned in the unit and at least two emission measurements are recorded at least 15 minutes apart. Data taken during periods of startup, or when sulfur is not burned in the unit, or when the CEMS is out of control as defined in 40 CFR 60, Appendix F, Section 5.2 shall be excluded from the 24-hour average. Data recorded during periods of shutdown, malfunction, load change, and continuous operating periods shall be included in the daily calculation of the 24-hour average.

To the extent the monitoring system is available to record emissions data, the CEMS shall be operated and shall record data at all operating hours when sulfur is burned in the unit, including periods of startup, shutdown, load change, continuous operation and malfunction. Monitor downtimes and excess emissions based on 3-hour averages, which include startup emissions, shall be reported on a quarterly basis using the SUMMARY REPORT in 40 CFR 60.7. A detailed report of the cause, duration, magnitude, and corrective action taken or preventative measures adopted for each excess emission occurrence, and a listing of monitor downtime occurrences shall accompany the SUMMARY REPORT when the total duration of excess emissions is 1% or greater or if the monitoring system downtime is 5% or greater of the total monitored operating hours.

AIR CONSTRUCTION PERMIT 0570008-025-AC

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

The monitoring device shall meet the applicable requirements of Chapter 62-204, F.A.C., 40 CFR 60, Appendix F, and 40 CFR 60.13, including certification of each CEMS in accordance with 40 CFR 60, Appendix B, Performance Specifications and 40 CFR 60.7(a)(5) Notification Requirements. Data on monitoring equipment specifications, manufacturer, type calibration and maintenance requirements, and the proposed location of each stack probe shall be provided to the Department for review at least 30 days prior to installation of a new CEMS. [Rule 62-4.070 (3) F.A.C and Rule 62-204.800, F.A.C.]

12. Compliance with the emission limits for SO₂ and SAM shall be determined using the following reference methods as described in 40 CFR 60, Appendix A (1996, version), adopted by reference in Chapter 62-204, F.A.C.

Method 8 Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions from Stationary Sources. (for demonstrating compliance with 40 CFR 60, Subpart H)

Method 9 Visual Determination of the **Opacity of Emissions from Stationary Sources.**

These emissions units shall comply with all applicable requirements of Rule 62-297.310, F.A.C. General Test Requirements and 40 CFR 60.8 Performance Tests.

Testing of emissions shall be conducted with the emissions units operating at permitted capacity, which is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then the unit may be tested at less than 90% of the maximum operating rate allowed by the permit; in this case, subsequent source operation is limited to 110% of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than fifteen consecutive days for the purpose of additional compliance testing to regain the permitted capacity in the permit. [Rules 62-204.800, 62-297.310, 62-297.400, 62-297.401, F.A.C., and 40 CFR 60 Appendix A and 40 CFR 60.8, Subpart A].

13. An initial stack test for NO_x is required for informational purposes only. NO_x emissions shall be determined using EPA Reference Method 7E. [Rule 62-4.070, F.A.C.]
14. This facility shall maintain a central file containing all measurements, records, and other data that are required to be collected pursuant to this permit. Operators shall keep a daily operation and maintenance log to include, at a minimum, calibration logs for all instruments, maintenance/repair logs for any work performed on equipment or instruments, all measurements, records, and any other data required to be maintained by the permittee shall be retained for at least five (5) years following the data on which such measurements, records, or data are recorded. These data shall be made available to Department staff upon request. The Department shall be notified in writing at least 15 days prior to any emissions testing or auditing of any instrument required to be operated by these specific conditions in order to allow witnessing by authorized personnel. [Rule 62-4.070(3), F.A.C.]
15. This facility shall maintain adequate fencing, physical barriers, or equivalent around the facility property boundary to deter public access. [40 CFR 50.1(e)]
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Table 1 Air Pollutant Standards and Terms.

FACILITY ID NUMBER: 0570008

Permittee:
Cargill Fertilizer, Inc.

