Before the
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
3900 Commonwealth Boulevard
Tallahassee, Florida 32399

CARGILL FERTILIZER, INC.

Petitioner,

v.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Respondent

DEP File No. 0570008-026-AC (PSD - FL-251)

OGC Case No. 99-0708

PETITION FOR FORMAL ADMINISTRATIVE HEARING

Petitioner, CARGILL FERTILIZER, INC., by and through its undersigned counsel, requests a formal administrative hearing concerning the proposed Air Construction Permit No. 0570008-026-AC (PSD-FL-251), and in support thereof, states as follows:

1. This Petition is submitted pursuant to Sections 120.569 and 120.57(1), Florida Statutes, and Sections 28-106.201 and 62-110.106, Florida Administrative Code.

PARTIES

2. Petitioner is Cargill Fertilizer, Inc., whose address is 8813 US Highway 41 South, Riverview, Florida 33569, and whose phone number is 813-671-6297.

JUL 0 6 1999
Department of Environmental Protection
SOUTHWEST DISTRICT

RECEIVED
JUL 14 1999
BUREAU OF AIR REGULATION

3. Respondent, Florida Department of Environmental Protection is an agency of the State of Florida whose address is 3900 Commonwealth Boulevard, Tallahassee 32339.

STANDING

4. Petitioner is the applicant for the permit which is the subject of this Petition. Petitioner's substantial interest are affected by the issuance of the permit because Petitioner would be obligated under threat of civil and criminal liability to comply with each of the terms and conditions of this permit.

NOTICE AND TIMELINESS

5. Petitioner first received notice of Respondent's proposed agency action on April 19, 1999 and published the Intent to Issue on April 23, 1999. On April 30, 1999, Petitioner requested an extension of time until May 31, 1999 in which to file a petition for administrative hearing. Respondent granted the requested extension on May 10, 1999. On May 26, 1999, Petitioner requested a further extension of time in which to file a Petition for Administrative Hearing. On June 8, 1999, Respondent granted the extension until June 30, 1999.

FACTS

6. Respondent has issued a Draft Permit which is attached as Exhibit 1. The Draft Permit includes a Technical Evaluation and Preliminary Determination, a proposed permit with numerous specific conditions, and a Best Available Control Technology Determination.

7. The expiration date of the proposed permit is December 31, 2000.

8. Emission Unit(s) Specific Condition 6 limits visible emissions from the stack to 10% opacity.

9. The Best Available Control Technology Determination included in the Draft Permit provides that "Recent BACT Determinations" are the basis for the 10% opacity limit for visible emissions. See Appendix BD at page BD-5.

10. Emission Unit(s) Specific Condition 8 imposes a mandatory requirement that the total pressure drop across the primary and secondary scrubber units be maintained at a minimum of 18 inches H_2O and that the total pressure drop across the venturi/clyconic cooler scrubber be maintained at a minimum pressure drop of 13.5 inches H_2O.

11. The Best Available Control Technology Determination included in the Draft Permit provides that the BACT requirement will be satisfied by maintaining minimum pressure drops of 18 inches and 13.5 inches respectively. See Appendix BD at page BD-5.

DISPUTED FACTS

12. The proposed expiration date of December 31, 2000, does not provide adequate time to complete the construction and testing required under the permit.

13. Respondent has based the permit's 10% opacity limit for visible emissions on "Recent BACT Determinations" but has not included any references to such determinations. In fact, a 15% opacity limit for visible emissions is consistent with recent BACT determinations and the specific conditions of several other similar

emission sources. Further, a 10% opacity limit is difficult to accurately measure at sources where there is a condensing steam plume such as present at this facility.

14. The level of Particulate Matter (PM) emissions from Petitioner's facility are determined by a variety of factors including time, production levels, characteristics of the material, temperature, and pressure. The total pressure drop measures only one of these parameters. Therefore, the correlation between pressure drop and PM emissions is dependent on a variety of factors and PM emissions can be achieved at different pressure drops.

15. Respondent has not made a determination that there are technological or economic limitations on measurement methodologies for PM emissions such that minimum pressure drop limitations are required to satisfy the BACT requirement for PM. In fact, direct measurements of PM at alternate pressure drops is feasible and is commonly performed.

16. Respondent has not performed a BACT analysis of the energy, environmental and economic impacts of imposing minimum pressure drops as a BACT requirement.

17. Respondent has imposed minimum pressure drop limitation as a direct BACT requirement without regard to the imposition of an emission limit on a regulated pollutant.

18. Respondent has applied minimum pressure requirements in other permits such that the requirement has become a statement of general applicability.

APPLICABLE RULES AND STATUTES

19. Section 62-4.210, FAC, provides that construction permits may provide for a period to operate and test in addition to the time necessary to construct. The proposed expiration date of December 31, 2000 does not allow sufficient time to accomplish these tasks. Further, the comparable federal rule, 40 CFR 52.21(r) provides that construction be commenced within 18 months of approval. In order to be reasonably consistent with federal provisions, Respondent must provide adequate time to allow for construction and testing.

