Golder Associates Inc.

6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500
Telephone (352) 336-5600
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Golder Associates

January 23, 1998

Mr. A. A. Linero, P.E.
New Source Review Section
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED
JAN 26 1998
BUREAU OF
AIR REGULATION

RE: Cargill Fertilizer, Inc.
AC29-241660
PSD-FL-209
Riverview Nos. 8 & 9 Sulfuric Acid Plants

Dear Mr. Linero: 0570008-022-AC

In March of 1995, Cargill Fertilizer, Inc., was issued the above-referenced construction permit to increase the production rate of the Nos. 8 and 9 Sulfuric Acid plants. The maximum production rate of the No. 8 Sulfuric Acid Plant was increased to 2,900 TPD 100 percent H_2SO_4, while the No. 9 Sulfuric Acid Plant was increased to 3,200 TPD 100 percent H_2SO_4. The total combined production rate of the Nos. 8 and 9 H_2SO_4 plants was limited to 5,700 TPD.

Cargill is nearing completion of the modifications to the sulfuric acid plants, and has found that the No. 9 Sulfuric Acid Plant is capable of achieving a production rate up to 3,400 TPD. As a result, Cargill desires to revise the construction permit to allow this higher production rate for the No. 9 plant. In order to assure no emissions increase on a short-term basis, the No. 8 plant maximum production rate will be decreased to 2,700 TPD. The combined maximum production rate of the two plants will remain at 5,700 TPD. This change will afford Cargill more flexibility in operating their sulfuric acid plants without increasing total emissions.

Based on our review of the current construction Permit, Specific Conditions 1, 2, 6, and 7 would need to be revised. The allowable emissions tables contained in Specific Conditions 6 and 7 should be revised as follows:

Standard for Sulfur Dioxide Plants	Production TPD	lb/ton	lb/hr	TPY
H_2SO_4 No. 8	2,700	4.0	450.0	1,971
H_2SO_4 No. 9	3,400	4.0	566.7	2,482
No. 8 & No. 9 Combined	5,700	4.0	950.0	4,161
Standard for Acid Mist				
H_2SO_4 No. 8	2,700	0.15	16.9	73.9
H_2SO_4 No. 9	3,400	0.15	21.3	93.1
No. 8 & No. 9 Combined	5,700	0.15	35.6	156.0

Enclosed is a check for $250 to cover the permit modification fee. Please call if you have any questions concerning this request.

Sincerely,

David A. Buff

David A. Buff, P.E.
Principal Engineer

SEAL

DB/lcb

cc: David Jellerson, Cargill
Bill Thomas, FDEP-SWD ✓
File (2)

cc: J. Reynolds, BAR
EPA
NPS

If IMAGESAFE logo in light gray tone is not present on back of document - Do not cash.

22035

GOLDER ASSOCIATES GAINESVILLE
3730 SHAMBLEE TUCKER ROAD
ATLANTA, GA 30341

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63-2/630
00320

PAY TO THE ORDER OF Florida Dept. of Environmental Protection $ 250.00

Two hundred fifty dollars & no/xx DOLLARS

FIRST UNION
First Union National Bank
Gainesville, Florida
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1-800-735-1012

FOR

David A. Buff

⑈022035⑈ ⑆063000021⑆ 2090002286047⑈

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF PERMIT

In the matter of an
Application for Permit by:

DEP File No. AC 29-241660
PSD-FL-209
Hillsborough Co.

Mr. David B. Jellerson
Cargill Fertilizer, Inc.
P. O. Box 9002
Bartow, Florida 33830
_____/

Enclosed is Permit Number AC 29-241660 (PSD-FL-209) for modifications to the sulfuric acid plants at Cargill Fertilizer's facility located in Riverview, Hillsborough County, Florida, issued pursuant to Section (s) 403, Florida Statutes.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of business on 3-7-95 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to
§120.52(11), Florida Statutes,
with the designated Department
Clerk, receipt of which is hereby
acknowledged.