Permit No.: 0570008-025-AC
Sulfuric Acid Plant No. 7
Project to Increase Production to 3,200 tons per day

Emission Unit 004

E.U. ID#	Description	Pollutant ID	Fuel(s) [2]	Allowable Emissions [2]		Equivalent Emissions [3]		Basis
				Permit limits	lb/hr [1]	TPY		
4	Sulfuric Acid Plant	SO ₂	molten sulfur	4 lb/ton acid (3-hr)	533			NSPS
4	Sulfuric Acid plant	SO ₂	molten sulfur	3.5 lb/ton acid (24-hr)	467	2,044		BACT
4	Sulfuric Acid plant	SAM	molten sulfur	0.12 lb/ton acid	16	70		BACT
4	Sulfuric Acid plant	NOX	molten sulfur	0.12 lb/ton acid [4]	16	70		Application
4	Sulfuric Acid plant	VE	molten sulfur	10 % opacity				NSPS

ALLOWABLE OPERATING RATES

Hours of operation per year 8760
Sulfuric Acid Production 3200 tons per day [5]

NOTES

- (1) At a maximum sulfuric acid production rate of 3,200 TPD as 100 percent sulfuric acid.
- (2) Compliance Units. This emission unit facility shall demonstrate compliance based on these standards.
- (3) "Equivalent Emissions" are based on annual emissions at 8760 hrs/yr. The "Equivalent Emissions" are also listed for informational purpose and for PSD and recordkeeping tracking purposes.
- [4] Ton = 2000 pounds.
- [5] NOX limit is to demonstrate accuracy of permit application emission estimate.

APPENDIX A
BEST OPERATIONAL START-UP PRACTICES
FOR SULFURIC ACID PLANTS

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 SO₂ 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 SO₂ 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 of the 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 startup. 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 SO₂ 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.

APPENDIX A
BEST OPERATIONAL START-UP PRACTICES
FOR SULFURIC ACID PLANTS

(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

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 technologies 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 .

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

**Sulfuric Acid Plant
Cargill Fertilizer, Inc.
PSD-FL-250 and 0570008-025-AC
Riverview, Hillsborough County**

BACKGROUND

The applicant, Cargill Fertilizer, Inc., proposes to increase the capacity of its existing 2,200 tons per day (TPD) sulfuric acid plant (SAP No. 7) to 3,200 TPD. The plant is one of three SAPs at Cargill's fertilizer complex located at US Highway 41 South, Riverview, Hillsborough County. The proposed project will result in "significant increases" with respect to Table 62-212.400-2, Florida Administrative Code (F.A.C.) of emissions of sulfur dioxide (SO₂) and sulfuric acid mist (SAM). The project is therefore subject to review for Prevention of Significant Deterioration (PSD) and a determination of Best Available Control Technology (BACT) in accordance with Rule 62-212.400, F.A.C.

Descriptions of the process, project, ambient air quality effects, and rule applicability are given in the separate Technical Evaluation and Preliminary Determination issued with the Department's Intent and Public Notice package.

DATE OF RECEIPT OF A BACT APPLICATION:

The application received on May 1, 1998 included a proposed BACT determination prepared by the applicant's consultant, Golder Associates, Inc.

REVIEW GROUP MEMBERS:

A. A. Linero, P.E.

BACT DETERMINATION REQUESTED BY THE APPLICANT:

<u>POLLUTANT</u>	<u>CONTROL TECHNOLOGY</u>	<u>PROPOSED BACT LIMIT</u>
Sulfur Dioxide	Double Absorption Process Increase Catalyst Mass Volume per Ton of Acid Capacity by 10 percent	3.5 pounds per ton 100% H ₂ SO ₄ (24-hr)
Sulfuric Acid Mist	Impaction-Based Mist Eliminators	0.15 pounds per ton 100% H ₂ SO ₄

The plant with the proposed controls and limits will emit approximately 2,044 tons per year (TPY) of SO₂, 88 TPY of SAM, and 70 TPY of NO_x. The applicant proposes to use the same process and control technology as used in the past to achieve the proposed limits. These limits will be met by converting over 99.7 percent of SO₂ produced into sulfur trioxide (SO₃), absorbing the SO₃ in circulating streams of sulfuric acid, and minimizing SAM formation and losses by process controls and impaction-based mist eliminators.