20. The requirement that BACT be applied to preconstruction reviews is set forth in Section 62-212.400 (5) (c) FAC.

21. The definition of BACT is set forth in Section 62-210.200 (42), FAC and reads as follows:

> (42) "Best Available Control Technology" or "BACT" – An emission limitation, including a visible emissions standard, 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 (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of each such pollutant.
>
> (a) If the Department determines that technological or economic limitations on the application of measurement methodology to a particular part of an emissions unit or facility would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reductions achievable by implementation of such design, equipment, work practice or operation.

> (b) Each BACT determination shall include applicable test methods or shall provide for determining compliance with the standard(s) by means which achieve equivalent results.

22. The 10% opacity limit for visible emissions is not required by BACT because Respondent did not perform a case by case analysis of the economic, energy and environmental impacts which determined that such a limit is required. In fact, Respondent has imposed a 15% opacity limit in several other permits covering emission sources.

23. The 10% opacity limit for visible emissions is inappropriate because the test methodology and level of accuracy for determining visible emissions are difficult to implement at a facility where there is also condensing steam present.

24. Respondent cites three regulatory provisions as support for Emission Unit Specific Condition 8 which specifies the minimum pressure drop limitations. None of the cited rules provide any basis for such limitations. The rules cited by Respondent are as follows:

a. Rule 62-297.310. This rule is entitled "General Compliance Test Requirements" and sets forth a variety of requirements regarding testing procedures and methodologies. Nothing in the rule purports to impose any requirements regarding minimum pressure drops for pollution control devices nor any requirements regarding PM emissions.

b. Rule 62-296.800. This rule was repealed on March 3, 1996.

c. 40 CFR 60.223 (c). This is a federal regulation which requires that the owner or operator of any granular diammonium phosphate plant

(subject to that rule) install and operate a monitoring devise to measure pressure drop across the scrubbing system. Nothing in this regulation establishes any pressure drop limitations and the only requirement is that pressure drop be measured. Further, 40 CFR 60.223 (c) applies to diammonium phosphate plants whereas this plant is a monoamonuim phlosphate plant and therefore not subject to this regulation.

25. The definition of BACT in Rule 62-210.200 (42) provides that Respondent will establish an emission limitation for each pollutant which is achievable based on energy, environmental and economic factors. Respondent has established a BACT limitation for PM based on such an analysis. Pressure drop is not a pollutant itself, but merely an operating parameter used to evaluate operating conditions of the control equipment.

26. The rule definition of BACT also provides that if Respondent determines that if there are technological or economic limitations on the application of measurement technology which make the imposition of an emissions standard infeasible, then a design, equipment, work practice or combination thereof, may be prescribed instead to satisfy BACT. Respondent has established a BACT emission limit for the pollutant PM. Respondent has not made a determination that measurement technology is inadequate for this PM limit. Where an emissions standard has been imposed the BACT definition does not allow the imposition of an operating parameters such as pressure drop.

27. Even if the rule definition of BACT allowed for the imposition of operating parameters where emission limits were already established, it would be

inappropriate to do so here because there is no direct, consistent correlation between pressure drop and particulate matter emissions.

28. Recently the United States Environmental Protection Agency (EPA) adopted a final rule for National Emissions Standards for Hazardous Air pollutants for Phosphoric Acid Manufacturing and Phosphate Fertilizers Production. The new rule addresses the use of operating parameters for establishing violations of Maximum Achievable Control Technology (MACT) standards. Section 64 Fed. Reg. 111 at pages 33164-33165, a copy of which is attached as Attachment 1. Under the air pollution regulatory scheme of both EPA and Florida MACT standards are more stringent and restrictive than BACT standards. EPA concluded that there was not a direct correlation between operating parameters and emission limits. EPA also determined that the operating parameters should not be imposed as MACT emission limits but that such parameters could be independently imposed to help assure that MACT is being complied with on a continuous basis. EPA's final rule allows sources to establish operating limits (including pressure drops) based on baseline values established in either historic performance tests or **in subsequent performance tests conducted specifically to establish such limits.** See 40 CFR 63.05 (d)(2). The ability to modify the pressure drop based on the operating limits used in subsequent testing is exactly the relief which Petitioner is seeking here. If EPA has allowed for such a procedure for the more stringent MACT, Respondent must provide for a similar opportunity under BACT in this permit.

29. The imposition of the minimum pressure drop requirement in a PSD construction permit runs contrary to the compliance assurance monitoring

program adopted by Respondent. Under Respondent's Title V Program, sources are required to identify indicators of performance and corresponding ranges or conditions which reasonably assure compliance with an emission limit. Pressure drop in a venturi scrubber is specifically identified as an example of the kinds of indicators to be developed in a compliance assurance monitoring program. See 62-204.800 FAC incorporating by reference 40 DFR Pt. 64.3. This compliance assurance monitoring program allows sources to identify appropriate operating ranges and conditions.