(Clerk) 3-7-95 (Date)

Copies furnished to:
Bill Thomas, SWD
Jewell Harper, EPA
David A. Buff, P.E., KBN
Chris Shaver, NPS

Final Determination

Cargill Fertilizer, Inc.
Hillsborough County
Riverview, Florida

Sulfuric Acid Plant
Production Modifications

Permit Numbers: AC 29-241660
PSD-FL-209

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation

February 23, 1995

Final Determination

The Technical Evaluation and Preliminary Determination for the permit to increase production of the sulfuric acid plants at Cargill Fertilizer in Riverview, Hillsborough County, Florida, was distributed on November 14, 1994. The Notice of Intent to Issue was published in the Tampa Tribune on December 3, 1994. Copies of the evaluation were available for public inspection at the Department offices in Tampa and Tallahassee.

Comments on the evaluation and proposed permits were submitted by the applicant. No comments were submitted by the National Park Service and the U.S. Environmental Protection Agency.

Applicant's Comment

The applicant requested DEP to consider deleting the NO_X emission limit proposed for the sulfuric acid plants in terms of lb/ton 100 percent sulfuric acid produced, lb/hr and tons/yr.

DEP Response

DEP concurs with the applicant in deleting Specific Condition 4 of the permit that places an emission limit for NO_X. The estimated NO_X emissions are low, i.e., less than 100 ton per year from each plant. PSD review was not triggered for NO_X due to the modifications, and there are no state or federal emission limiting standards for NO_X emissions from sulfuric acid plants.

The final action of the Department will be to issue the PSD permit (PSD-FL-209) with the change noted above.

Department of Environmental Protection

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

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

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

Permit Number: AC 29-241660
PSD-FL-209
Expiration Date: Dec. 31, 1996
County: Hillsborough
Latitude/Longitude: 27°51'28"N
82°23'15"W
Project: Sulfuric Acid Plant

This permit is issued under the provisions of Chapter 403, Florida Statutes; Chapters 62-210, 212, 272, 296 and 297, Florida Administrative Code (F.A.C.); and, Chapter 62-4, F.A.C. The above named permittee is hereby authorized to perform the work or operate the emission unit/source shown on the application and approved drawings, plans, and other documents attached hereto or on file with the Department of Environmental Protection (Department) and specifically described as follows:

For the modifications to increase the No. 8 sulfuric acid plant production to 2,900 TPD 100% sulfuric acid and No. 9 sulfuric acid plant production to 3,200 TPD 100% sulfuric acid. The modifications involves physical change to these plants. The sources are located at the Cargill Fertilizer's facility on Highway 41 South in Riverview, Hillsborough County, Florida. The UTM coordinates of this facility are Zone 17, 363.3 km E and 3082.4 km N.

If construction has not commenced within 18 months of issuance of this permit, then the permittee shall obtain from the Department a review and, if necessary, a revision of the BACT determination and allowable emissions for the emission unit/source on which construction has not commenced.

The emission unit/source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:
1. Cargill Fertilizer's application received November 24, 1993.
2. Department's letter dated December 20, 1993.
3. Cargill Fertilizer's letter dated June 10, 1994.
4. Department's letter dated July 11, 1994.
5. Cargill Fertilizer's letter dated August 10, 1994.

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

Printed on recycled paper.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or

GENERAL CONDITIONS:

auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

a. Have access to and copy any records that must be kept under the conditions of the permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and,

c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

a. a description of and cause of non-compliance; and,

b. the period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

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

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source

GENERAL CONDITIONS:

arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

(x) Determination of Best Available Control Technology (BACT)
(x) Determination of Prevention of Significant Deterioration (PSD)
(x) Compliance with New Source Performance Standards (NSPS)

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

GENERAL CONDITIONS:

for 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:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and,
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

1. The maximum production rate of the No. 8 sulfuric acid plant shall not exceed 2900 tons per day (TPD) based on 100% sulfuric acid (H_2SO_4).

2. The maximum production rate of the No. 9 sulfuric acid plant shall not exceed 3200 TPD based on 100% H_2SO_4.

3. The combined maximum production rate of the No. 8 and No. 9 sulfuric acid plants shall not exceed 5700 TPD based on 100% H_2SO_4.