APPENDIX BD

BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

BACT DETERMINATION PROCEDURE:

In accordance with Chapter 62-212, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

- Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.
- All scientific, engineering, and technical material and other information available to the Department.
- The emission limiting standards or BACT determination of any other state.
- The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically unfeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES:

The minimum basis for a BACT determination is the New Source Performance Standard (NSPS) for sulfuric acid plants built since 1971. This NSPS, promulgated by EPA as 40 CFR 60, Subpart H, was adopted by the Department by reference in Rule 62-204.800, F.A.C. It was re-affirmed in 1985 by EPA. The emission limits required by Subpart H are 4 pounds SO₂ per ton acid (lb SO₂/ton) based on 3 hour averaging, 0.15 lb SAM/ton acid, and 10 percent visibility. No National Emission Standard for Hazardous Air Pollutants exists for sulfuric acid plants.

EMISSION LIMITS AND BACT DETERMINATIONS BY EPA AND STATES:

Most sulfuric acid plant BACT determinations made to-date by EPA and the states, including the State of Florida, have been identical to the NSPS. Among the exceptions is General Chemical in Anacortes, Washington. In that case, Plant 3 undergoing a modification, was limited to the NSPS values for both SO₂ and SAM subject to subsequent testing. However, existing Plants 1 and 2 at the same facility and exhausting through the same stack, were limited to 1.159 lb SO₂/ton. An initial "BACT" limit was set for the combined stack emissions for the three units at 2.54 lb SO₂ /ton and 0.105 lb SAM/ton.

The General Chemical plants are double absorption plants like the Cargill plant. The feedstock at General Chemical is spent sulfuric acid and hydrogen sulfide whereas the feed at Cargill is elemental

APPENDIX BD

BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

sulfur. Following scrubbing, cleaning, and drying, the gas stream introduced to the first pass at the General Chemical plant is similar to that entering the first pass at the Cargill plant. The main distinction related to possible conversion and emissions control is that the gas strength of SO₂ going into the first pass at the General Chemical plants (8-12%) is more variable than the strength of SO₂ going into the first pass at Cargill. Also the General Chemical plants are much smaller than the Cargill plant. However no distinction was drawn or separate limits set in the preparation of the Subpart H standards which are equally applicable to both types of plants.

Recently, Mississippi Phosphates Corporation submitted an application to the State of Mississippi to increase production from 1650 TPD to 1786 TPD of acid at each of two plants. The increase will be attained by replacing pelletized vanadium (actually vanadium-containing) catalyst in the converters with low pressure drop, ring-shaped, vanadium catalyst. This will effectively debottleneck the plants with no other substantial changes. Mississippi Phosphates initially requested a limit of 3.25 lb SO₂/ton acid to avoid PSD review for SO₂. They proposed 0.15 lb SAM/ton acid and 10 percent opacity as BACT emission limits in satisfaction of PSD requirements. Ultimately, Mississippi issued a permit with short-term limits identical to those in the NSPS, but with future annual emissions capped at past actual annual emissions. These two plants use the same process as Cargill. One of them is the oldest double absorption process plant in the country.

In February 1998, the Department issued a permit to Piney Phosphates, Manatee County, to repair and restore to previous capacity a plant similar to the one under review. A BACT limit of 3.5 lb SO₂/ton acid on a 48-hour basis was specified for the project. In May, 1998 an Intent to Issue a permit for construction of a new 2,750 TPD sulfuric acid plant was issued to Farmland, Polk County. The BACT limit for SO₂ was determined to be 3.5 lb/ton acid on a 3-hour basis.

OTHER INFORMATION AVAILABLE TO THE DEPARTMENT:

Besides the information submitted by the applicant and that mentioned above, other information available to the Department consists of:

- Comments from the National Park Service dated May 27, May 29, and July 28, 1998.
- Comments from Hillsborough County dated May 29, June 30, and October 4.
- Papers written by Monsanto Enviro-Chem on sulfur dioxide emissions control
- Papers written by Monsanto Enviro-Chem on sulfuric acid processes
- Monsanto Enviro-Chem website information on technologies, catalysts, and pollution control
- Calgon Carbon/Monsanto Enviro-Chem joint press release on new SO₂ control technology
- Papers written by Haldor Topsoe on cesium catalysts and additional product information
- EPA background documents in support of NSPS and AP-42, Compilation of Emission Factors
- AWMA Air Pollution Control Manual

APPENDIX BD

BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

DETERMINATION BY DEP:

<u>POLLUTANT</u>	<u>CONTROL TECHNOLOGY</u>	<u>EMISSION LIMIT</u>
Sulfur Dioxide	Double Absorption Process	3.5 lb/ton 100% H ₂ SO ₄ (BACT, 24-hr)
	Increase Catalyst Mass Volume per Ton of Acid Capacity by 10 percent	4.0 lb/ton 100% H ₂ SO ₄ (NSPS, 3-hr)
Sulfuric Acid Mist	Impaction or Brownian Diffusion-Based Mist Eliminators	0.12 pounds per ton 100% H ₂ SO ₄ (BACT)

DETERMINATION RATIONALE:

A "Top-Down" BACT determination rapidly converges to variations of the established double absorption technology wherein the production process and the BACT are identical, thus eliminating the need for add-on control equipment. The applicant's BACT proposal for SO₂ is equivalent to the Department's BACT determination. The Department's BACT determination requires compliance with a 24-hour limit of 3.5 lb SO₂/ton acid. The 24-hour average SO₂ removal efficiency is approximately 99.74 percent (%). The Department's BACT determination for SAM is more stringent than the applicant's proposal. The underpinnings for the Department's determination are:

1. The Department reviewed the application submitted by Mississippi Phosphates to the State of Mississippi. The scope of the project by Cargill is greater than the project by Mississippi Phosphates, which initially proposed an emissions limit of 3.25 lb SO₂/ton acid to avoid PSD and BACT. The final permitted limit for the Mississippi Phosphates project is 4.0 lb SO₂/ton acid. The annual emission cap (limiting future annual emissions after the production increase to past emissions) will necessitate that emissions at the plant be maintained between 3.0 and 4.0 lb SO₂/ton acid.
2. The determination for SO₂ is more stringent than the one for the Piney Point Phosphates project. The 3.5 lb SO₂/ton acid emission limit for Cargill is based on 24-hours, whereas the one for Piney Point Phosphates is based on 48 hours.
3. In the opinion of the Department, use of "cesium-promoted" vanadium catalyst in the fourth pass can reduce SO₂ emissions by 20 to 40 percent (to between 3.2 and 2.4 lb/ton acid or 99.76 to 99.82% conversion efficiency) in a cost-effective manner. This option provides a benchmark against which the applicant can weigh all the options available for SO₂ emissions reduction. The recently-issued permit for the Piney Point Phosphates project requires installation of cesium-promoted catalyst in the final pass at that project.
4. Without considering averaging time, the proposed SO₂ limit for the Cargill (and Farmland and Piney Point) project(s) reflects a 12.5 percent reduction from the NSPS limit in SO₂ emissions while still allowing a reasonable margin for compliance. The proposed limit of 3.5 lb SO₂/ton acid at Cargill can be achieved over an averaging time of 24 hours. This will allow the applicant to correct and compensate for 3-hour SO₂ emissions greater than 3.5 (but less than 4 lb/ton) by achieving emissions lower than 3.5 lb/ton during the rest of the 24-hour period.