30. Since Respondent has applied minimum pressure drops to several other similarly situation facilities, the imposition of this requirement meets the definition of a rule set forth in Section 120.52 (15), Florida Statutes. The minimum pressure drop requirement has not been formally adopted as a rule. Whenever an agency attempts to determine the substantial interest of a party based on an unadopted rule the agency must demonstrate pursuant to Section 120.59 (1)(e) that the unadopted rule:

> (a) Is within the powers, functions, and duties delegated by the Legislature or, if the agency is operating pursuant to authority derived from the State Constitution, is within that authority;
>
> (b) Does not enlarge, modify, or contravene the specific provisions of law implemented;
>
> (c) Is not vague, establishes adequate standards for agency decisions, or does not vest unbridled discretion in the agency;
>
> (d) Is not arbitrary or capricious;

(e) Is not being applied to the substantially affected party without due notice;

(f) Is supported by competent and substantial evidence; and

(g) Does not impose excessive regulatory costs on the regulated person, county, or city.

Respondent has not and can not, demonstrate that the unadopted rule imposing minimum pressure drop as BACT complies with Section 120.57(1)(e), FS.

WHEREFORE, the Petitioner respectfully request that the following relief be granted:

1. That the expiration date of the permit be extended until December 31, 2001;

2. That the 10% opacity limit for visible emissions set forth in Emission Unit(s) Specific Condition 6 be changed to a 15% opacity limit; and

3. That Emission Unit(s) Specified Condition 8 be changed to read as follows:

> The total pressure drops across the combined primary and secondary scrubber control systems for the two reactor/granulator units shall be maintained during normal operation at a minimum pressure drop of 18 inches H_2O unless the PM testing set forth in this condition demonstrates that the PM limit of Specific Condition 5 can be met at an alternative pressure drop. The total pressure drop across the venturi/cyclonic cooler scrubber shall be maintained at all times during normal operation at a minimum pressure drop of 13.5 inches H_2O unless the PM testing set forth in this condition demonstrates that the PM limit of Specific Condition 5 can be met at an alternative pressure drop. Instances may occur at other times such as low operating rates during which the total pressure drops may be less than the normal rate minimums. The permittee shall install, calibrate, operate and maintain monitoring devices that continuously

measure and record the total pressure drop across each scrubber. Accuracy of the monitoring devices shall be ± 5% over the operating range. Permittee may conduct PM testing at lower pressure drops in order to demonstrate that PM limitations can be achieved under such operating conditions.

Respectfully submitted,

Thos K Maurer

Thomas K. Maurer. Esq.
Florida Bar No. 03311447
Foley & Lardner
111 N. Orange Avenue, Suite 1800
Orlando, Florida 32801
Telephone: (407) 423-7656
Facsimile: (407) 648-1743

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that the foregoing Petition for Formal Administrative Hearing was sent via Federal Express to the Florida Department of Environmental Protection, Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32999-3000, and via facsimile to Kathy Carter, Agency Clerk, FDEP at 850-487-4938, this 29th day of June, 1999.

Thos K Maurer

Thomas K. Maurer. Esq.
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CLIENT/MATTER NUMBER
018445-0119

June 7, 2000

To: Al Linero
From: Doug Beason

VIA OVERNIGHT DELIVERY

Douglas Beason, Esq.
Office General Council
Department of Environmental Protection
3900 Commonwealth Blvd.
Tallahassee, FL 32399-3000

Re: Cargill Fertilizer, Inc.
Construction Permit #0570008-026-AC (PSD-FL-251);
OGC Case Number 99-0708

Dear Doug:

As you know, Cargill has filed a Petition For Hearing challenging the issuance of the above-referenced permit. Cargill's principle objection to permit conditions has always been specific pressure drop requirement. We met with the Department on November 16, 1999 in order to discuss Cargill's concern with this permit condition. At that meeting, Cargill took the position that the inclusion of operating controls was not appropriate as a BACT requirement and that normal operations include fluctuations in pressure drop. The Department took the position that this type of operating limitation was necessary to provide "reasonable assurances". The Department suggested that Cargill look at fan amps as another operational perimeter which could be included in a permit condition without causing the same difficulties in operation.

Over the past several months Cargill has evaluated the performance of unit design with respect of total scrubber pressure drop, scrubber liquid flows, and scrubber fan amps. Based on this evaluation, we do not believe that fan amp restrictions are appropriate for permit conditions. This determination is in part due to an inability of fan vendors to accurately predict fan amp during system design. In fact, the fan manufacturer, Chicago Blower, will not guarantee fan amps for system pressure drop and issues the following disclaimer:

> "No accurate or practical method of testing fans in the field has been developed by means of gas analysis or by use of the Pitot tube or other instruments, as values obtain from the field test vary so widely from actual results. Guarantees of the performance of the fans can only be made from laboratory tests conducting by the manufacturer in accordance with the 'Standard Test Code for Centrifugal and Axial Fans'."

Cargill has also engaged in discussions with experts involved in the manufacturing and design of scrubber technology, as well as performance testing. These experts agree with Cargill in that the inclusion of operational limitations on pressure drop, liquid flows, or fan amps is inappropriate in a construction permits. Instead, operational limitations regarding pressure drop should be established during emission testing.