4. Testing of emissions shall be conducted with the emission unit operating at permitted capacity. Permitted capacity is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then emission units may be tested at less than 90% of the maximum operating rate allowed by the permit. In this case, subsequent emission unit operation is limited to 110% of the test load until a new test is

SPECIFIC CONDITIONS:

conducted. Once the emission unit is so limited, then operation at higher capacities is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to regain the permitted capacity in the permit, with prior notification to the Department. The Department's Southwest District office shall be notified in writing 15 days prior to emission unit testing. Written reports of the tests shall be submitted to that office within 45 days of test completion.

5. The No. 8 and No. 9 sulfuric acid plants shall be allowed to operate continuously (i.e., 8760 hours/year).

Standard for sulfur dioxide.

6. Sulfur dioxide (SO_2) emissions from each sulfuric acid production unit shall be as follows, [Rule 62-296.800, F.A.C.; 40 CFR 60.82(a)]:

Plants	Production TPD	lb/ton	lbs/hr	TPY
H_2SO_4 No. 8	2900	4	483.3	2,117
H_2SO_4 No. 9	3200	4	533.3	2,336
No. 8 & No. 9 Combined	5700	4	950	4,161

Standard for acid mist.

7. Acid mist emissions, expressed as H_2SO_4, from each sulfuric acid production unit shall be as follows; [Rule 62-296.800, F.A.C.; 40 CFR 60.83(a)(1)]

Plants	Production TPD	lb/ton	lbs/hr	TPY
H_2SO_4 No. 8	2900	0.15	18.1	79.3
H_2SO_4 No. 9	3200	0.15	20.0	87.6
No. 8 & No. 9 Combined	5700	0.15	35.6	156.0

8. Visible emissions from each sulfuric acid production unit shall not be greater than 10 percent opacity.
[Rule 62-296.800, F.A.C.; 40 CFR 60.83(a)(2)]

SPECIFIC CONDITIONS:

Emission monitoring

9. A continuous monitoring system for the measurement of sulfur dioxide shall be installed, calibrated, maintained, and operated. The pollutant gas used to prepare calibration gas mixtures under Performance Specification 2 and for calibration checks under 40 CFR 60.13(d) shall be sulfur dioxide (SO_2). Method 8 shall be used for conducting monitoring system performance evaluations under 40 CFR 60.13(c) except that only the sulfur dioxide portion of the Method 8 results shall be used. The span value shall be set at 1000 ppm of sulfur dioxide. [Rule 62-296.800, F.A.C.; 40 CFR 60.84(a)]

10. A conversion factor shall be established by the owner or operator for the purpose of converting monitoring data into units of the applicable standard (kg/metric ton, lbs/ton). The conversion factor shall be determined, as a minimum, three times daily by measuring the concentration of sulfur dioxide entering the coverter using suitable methods (e.g., the Reich test, National Air Pollution Control Administration Publication No. 999-AP-13) and calculating the appropriate conversion factor for each eight-hour period as follows:

$CF=k[(1,000-0.015r)/(r-s)]$
where:
CF=conversion factor (kg/metric ton per ppm, lb/ton per ppm).
k=constant derived from material balance. For determining CF in metric units,k=0.0653.
For determining CF in English units, k=0.1306.
r=percentage of sulfur dioxide by volume entering the gas coverter. Appropriate corrections must be made for air injection plants subject to the Administrator's approval.
s=percentage of sulfur dioxide by volume in the emissions to the atmosphere determined by the continuous monitoring system required under 40 CFR 60.84(a).
[Rule 62-296.800, F.A.C.; 40 CFR 60.84(b)]

11. The owner or operator shall record all conversion factors and values under 40 CFR 60.84(b) from which they were computed (i.e., CF, r, and s).
[Rule 62-296.800, F.A.C.; 40 CFR 60.84(c)]

12. Alternatively, a source that processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen may use the following continuous emission monitoring approach and calculation procedures in determining SO_2 emission rates in terms of the standard. This procedure is not required, but is an alternative that would alleviate problems encountered in the

SPECIFIC CONDITIONS:

measurement of gas velocities or production rate. Continuous emission monitoring of SO_2, O_2, and CO_2 (if required) shall be installed, calibrated, maintained, and operated by the owner or operator and subjected to the certification procedures in Performance Specifications 2 and 3. The calibration procedure and span value for this SO_2 monitor shall be as specified in 40 CFR 60.84(b). The span value for CO_2 (if required) shall be 10 percent and for O_2 shall be 20.9 percent (air). A conversion factor based on process rate data is not necessary.