APPENDIX BD

BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

5. Cargill plans to increase the amount of conventional vanadium used in order to achieve the higher production rate of 3200 TPD. Rather than switching to cesium-promoted catalyst, Cargill determined that a further 10 percent increase in the amount of conventional catalyst will also achieve the lower emission rate.
6. Conventional vanadium ringed catalyst costs \$3.15 per liter (per Monsanto). Cargill will install an additional 48,000 liters of vanadium catalyst at a cost of over \$150,000 in addition to the catalyst required to achieve 3,200 TPD at 3.5 lb SO₂/ton acid.
7. In the BACT determination for Piney Point, the Department estimated that the cost-effectiveness of SO₂ removal by use of cesium-promoted catalyst is less than \$265 per ton of SO₂ removed. With the use of additional, but lower cost catalyst, together with the higher pressure drop, the cost-effectiveness will be about the same for the Cargill project as the Piney Point project.
8. Control options involving production of by-products or wastes are not necessary at Cargill. These needlessly require storage and handling of additional materials which unnecessarily complicate operations. Some of these processes were competitive prior to the development of the double absorption process. They have been phased out at many plants and are not seriously considered at any new or existing plants except where there is a market for the by-product (such as sodium sulfites used by pulp and paper mills).
9. There is no indication that add-on control methods are competitive with those which result in production of additional sulfuric acid when all costs are considered. The cost estimates available to the Department indicate they are generally more expensive than the cesium/vanadium catalyst alternative or simply adding more conventional catalyst and blower capacity. They remain available at the discretion of Cargill (particularly if there is a use for the by-products) as alternatives to achieve the Department's BACT SO₂ limits.
10. The Centaur process, which uses low temperature wet carbon catalysis/adsorption in place of the standard final pass and absorption tower, is viable and was (according to Monsanto and Calgon Carbon statements) demonstrated on a pilot scale at a sulfur burning plant. Commercial sales incorporating Centaur for 1000 TPD plants have been made to Philippines Phosphate Fertilizer Corporation and to a chemical company in Venezuela. It is licensed by Calgon Carbon and Monsanto Enviro-Chem. Emissions as low as 1 lb SO₂/ton acid are theoretically possible. However, the process has not yet been optimized and might result in a separate excess weak sulfuric acid stream (beyond plant water makeup needs) which might require treatment and disposal. Process optimization and building contingency treatment facilities would delay expansion of the plant.
11. The Department does not recommend the Centaur process at Cargill at this time. It remains an option that Cargill can choose if it prefers it over other alternatives. The process may actually gain appeal in future plants and modifications for economic reasons once the potential problems are determined and minimized.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

12. Additional impaction-based Monsanto Enviro-Chem "CS" mist eliminators will be installed in the final tower. According to the applicant, there are safety and difficult construction considerations associated with installing the larger High Efficiency mist eliminator models (such as the HE and ES lines) in the existing tower. The space required to remove SAM by Brownian Diffusion is such that the upper portion of the existing tower would need to be flared or a new tower would need to be installed.
13. It would cost \$2,000,000 to dismantle the existing tower and erect a new one. Together with the cost of the more expensive Brownian Diffusion mist eliminators, it is not cost-effective to require Cargill to replace the final tower in order to achieve a small reduction in SAM. The Brownian Diffusion option is considered BACT by the Department for new final towers and plants. The Department accepts Cargill's assertions regarding the safety and construction considerations regarding modifications of the existing final tower required to achieve a small reduction in SAM.
14. According to the application, SAM emissions ranged from a low of 0.010 to a high of 0.083 lb/ton at SAP No. 7. The Department also reviewed results of 11 tests (33 separate runs) conducted between 1989 and 1997 at the higher capacity SAPs Nos. 8 and 9. The averaged results of 3-run tests ranged from 0.01 to 0.05 lb/ton. The highest single run was approximately 0.08 lb/ton and is consistent with the results presented by the applicant for SAP No. 7.
15. According to the National Park Service, 0.10 lb SAM/ton acid is within the 95 percent confidence interval (after exclusion of "outliers") for SAM emission data collected by EPA.
16. Because Cargill will not install the Brownian Diffusion-based units (due to the special considerations cited), the Department will require that the impaction-based units be maintained such that they will achieve 0.12 lb/ton acid. This is lowest emission limit for SAM to-date at a sulfuric acid plant.
17. If Cargill installs a new tower or determines a safe way to physically modify the final tower, Brownian Diffusion mist eliminators will satisfy a "work practice" BACT in lieu of an emissions-based BACT.
18. The NSPS visibility limit of 10 percent opacity is consistent with the above discussion. There was no need to set a BACT opacity limit.
19. The increase in NO_x is not significant with respect to PSD. The NO_x limit of 0.12 lb/ton given in the application should insure that the increase will be small and not significant.

COMPLIANCE METHODOLOGY:

Demonstration of compliance with the NSPS limits shall be as required by Subpart H. These are EPA Reference Method 8 for SO₂ and SAM. EPA Methods 1, 2, and 3 shall be used to determine stack and flue gas properties. An initial compliance test for NO_x using EPA Method 7 or 7E is required to verify the low emission rate projected in the application.

APPENDIX BD

BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

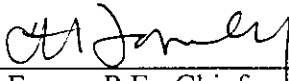
SO₂ emissions must be continuously monitored as required by Subpart H. The monitoring shall also be used to demonstrate compliance with the Department BACT emission limit for SO₂ on a 24 hour block average.

DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

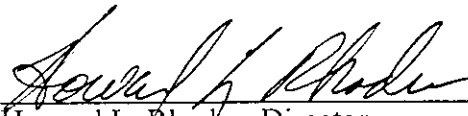
A. A. Linero, P.E., Administrator, New Source Review Section
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended By:

Approved By:



C. H. Fancy, P.E., Chief
Bureau of Air Regulation



Howard L. Rhodes, Director
Division of Air Resources Management

10/15/98

Date:

10/16/98

Date:

APPENDIX CSC

EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

SUBSECTION 1.0 CONSTRUCTION REQUIREMENTS

- 1.1 Applicable Regulations: Unless otherwise indicated in this permit, the construction and operation of the subject emission unit(s) 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 Florida Administrative Code Chapters 62-4, 62-103, 62-204, 62-210, 62-212, 62-213, 62-296, 62-297; and the applicable requirements of the Code of Federal Regulations Section 40, Part 60, adopted by reference in the Florida Administrative Code regulation [Rule 62-204.800 F.A.C.]. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements or regulations. [Rule 62-210.300, F.A.C.]

SUBSECTION 2.0 EMISSION LIMITING STANDARDS

- 2.1 General Particulate Emission Limiting Standards. General Visible Emissions Standard: Except for emissions units that are subject to a particulate matter or opacity limit set forth or established by rule and reflected by conditions in this permit, no person shall cause, let, permit, suffer, or allow to be discharged into the atmosphere the emissions of air pollutants from any activity, the density of which is equal to or greater than that designated as Number 1 on the Ringelmann Chart (20% opacity). [Rule 62-296-320(4)(b)1, F.A.C.]
- 2.2 Unconfined Emissions of Particulate Matter [Rule 62-296.320(4)(c), F.A.C.]
- (a) The owner or operators shall not cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any source whatsoever, including, but not limited to, vehicular movement, transportation of materials, construction, alteration, demolition or wrecking, or industrially related activities such as loading, unloading, storing or handling, without taking reasonable precautions to prevent such emission.
- (b) Any permit issued to a facility with emissions of unconfined particulate matter shall specify the reasonable precautions to be taken by that facility to control the emissions of unconfined particulate matter.
- (c) Reasonable precautions include the following:
- Paving and maintenance of roads, parking areas and yards.
 - Application of water or chemicals to control emissions from such activities as demolition of buildings, grading roads, construction, and land clearing.
 - Application of asphalt, water, oil, chemicals or other dust suppressants to unpaved roads, yards, open stock piles and similar activities.
 - Removal of particulate matter from roads and other paved areas under the control of the owner or operator of the facility to prevent reentrainment, and from buildings or work areas to prevent particulate from becoming airborne.

APPENDIX CSC

EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

- Landscaping or planting of vegetation.
- Use of hoods, fans, filters, and similar equipment to contain, capture and/or vent particulate matter.
- Confining abrasive blasting where possible.
- Enclosure or covering of conveyor systems.

NOTE: Facilities that cause frequent, valid complaints may be required by the Permitting Authority to take these or other reasonable precautions. In determining what constitutes reasonable precautions for a particular source, the Department shall consider the cost of the control technique or work practice, the environmental impacts of the technique or practice, and the degree of reduction of emissions expected from a particular technique or practice.

2.3 General Pollutant Emission Limiting Standards: [Rule 62-296.320, F.A.C.]

- (a) The owner or operator shall not store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems.
- (b) No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

NOTE: An objectionable odor is defined as any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [F.A.C. 62-210.200(198)]

SUBSECTION 3.0 OPERATION AND MAINTENANCE

3.1 Changes/Modifications: The owner or operator shall submit to the Permitting Authority(s), for review any changes in, or modifications to: the method of operation; process or pollution control equipment; increase in hours of operation; equipment capacities; or any change which would result in an increase in potential/actual emissions. Depending on the size and scope of the modification, it may be necessary to submit an application for, and obtain, an air construction permit prior to making the desired change. *Routine maintenance of equipment will not constitute a modification of this permit.* [Rule 62-4.030, 62-210.300 and 62-4.070(3), F.A.C.]

3.2 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 owner or operator shall notify the Permitting Authority as soon as possible, but at least within (1) working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; the 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

APPENDIX CSC

EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

any liability for failure to comply with the conditions of this permit and the regulations. [Rule 62-4.130, F.A.C.]