As has been Cargill's position throughout this proceeding, Cargill agrees that the scrubber units should be subject to operational limitations but differs from the Department in how and when these limitations are established. The method which Cargill has proposed is consistent with how the Department has established operational limitations in other contexts. Before asking the Department to forward the Petition to DOAH, we would like to meet with the Department one more time to have our experts explain our position in detail to the Department staff and hear the Department more fully explain its position. We would appreciate if you would contact Al Linero, John Reynolds, and Clair Fancy to see if such a meeting can be arranged. Please let me know what dates are available and we will make every effort to accommodate the Department's schedule. Thank you for your consideration in this matter.

Sincerely,

Thos K Maurer

Thomas K. Maurer

cc: David Jellerson
Tom MacLeod
Ozzie Morris

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CARGILL FERTILIZER, INC.,

Petitioner,

vs.

OGC CASE NO. 99-0708

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION,

P50-FI-251

Respondent.
_____/

ORDER GRANTING REQUEST FOR EXTENSION OF TIME TO FILE PETITION FOR HEARING

This cause has come before the Florida Department of Environmental Protection (Department) on receipt of a request made by Petitioner, Cargill Fertilizer, Inc., to grant an extension of time to file a petition for an administrative hearing on Application No. 0570008-026-AC. See Exhibit 1.

Respondent, State of Florida Department of Environmental Protection, has no objection to it. Therefore,

IT IS ORDERED:

The request for an extension of time to file a petition for administrative proceeding is granted. Petitioner shall have until May 31, 1999, to file a petition in this matter. Filing shall be complete on receipt by the Office of General Counsel, Mail Station 35, Department of Environmental Protection, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000.

D ORDERED on this 10th day of May, 1999, in
ee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

F. PERRY ODOM
General Counsel

Douglas Building, MS #35
3900 Commonwealth Boulevard
Tallahassee, FL 32399-3000
Telephone: (850) 488-9314

CERTIFICATE OF SERVICE

I CERTIFY that a true copy of the foregoing was mailed to:

Thomas W. MacLeod
Cargill, Incorporated
Post Office Box 5624
Minneapolis, MN 55440-5624

on this 12th day of May, 1999.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

W. DOUGLAS BEASON
Assistant General Counsel
Florida Bar No. 379239

Mail Station 35
3900 Commonwealth Boulevard
Tallahassee, FL 32399-3000
Telephone: (850) 488-9314

CARGILL, INCORPORATED
LAW DEPARTMENT

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Corporate Vice President
General Counsel
& Secretary

Linda L. Cutler
Vice President
Assistant General Counsel
& Assistant Secretary

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Tracy L. Wessel
Geri L. Williams

April 30, 1999

Writer's Direct Dial Number

(612) 742-4653

Via Courier and Fax: (850) 487-4938

Office of General Counsel
Florida Department of Environmental Protection
3900 Commonwealth Boulevard
Mail Station 35
Tallahassee, Florida 32399-3000

ATTN: Cathy Carter

RE: Request for an extension to petition for an administrative hearing
Draft Permit No. PSD-FL-251
DEP File No. 0570008-026-AC
Cargill Fertilizer, Inc., 8813 Highway 40 South, Riverview, FL 33569

Dear Ms. Carter:

This letter is to request an extension until May 31, 1999 to petition for an administrative hearing on the above-referenced permit. This request is made on behalf of Cargill Fertilizer, Inc. ("Cargill"), which operates the Nos. 3 & 4 MAP Plants in Hillsborough County at 8813 Highway 40 South, Riverview, Florida 33569. Cargill received the Intent to Issue Air Construction Permit for this facility on April 19, 1999 and published the Intent to Issue on April 23, 1999. Cargill is requesting an extension until May 31, 1999. As good cause for granting the request for an extension of time to petition, Cargill states the following:

EXHIBIT 1

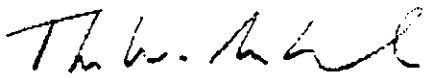
1. The draft Air Construction Permit contains numerous terms and conditions, several of which warrant clarification and/or correction under applicable law.

2. Cargill has sought to confer with the FDEP concerning these issues. However, the supervisor of the New Source Review Section is out of the office until May 3, 1999 and hence not available to meet. Cargill is optimistic that the FDEP and it can resolve these issues through additional discussion and will be seeking a meeting with the FDEP as soon as the supervisor's schedule allows.

3. Cargill files this request as a protective measure to avoid waiver of Cargill's right to challenge the permit as currently drafted. Granting this request will not prejudice either party but will further their mutual interest and likely avoid the need to initiate formal administrative proceedings.

If this request for an extension to petition for an administrative hearing is not granted, please consider this letter a request for an administrative hearing. If you have any questions on this matter, please contact me. Thank you for your assistance in this matter.

Sincerely yours,



Thomas W. MacLeod

TWM:jmm
cil/150041

cc: Mr. Al Linero, FDEP
D. Jellerson, Cargill/Tampa, FL

FOLEY & LARDNER
ATTORNEYS AT LAW
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111 NORTH ORANGE AVENUE, SUITE 1000
ORLANDO, FLORIDA 32801-2386
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FACSIMILE TRANSMISSION

Total # of Pages 19 **(including this page)**

TO:	PHONE:	FAX #:
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TOM MacLEOD	612-742-4653	612-742-6349

From:	Thomas K. Maurer
Sender's Direct Dial:	407-244-3242
Date:	August 2, 2001
Client/Matter No:	018445-0119
User ID No:	0497

Re: Cargill Fertilizer, Inc. v. FL DEP.