Calculate the SO_2 emission rate as follows:
$Es=(csS)/[0.265-(0.126\%O_2)-(A\ \%CO_2)]$
where:
Es=emission rate of SO_2, kg/metric ton (lb/ton) of 100 percent of H_2SO_4 producted.
Cs=concentration of SO_2, kg/dscm (lb/dscf).
S=acid production rate factor, 368 dscm/metric ton (11,800 dscf/ton) of 100 percent H_2SO_4 produced.
$\%O_2$=oxygen concentration, percent dry basis.
A=auxiliary fuel factor,
=0.00 for no fuel.
=0.0226 for methane.
=0.0217 for natural gas.
=0.0196 for propane.
=0.0172 for No 2 oil.
=0.0161 for No 6 oil.
=0.0148 for coal.
=0.0126 for coke.
$\%CO_2$=carbon dioxide concentration, percent dry basis.

Note: It is necessary in some cases to convert measured concentration units to other units for these calculations:
Use the following table for such conversions:

From-	To-	Multiply by-
g/scm	kg/scm	10-3
mg/scm	kg/scm	10-6
ppm(SO_2)	kg/scm	2.660x10-6
ppm(SO_2)	lb/scf	1.660x10-7

[Rule 62-296.800, F.A.C.; 40 CFR 60.84(d)]

Test methods and procedures.

13. Testing shall be conducted in accordance with the test methods in 40 CFR 60, Appendix A, or other methods and procedures as specified in 40 CFR 60.85, except as provided in 40 CFR 60.8(b). Acceptable alternative methods and procedures are given in 40 CFR 60.85(b).
[Rule 62-296.800, F.A.C.; 40 CFR 60.85(a)]

SPECIFIC CONDITIONS:

14. Compliance with the SO_2, acid mist, and visible emission standards in 40 CFR 60.82(a), 40 CFR 60.833(a)(1), and 40 CFR 60.83(a)(2) shall be determined as follows:
a. The emission rate (E) of acid mist or SO_2 shall be computed for each run using the following equation:

E=(CQsd)/(PK)
where:
E=emission rate of acid mist or SO_2 kg/metric ton (lb/ton) of 100 percent H_2SO_4 produced.
C=concentration of acid mist or SO_2, g/dscm (lb/dscf).
Qsd=volumetric flow rate of the effluent gas, dscm/hr (dscf/hr).
P=production rate of 100 percent H_2SO_4, metric ton/hr (ton/hr).
K=conversion factor, 1000 g/kg (1.0 lb/lb).

b. Method 8 shall be used to determine the acid mist and SO_2 concentrations (C's) and the volumetric flow rate (Qsd) of the effluent gas. The moisture content may be considered to be zero. The sampling time and sample volume for each run shall be at least 60 minutes and 1.15 dscm (40.6 dscf).

c. Suitable methods shall be used to determine the production rate (P) of 100 percent H_2SO_4 for each run. Material balance over the production system shall be used to confirm the production rate.

d. Method 9 and the procedures in 40 CFR 60.11 shall be used to determine opacity.
[Rules 62-296.800 and 62-297.401, F.A.C.; 40 CFR 60.85(b)]

15. The owner or operator may use the following as alternatives to the reference methods and procedures otherwise specified in this permit:
a. If an emission unit processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen, the following procedure may be used instead of determining the volumetric flow rate and production rate:
(1) The integrated technique of Method 3 is used to determine the O_2 concentration and, if required, CO_2 concentration.
(2) The SO_2 or acid mist emission rate is calculated as described in 40 CFR 60.84(d), substituting the acid mist concentration for Cs as appropriate.
[Rules 62-296.800 and 62-297.401, F.A.C.; 40 CFR 60.85(c)]

16. No objectionable odors shall be allowed in accordance with Rule 62-296.200(123), F.A.C., [Objectionable Odor Prohibited].

17. Any change in the method of operation, equipment or operating hours which would reasonably be expected to result in an increase in emissions shall be submitted to the Department's Southwest District office for approval.