- 3.3 Circumvention: The owner or operator shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rules 62-210.650, F.A.C.]
- 3.4 Excess Emissions Requirements [Rule 62-210.700, F.A.C.]
- (a) Excess emissions resulting from start-up, shutdown or malfunction of these emissions units 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 Permitting Authority office for longer duration. [Rule 62-210.700(1), F.A.C.]
 - (b) Excess emissions that are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during start-up, shutdown, or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]
 - (c) In case of excess emissions resulting from malfunctions, the owner or operator shall notify Permitting Authority within one (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the problem; and the corrective actions being taken to prevent recurrence. [Rule 62-210.700(6), F.A.C.]
- 3.5 Operating Procedures: Operating procedures shall include good operating practices and proper training of all operators and supervisors. The good operating practices shall meet the guidelines and procedures as established by the equipment manufacturers. All operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. [Rule 62-4.070(3), F.A.C.]

SUBSECTION 4.0 MONITORING OF OPERATIONS

4.1 Determination of Process Variables

- (a) The permittee shall operate and maintain equipment and/or instruments necessary to determine process variables, such as process weight input or heat input, when such data is needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
- (b) Equipment and/or instruments used to directly or indirectly determine such process variables, including devices such as belt scales, weigh 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.]

APPENDIX CSC

EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

SUBSECTION 5.0 TEST REQUIREMENTS

- 5.1 Test Performance Within 60 days after achieving the maximum production rate at which these emission units will be operated, but not later than 180 days after initial startup and annually thereafter, the owner or operator of this facility shall conduct performance test(s) pursuant to 40 CFR 60.8, Subpart A, General Provisions and 40 CFR 60, Appendix A. No other test method shall be used unless approval from the Department has been received in writing. Unless otherwise stated in the applicable emission limiting standard rule, testing of emissions shall be conducted with the emission unit(s) operating at permitted capacity pursuant to Rule 62-297.310(2), F.A.C. [Rules 62-204.800, 62-297.310, 62-297.400, 62-297.401, F.A.C.]
- 5.2 Test Procedures shall meet all applicable requirements of the Florida Administrative Code Chapter 62-297. [Rule 62-297.310, F.A.C.]
- 5.3 Test Notification: The owner or operator shall notify the Permitting Authority in writing at least (30) days (initial) and 15 days (annual) prior to each scheduled compliance test to allow witnessing. The notification shall include the compliance test date, place of such test, the expected test time, the facility contact person for the test, and the person or company conducting the test. The (30) or (15) day notification requirement may be waived at the discretion of the Department. Likewise, if circumstances prevent testing during the test window specified for the emission unit, the owner or operator may request an alternate test date before the expiration of this window. [Rule 62-297.310 and 40 CFR 60.8, F.A.C.]
- 5.4 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 Rule 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C. or in a permit issued pursuant to those rules is being violated, it may require the owner or operator of the facility to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions units and to provide a report on the results of said tests to the Permitting Authority. [Rule 62-297.310(7)(b), F.A.C.]
- 5.5 Stack Testing Facilities: The owner or operator shall install stack testing facilities in accordance with Rule 62-297.310(6), F.A.C..
- 5.6 Exceptions and Approval of Alternate Procedures and Requirements: An Alternate Sampling Procedure (ASP) may be requested from the Bureau of Air Monitoring and Mobile Sources of the Florida Department of Environmental Protection in accordance with the procedures specified in Rule 62-297.620, F.A.C.
- 5.7 Operating Rate During Testing: Unless otherwise stated in the applicable emission limiting standard rule, testing of emissions shall be conducted with the emissions unit operation at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impracticable to test at permitted capacity, an emissions unit may be tested at less than the minimum

APPENDIX CSC

EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load 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. [Rule 62-297.310(2) and (3), F.A.C.]