To
Sayed Arif

Please see attached.

From
David Jellerson

If there are any problems with this transmi
received all of the pages, please c

Operator:	Time Sent:	Return Original To:
		D. Sumney

Before the
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
3900 Commonwealth Boulevard
Tallahassee, Florida 32399

CARGILL FERTILIZER, INC.

Petitioner,

DEP File No.: 0570008-026-AC
(PSD-FL-251)

OGC Case No: 99-0708

v.

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION,

Respondent.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by U.S. Mail this 2nd day of August, 2001 to: Douglas Beason, Esq., Florida Department of Environmental Protection, 3900 Commonwealth Boulevard, Tallahassee, FL 32399.

Thomas K. Maurer
Florida Bar No. 0331147
Foley & Lardner
111 N. Orange Ave., Suite 1800
P.O. Box 2193
Orlando, FL 32802-2193
Telephone: (407)423-7656
Facsimile: (407) 648-1743

Before the
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
3900 Commonwealth Boulevard
Tallahassee, Florida 32399

CARGILL FERTILIZER, INC.

Petitioner,

DEP File No.: 0570008-026-AC
(PSD-FL-251)

OGC Case No: 99-0708

v.

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION,

Respondent.
_____/

Notice of Stipulated Dismissal

Petitioner, CARGILL FERTILIZER, INC., based upon the Stipulated Settlement Agreement attached hereto as Exhibit "A" and incorporated herein by reference, hereby dismisses its petition in this matter.

DATED this 2ND day of August, 2001.

Thos K Maurer

Thomas K. Maurer, Esq.
Florida Bar No. 03311447
Foley & Lardner
111 N. Orange Avenue, Suite 1800
Orlando, FL 32801
Phone: 407-423-7656
Fax: 407-648-1743

Before the
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
3900 Commonwealth Boulevard
Tallahassee, Florida 32399

CARGILL FERTILIZER, INC.

Petitioner,

DEP File No.: 0570008-026-AC
(PSD-FL-251)

OGC Case No: 99-0708

v.

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION,

Respondent.
_______________________________/

STIPULATED SETTLEMENT AGREEMENT

COME NOW, Petitioner, CARGILL FERTILIZER, INC., and Respondent, FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, who together stipulate as follows:

A. Statement of Facts

1. On April 19, 1999, Respondent published a Notice of Intent to Issue Air Construction Permit No. 0570008-026-AC (PSD-FL-251) for a facility located in Riverview, Florida, operated by Petitioner.

2. On June 29, 1999, Petitioner filed a Petition for Formal Administrative Hearing (the "Petition") challenging the Respondent's proposed issuance of the draft permit on several grounds.

3. During the last two (2) years, Petitioner and Respondent have worked together to reach a settlement of issues set forth in the Petition.

4. Petitioner and Respondent have successfully resolved all disputed conditions related to the draft permit, with the details of such resolution as set forth in Attachment 1 attached hereto and incorporated herein by this reference.

B. Stipulated Settlement

Petitioner and Respondent have agreed to settle the above-referenced matter as follows:

1. Air Construction Permit No. 0570008-026-AC (PSD-FL-251) shall be modified by revising the conditions thereof as set forth in Attachment 1.

2. The Petition filed by Petitioner in the above-reference matter is hereby dismissed with prejudice.

3. Each of the parties shall bear its own costs and attorney's fees.

4. This Stipulated Settlement Agreement is agreed to by all parties to this action.

Douglas Beason, Esq.
Florida Bar No. _____
Deputy General Counsel
Florida Department of Environmental Protection
3900 Commonwealth Boulevard
Tallahassee, FL 32399
Phone 850-488-9314
Fax: 850-921-3000

Thomas K. Maurer, Esq.
Florida Bar No. 0331147
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Orlando, FL 32801
Phone: 407-423-7656
Fax: 407-648-1743

FINAL DETERMINATION

CARGILL FERTILIZER, INC.
Nos. 3 and 4 MAP (Monoammonium Phosphate) Plant
Permit No. 0570008-026-AC
PSD-FL-251

An Intent to Issue Air Construction Permit to Cargill Fertilizer, Inc. for the modification of the Nos. 3 and 4 MAP Plant at the applicant's facility near Riverview, Hillsborough County, Florida was distributed on April 15, 1999. The proposed permit provided for the installation of air pollution control equipment and process modifications necessary to increase the production rate from 1,656 to 2,016 tons MAP per day (TPD).

The Public Notice of Intent to Issue Air Construction Permit was published in the Tampa Tribune on April 23, 1999. Copies of the draft construction permit and related documents were available for public inspection at the Department's offices in Tallahassee and Tampa and at the Environmental Protection Commission of Hillsborough County located in Tampa. No comments were received during the public comment period.