SPECIFIC CONDITIONS:

18. Excess emissions from the sulfuric acid plant resulting from startup, shutdown, malfunction, or load change shall be acceptable 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 three hours in any 24-hour period unless specifically authorized by the Department for a longer duration. Best operating practices shall be as follows:

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

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

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

SPECIFIC CONDITIONS:

d. Cold Start-Up Procedures.

(1) Converter.

(i) The inlet and outlet temperature at the first two masses of catalyst shall be sufficiently high to provide immediate ignition when SO_2 enters the masses. In no event shall the inlet temperature to the first mass be less than 800°F or the outlet temperature to the first two masses be less than 700°F.

These temperatures are the desired temperatures at the time the use of auxiliary fuel is terminated.

(ii) 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.

(2) 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.

e. Warm Restart.

(1) 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:

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

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

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

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

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

SPECIFIC CONDITIONS:

(2) 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.

19. Stack sampling facilities shall be provided by the permittee in accordance with Rule 62-297.345, F.A.C.

20. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before the expiration of the permit (Rule 62-4.090, F.A.C.).

21. An application for an operation permit must be submitted to the Department's Southwest District office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. The operation permit application shall include a set of conditions acceptable to the Department for startup/shutdown of the permittee's sulfuric acid plant. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (Rules 62-4.055 and 62-4.220, F.A.C.).

Issued this 2nd day
of March, 1995

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Virginia B. Wetherell

Virginia B. Wetherell, Secretary

Best Available Control Technology (BACT) Determination
Cargill Fertilizer, Inc.
Hillsborough County
Permit Number AC 29-241660
PSD-FL-209

The applicant proposes to increase No. 8 sulfuric acid plant production from 2500 tons per day (TPD) to 2,900 TPD and No. 9 sulfuric acid plant from 2,800 TPD to 3,200 TPD at the Cargill's phosphate fertilizer manufacturing facility on Highway 41 South in Riverview, Hillsborough County, Florida.

The proposed project will increase emissions of sulfur dioxide (SO_2) and sulfuric acid mist by more than the applicable significant emission rates. The project is therefore subject to Prevention of Significant Deterioration (PSD) review in accordance with Rule 62-212.400, Florida Administrative Code (F.A.C.).

The BACT review is part of the PSD review requirements in accordance with Rule 62-212.410, F.A.C.

Date of Receipt of a BACT Application: November 24, 1993.

Date Application Complete: August 29, 1994.

The BACT determination requested by the applicant is presented below:

Control Technology: Double Absorption/Fiber Mist Eliminators

Pollutant	Emission Limits
SO_2	4 lbs/ton of 100% H_2SO_4 produced
Sulfuric Acid Mist	0.15 lb/ton of 100% H_2SO_4 produced
Visible Emissions	10% opacity

Basis of Review:

This determination was based upon input from the applicant, EPA Region IV, and the Department's Bureau of Air Regulation.

BACT Determination Procedure:

In accordance with Chapter 62-212, F.A.C., Air Pollution, this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the 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:

(a) Any Environmental Protection Agency determination of Best Available Control Technology 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).

(b) All scientific, engineering, and technical material and other information available to the Department.

(c) The emission limiting standards or BACT determinations of any other state.

(d) 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 source in question the most stringent control available for a similar or identical source or source category. If it is shown that this level of control is technically or economically infeasible for the source 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.

BACT Determined by the Department:

Control Technology	Double Absorption/Fiber Mist Eliminators
Pollutant	Emission Limits
SO_2	4.0 lbs/ton of 100% H_2SO_4 produced
Sulfuric Acid Mist	0.15 lb/ton of 100% H_2SO_4 produced
Visible Emissions	10% opacity

BACT Determination Rationale

The Department's BACT determination is the same as that proposed by the applicant, determination completed by other states, and Standards of Performance for Sulfuric Acid Plants, 40 CFR 60 Subpart H, (double absorption process). The process in itself is the control technology for SO_2. The emission limits reflect conversion efficiency of around 99.7% of SO_2 to H_2SO_4. High efficiency mist eliminators are considered BACT for sulfuric acid mist. A review of BACT/LAER Clearinghouse indicates that the double absorption technology and the use of high efficiency mist eliminators is representative of BACT using the top-down approach.