SUBSECTION 6.0 REPORTS AND RECORDS

- 6.1 Duration: All reports and records required by this permit shall be kept for at least (5) years from the date the information was recorded. [Rule 62-4.160(14)(b), F.A.C.]
- 6.2 Emission Compliance Stack Test Reports:
- (a) A *test report* indicating the results of the required compliance tests shall be filed with the Permitting Authority as soon as practical, but no later than 45 days after the last sampling run is completed. [Rule 62-297.310(8), F.A.C.]
 - b) The *test report* shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in Rule 62-297.310(8), F.A.C.
- 6.3 Excess Emissions Report: If excess emissions occur, the owner or operator shall notify the Permitting Authority within (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident. Pursuant to the New Source Performance Standards, excess emissions shall also be reported in accordance with 40 CFR 60.7, Subpart A. [Rules 62-4.130 and 62-210.700(6), F.A.C.]
- 6.4 Annual Operating Report for Air Pollutant Emitting Facility: Before March 1st of each year, the owner or operator shall submit to the Permitting Authority this required report [DEP Form No. 62-210.900(5)], which summarizes operations for the previous calendar year. [Rule 62-210.370(3), F.A.C.]

SUBSECTION 7.0 OTHER REQUIREMENTS

- 7.1 Waste Disposal: The owner or operator shall treat, store, and dispose of all liquid, solid, and hazardous wastes in accordance with all applicable Federal, State, and Local regulations. This air pollution permit does not preclude the permittee from securing any other types of required permits, licenses, or certifications.

APPENDIX GC
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

- G.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.
- G.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 or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and 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.
- G.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.
- G.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.
- G.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.
- G.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.
- G.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.

APPENDIX GC
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

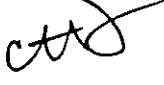
The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.


- G.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.
- G.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.
- G.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.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
- (a) Determination of Best Available Control Technology, attached and incorporated into this permit;
 - (b) Determination of Prevention of Significant Deterioration; and
 - (c) Compliance with New Source Performance Standards.
- G.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.
- G.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.

Memorandum

Florida Department of Environmental Protection

TO: Howard Rhodes

THRU: Clair Fancy 

FROM: A. A. Linero  10/14

DATE: October 14, 1998

SUBJECT: Cargill Fertilizer, Sulfuric Acid Plant No. 7
PSD-FL-250

Attached are the Final Determination, BACT determination, and Permit for the modification of Cargill Fertilizer's existing sulfuric acid plant (SAP No. 7). The project will increase the plant capacity from 2,200 to 3,200 TPD. We have made a BACT determination of 3.5 lb SO₂/ton acid and 0.12 lb SAM/ton acid. The applicant will achieve the SO₂ limit by installing additional conventional vanadium containing catalyst rather than replacing conventional catalyst with cesium-promoted catalyst. The SAM limit is the lowest in the country to-date.

There were a number of unresolved issues between the applicant and Hillsborough County including: odor control; treatment of SAM as particulate; application of a RACT opacity limit of 5 percent; consolidation of various simultaneous projects at Cargill; application of BACT to upstream and downstream units, and modeled SO₂ exceedances.

Most issues were resolved between Cargill and the County as detailed in a memo dated October 8. The matter of modeled exceedances will be resolved by the Department through the SIP process or Title V permitting. I did a full evaluation of the RACT issue in the Final Determination and found that the 5 percent opacity rule does not apply to this project because the Sulfuric Acid Plant limits in Rule 62-296.402, F.A.C. are considered by rule to satisfy RACT.

I recommend you approval and signature.

AAL/aal

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- Addressee's Address
- Restricted Delivery

Consult postmaster for fee.

is your RETURN ADDRESS completed on the reverse side?

3. Article Addressed to:
 David B. Jellerson, PE
 Carcell Jellerson
 8813 US Hwy 41 South
 Riverview, FL 33569

4a. Article Number
 2333 612 481

4b. Service Type
 Registered Certified
 Express Mail Insured
 Return Receipt for Merchandise COD

7. Date of Delivery
 10-19-98

5. Received By: (Print Name)
 C. Summerall

6. Signature: (Addressee or Agent)
 X

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994 102595-97-B-0179 Domestic Return Receipt

Thank you for using Return Receipt Service.

Z 333 612 481

US Postal Service
Receipt for Certified Mail
 No Insurance Coverage Provided.
 Do not use for International Mail (See reverse)

Sent to	David Jellerson
Street & Number	Carcell
Post Office, State, & ZIP Code	Riverview, FL
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	10-16-98
	057600E-025-AR
	PSD-FI-750

PS Form 3800, April 1995