The applicant filed for an extension to petition for an administrative hearing on April 30, 1999. The Department issued an order granting request for extension of time to file petition for hearing on May 10, 1999. On May 26, 1999, the applicant requested a further extension of time in which to file a Petition for Administrative Hearing. On June 8, 1999, the Department granted the extension until June 30, 1999. The applicant filed a 'Petition for Formal Administrative Hearing' on June 29, 1999. The petition disputed with certain conditions of the draft permit. The disputed conditions were:

- The expiration date of the proposed permit.
- Visible Emissions limits.
- Requirements for maintaining a certain pressure drop across the primary and secondary scrubber.

The applicant met with the Department on November 16, 1999, in an effort to resolve these issues. The applicant's principle objection to permit conditions has been the specific pressure drop requirement. The Department suggested in the meeting that the applicant look at fan amps as another operational perimeter, which could be included in a permit condition without causing the same difficulties in operation. In a letter dated June 7, 2000, the applicant after evaluating the performance of unit design with respect to total scrubber pressure drop, scrubber liquid flows, and scrubber fan amps, surmised that the fan amps restrictions are inappropriate for permit conditions. This determination was in part due to inability of fan vendors to accurately predict fan amp during system design.

The applicant met with the Department again on September 19, 2000, where the final permit language was agreed. Based on that meeting the following permit conditions will be changed:

Permit Cover Page – Expiration date will be changed from December 31, 2000 to June 1, 2003.

Specific Condition 5

From:

Particulate matter emissions shall not exceed 7.0 lb/hr and 30.66 TPY based on 0.08 lb/ton MAP product. **[Rule 62-212.400, F.A.C.]**

To:

Particulate matter emissions shall not exceed 5.0 lb/hr and 22.08 TPY based on 0.06 lb/ton MAP product. **[Rule 62-212.400, F.A.C.]**

Specific Condition 6

From:

Visible emissions from the stack shall not exceed 10% opacity. **[Rule 62-212.400, F.A.C.]**

To:

Visible emissions from the stack shall not exceed 15% opacity. **[Rule 62-212.400, F.A.C.]**

Specific Condition 8

From:

The total pressure drop across the combined primary and secondary scrubber control systems for the two reactor/granulator units shall be maintained at all times during normal operation at a minimum pressure drop of 18 inches H_2O. The total pressure drop across the venturi/cyclonic cooler scrubber shall be maintained at all times during normal operation at a minumum pressure drop of 13.5 inches H_2O. Instances may occur at other times such as low operating rates during which the total pressure drop may be less than the normal rate minimums. The permittee shall install, calibrate, operate and maintain monitoring devices that continuously measure and record the total pressure drop across each scrubber. Accuracy of the monitoring devices shall be $\pm$ 5% over the operating range. **[Rules 62-297.310, 62-296.800; 40 CFR 60.223 (c), F.A.C.]**

To:

Prior to installation of the pollution control equipment, the permittee shall submit to the Department the proposed design information along with a manufacturer's guarantee that the equipment is capable of meeting the emission limitations established by the particulate BACT determination. The permittee shall install, calibrate, operate and maintain monitoring devices that continuously measure and record the total pressure drop across the scrubbing system. Accuracy of the devices shall be $\pm$ 5% over the operating range. **[Rule 62-212.400, F.A.C.]**

Specific Condition 9

From:

Before this construction permit expires, and annually, the subject emissions units shall be tested for compliance with the above emission limits. For the duration of all tests the emission units shall be operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then the emission unit may be tested at less than permitted capacity (i.e., 90% of the maximum operating rate allowed by the permit); in this case, subsequent emission unit operation is limited to 110 percent of the test load until a new test is 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. **[Rule 62-297.310, F.A.C.]**

To:

Before this construction permit expires, and annually, the subject emissions units shall be tested for compliance with the above emission limits. For the duration of all tests the emission units shall be operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then the emission unit may be tested at less than permitted capacity (i.e., 90% of the maximum operating rate allowed by the permit); in this case, subsequent emission unit operation is limited to 110 percent of the test load until a new test is 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.

In addition, the emissions tests shall be used to establish pressure drop limitations in the operating permit. These pressure drop limits shall not be more than 10% below the lowest average pressure drop at which the compliance has been demonstrated. In addition, if the particulate matter emissions in such compliance tests exceed 0.05 lb PM/ton MAP, then the lowest average pressure drop during that compliance test shall be the minimum operating level allowed. Once the pressure drop is so limited, the operation at a lower pressure drop is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to demonstrate compliance at the lower pressure drop. **[Rule 62-297.310, F.A.C.]**

PM BACT Analysis – PM BACT determination will be changed to reflect 0.06 lb PM/ton MAP produced without establishing a specific pressure drop as part of the BACT.

Therefore, the final action of the Department will be to issue the permit with the changes noted above.

PERMITTEE:

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

Authorized Representative:

David Jellerson
Environmental Superintendent

File No.	0570008-026-AC
Permit No.	PSD-FL-251
SIC No.	2874
Project:	MAP Plant Expansion
Expires:	June 1, 2003

PROJECT AND LOCATION:

Permit for the construction/modification of the Nos. 3 & 4 MAP Plant that produces monoammonium phosphate. The project involves the installation of air pollution control equipment and process modifications necessary to increase the production rate from 1,656 to 2,016 tons MAP per day (TPD). The project is located at the Cargill Fertilizer facility, 8813 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 the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297. 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).