Environmental Impact Analysis

The impact analysis for the BACT determination is based on 8,760 hours/year operation. The increment impact analysis and the ambient air quality analysis resulted in the following for SO_2 emissions:

Avg Time	Increment Impact (ug/m^3)	Increment (ug/m^3)	Predicted Ambient Air Quality Impact (ug/m^3)	Fla. AAQS (ug/m^3)
24-hr	26	91	239	260
3-hr	100	512	685	1300

Conclusion

The incremental impact and the ambient air quality impact from SO_2 emissions due to the proposed modification is in compliance with all air pollution regulations. The impacts associated with the proposed increase in production support the Department's determination that the emission limits established herein represent BACT.

Details of the Analysis May be Obtained by Contacting:

Syed Arif, Permit Engineer
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended by:

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

2/24, 1995
Date

Approved by:

Virginia B. Wetherell, Secretary
Dept. of Environmental Protection

2 March, 1995
Date

Best Available Control Technology (BACT) Determination
Cargill Fertilizer, Inc.
Hillsborough County
Permit Number AC 29-241660
PSD-FL-209

The applicant proposes to increase No. 8 sulfuric acid plant production from 2500 tons per day (TPD) to 2,900 TPD and No. 9 sulfuric acid plant from 2,800 TPD to 3,200 TPD at the Cargill's phosphate fertilizer manufacturing facility on Highway 41 South in Riverview, Hillsborough County, Florida.

The proposed project will increase emissions of sulfur dioxide (SO_2) and sulfuric acid mist by more than the applicable significant emission rates. The project is therefore subject to Prevention of Significant Deterioration (PSD) review in accordance with Rule 62-212.400, Florida Administrative Code (F.A.C.).

The BACT review is part of the PSD review requirements in accordance with Rule 62-212.410, F.A.C.

Date of Receipt of a BACT Application: November 24, 1993.

Date Application Complete: August 29, 1994.

The BACT determination requested by the applicant is presented below:

Control Technology Double Absorption/Fiber Mist Eliminators

Pollutant	Emission Limits
SO_2	4 lbs/ton of 100% H_2SO_4 produced
Sulfuric Acid Mist	0.15 lb/ton of 100% H_2SO_4 produced
Visible Emissions	10% opacity

Basis of Review:

This determination was based upon input from the applicant, EPA Region IV, and the Department's Bureau of Air Regulation.

BACT Determination Procedure:

In accordance with Chapter 62-212, F.A.C., Air Pollution, this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the 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:

(a) Any Environmental Protection Agency determination of Best Available Control Technology 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).

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(d) 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 source in question the most stringent control available for a similar or identical source or source category. If it is shown that this level of control is technically or economically infeasible for the source 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.

BACT Determined by the Department:

Control Technology	Double Absorption/Fiber Mist Eliminators
Pollutant	Emission Limits
SO_2	4.0 lbs/ton of 100% H_2SO_4 produced
Sulfuric Acid Mist	0.15 lb/ton of 100% H_2SO_4 produced
Visible Emissions	10% opacity

BACT Determination Rationale

The Department's BACT determination is the same as that proposed by the applicant, determination completed by other states, and Standards of Performance for Sulfuric Acid Plants, 40 CFR 60 Subpart H, (double absorption process). The process in itself is the control technology for SO_2. The emission limits reflect conversion efficiency of around 99.7% of SO_2 to H_2SO_4. High efficiency mist eliminators are considered BACT for sulfuric acid mist. A review of BACT/LAER Clearinghouse indicates that the double absorption technology and the use of high efficiency mist eliminators is representative of BACT using the top-down approach.

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Conclusion

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Details of the Analysis May be Obtained by Contacting:

Syed Arif, Permit Engineer
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended by:

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

2/24, 1995
Date

Approved by:

Virginia B. Wetherell, Secretary
Dept. of Environmental Protection

2 March, 1995
Date

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- Complete
- Complete item
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return this card to you.
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CARGill Fertilizer
P O Box 9002
Bartow, Fl 33830

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7. Date o

5. Signature (Addressee)

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6. Signature (Agent)
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P.O., State and ZIP Code Bartow, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
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Return Receipt Showing to Whom & Date Delivered	
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TOTAL Postage & Fees	$
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