ATTACHED APPENDICES ARE MADE A PART OF THIS PERMIT:

Appendix BD	BACT Determination
Appendix GC	Construction Permit General Conditions

Howard L. Rhodes, Director
Division of Air Resources
Management

AIR CONSTRUCTION PERMIT PSD-FL-251 (0570008-026-AC)

SECTION II - ADMINISTRATIVE REQUIREMENTS

FACILITY DESCRIPTION

Cargill Fertilizer, Inc. operates a phosphate fertilizer manufacturing facility near Riverview, Hillsborough County, Florida, producing sulfuric acid, wet-process phosphoric acid, ammoniated phosphate fertilizers and related products. The company has applied to increase the production rate from 1,656 TPD to 2,016 TPD at its Nos. 3 & 4 MAP Plant. As a result of this production rate increase, increases in the actual particulate matter (PM), PM with an aerodynamic diameter of 10 microns or less (PM_{10}), sulfur dioxide (SO_2), fluoride (F) and other pollutant emissions including ammonia (NH_3) will occur.

REGULATORY CLASSIFICATION

The MAP Plant is classified as a "Major or Title V Source" per Rule 62-210.200, F.A.C., because it has the potential to emit at least 100 tons per year of particulate matter when potential fugitive emissions are included with potential controlled emissions.

Phosphate rock processing 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 a regulated pollutant 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 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).

PERMIT SCHEDULE:

- 06-08-98: Original Application Received
- 02-01-99: Revised Application Complete
- 04-15-99: Issued Intent to Issue Permit
- 04-23-99: Notice published in the Tampa Tribune

RELEVANT DOCUMENTS:

The documents listed below are specifically related to this permitting action and form the basis of the permit. They are on file with the Department:

- Application received 06-08-98
- Department's incompleteness letter dated 07-07-98
- Applicant's submittal received 02-01-99
- National Park Service's letter received 07-13-98
- Hillsborough County's letter received 03-03-99
- Technical Evaluation and Preliminary Determination dated 04-15-99
- Best Available Control Technology determination (issued concurrently with permit)
- Applicant filed Petition for Formal Administrative Hearing on 06-29-99

AIR CONSTRUCTION PERMIT PSD-FL-251 (0570008-026-AC)

SECTION II - 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 Department's Southwest District Office, 3804 Coconut Palm Drive, Tampa, Florida 33619-8218. 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 Blair Stone Road, MS 5505, 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 June 1, 2003 [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.]
7. Permit Approval: Approval to construct shall become invalid if construction is not commenced within 18 months after receipt of such approval, or if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified. [40 CFR 52.21(r)(2)].
8. BACT Determination: In conjunction with extension of the 18-month periods to commence or continue construction, or extension of the permit expiration date, the permittee may be required to demonstrate the adequacy of any previous determination of best available control technology for the source. [40 CFR 52.21(j)(4)]
9. Annual Reports: Pursuant to Rule 62-210.370(2), F.A.C., Annual Operation Reports, the permittee is required to submit annual reports on the actual operating rates and emissions from this facility. Annual operating reports using DEP Form 62-210.900(4) shall be sent to the DEP's Southwest District office by March 1st of each year.
10. Stack Testing Facilities: Stack sampling facilities shall be installed in accordance with Rule 62-297.310(6), F.A.C.
11. Quarterly Reports: Quarterly excess emission reports, in accordance with 40 CFR 60.7 (a)(7) (c) (1997 version), shall be submitted to the DEP's Northwest District office.

AIR CONSTRUCTION PERMIT PSD-FL-251 (0570008-026-AC)
SECTION III - EMISSIONS UNIT(S) SPECIFIC CONDITIONS

The Specific Conditions listed in this section apply to the following emission units:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
022	No. 3 MAP Plant
023	No. 4 MAP Plant
024	South Cooler

1. Unless otherwise indicated, the modification and operation of the subject MAP Plant shall be in accordance with the capacities and specifications stated in the application or in updated submittals. **[Rule 62-210.300, F.A.C.]**
2. The MAP Plant shall not produce more than 2,016 tons per day (84 tons per hour) of 100 percent MAP product. **[Rule 62-210.200, F.A.C.]**
3. The subject emission units are allowed to operate continuously (8760 hours/year). **[Rule 62-210.200, F.A.C.]**
4. Total fluoride emissions shall not exceed 1.72 lb/hr and 7.53 TPY based on 0.041 lb F/ton of P_2O_5 input. **[Rule 62-212.400, F.A.C.]**
5. Particulate matter emissions shall not exceed 5.0 lb/hr and 22.08 TPY based on 0.06 lb/ton MAP product. **[Rule 62-212.400, F.A.C.]**
6. Visible emissions from the stack shall not exceed 15% opacity. **[Rule 62-212.400, F.A.C.]**
7. Since natural gas is fired as the primary fuel, sulfur dioxide emissions from the stack shall be presumed as minimal and a sulfur dioxide compliance test shall be waived. Distillate oil with a maximum sulfur content of 0.5% sulfur by weight may be fired for up to 400 hours per year up to a maximum of 17,143 gallons per year. The firing rate of either fuel shall not exceed a total of 6 million BTU per hour for both plants. The permittee shall maintain records of the fuel oil supplier's sulfur content analysis. **[Rule 62-210.200(227), F.A.C.]**
8. Prior to installation of the pollution control equipment, the permittee shall submit to the Department the proposed design information along with a manufacturer's guarantee that the equipment is capable of meeting the emission limitations established by the particulate BACT determination. The permittee shall install, calibrate, operate and maintain monitoring devices that continuously measure and record the total pressure drop across each scrubber. Accuracy of the devices shall be ± 5% over the operating range. **[Rules 62-212.400, F.A.C.]**
9. Before this construction permit expires, and annually, the subject emissions units shall be tested for compliance with the above emission limits. For the duration of all tests the emission units shall be operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then the emission unit may be tested at less than permitted capacity (i.e., 90% of the maximum operating rate allowed by the permit); in this case, subsequent emission unit operation is limited to 110 percent of the test load until a new test is 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.

   In addition, the emissions tests shall be used to establish pressure drop limitations in the operating permit. These pressure drop limits shall not be more than 10% below the lowest average pressure drop at which the compliance has been demonstrated. In addition, if the particulate matter emissions in such compliance tests exceed 0.05 lb PM/ton MAP, then the lowest average pressure drop during that compliance test shall be the minimum operating level allowed. Once the pressure drop is so limited, the operation at a lower pressure

drop is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to demonstrate compliance at the lower pressure drop. [Rule 62-297.310, F.A.C.]

10. The Department's Southwest District office in Tampa shall be notified in writing at least 15 days prior to the compliance tests. Written reports of the test results shall be submitted to that office within 45 days of test completion. [Rule 62-297.310, F.A.C.]

11. The compliance test procedures shall be in accordance with EPA Reference Methods 1, 2, 3, 4, 5, 7E, 9 and 13A or 13B, as appropriate, as published in 40 CFR 60, Appendix A. 60, Appendix A. [Rules 62-204.800 and 62-297.310(7)(c), F.A.C.]

12. All measurements, records, and other data required to be maintained by this facility shall be retained for at least five (5) years following the date on which such measurements, records, or data are recorded. These data shall be made available to the Department upon request. [Rule 62-4.070(3), F.A.C.]

13. The permittee shall install, calibrate, maintain, and operate a monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The monitoring device shall have an accuracy of ±5 percent over its operating range. The permittee shall maintain a daily record of equivalent P_2O_5 feed by first determining the total mass rate in metric tons/hour of phosphorus bearing feed using a flow monitoring device equivalent to the requirements of 40 CFR 60.223(a) and 40 CFR 60.224(b)(3). [Rule 62-296.800, F.A.C.]

14. 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.]

15. No person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly. [Rule 62-210.650, F.A.C.]

16. The subject emissions units shall be subject to the following:

- Excess emissions resulting from startup, shutdown or malfunction of any source shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700, F.A.C.]
- Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown, or malfunction shall be prohibited. [Rule 62-210.700, F.A.C.]
- Considering operational variations in types of industrial equipment operations affected by this rule, the Department may adjust maximum and minimum factors to provide reasonable and practical regulatory controls consistent with the public interest. [Rule 62-210.700, F.A.C.]
- In case of excess emissions resulting from malfunctions, each source shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700, F.A.C.]

17. The permittee shall submit an Annual Operating Report using DEP Form 62-210.900(4) to the Department's Southwest District office by March 1 of the following year for the previous year's operation. [Rule 62-210.370, F.A.C.]

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

Cargill Fertilizer, Inc.
Nos. 3 & 4 MAP Plant Expansion
PSD-FL-251 / 0570008-026-AC
Riverview, Hillsborough County

Cargill Fertilizer, Inc., is proposing to modify the existing Nos. 3 & 4 Monoammonium Phosphate (MAP) plants at its phosphate fertilizer manufacturing facility located in Riverview, Florida. The MAP plant consists of two process units, the No. 3 MAP plant and the No. 4 MAP plant, and the South Cooler. The modifications will allow the MAP plant to increase the maximum production rate from 1,656 tons per day (TPD) [69 tons per hour (TPH)] of MAP to 2,016 TPD of MAP (84 TPH). As a result of this production rate increase, an increase in the actual emissions of particulate matter (PM), PM with an aerodynamic diameter of 10 microns or less (PM_{10}), fluorides (F), sulfur dioxide (SO_2), nitrogen oxides (NOx) and other pollutant emissions including ammonia (NH_3) will occur. Typically, NH_3 emissions from this process are not significant enough to be regulated since an acid scrubbing step is used to recover the NH_3 and return it to the process. NH_3 emissions are of concern primarily when accidental leaks occur during its storage or transport. NH_3 is not a listed hazardous air pollutant.

The increases for PM/PM_{10} and F emissions will exceed the significant levels listed in Table 212.400-2 of Rule 62-212.400, Florida Administrative Code (F.A.C.). The project is therefore subject to Prevention of Significant Deterioration (PSD) review for PM/PM_{10} and F in accordance with Rule 62-212.400, F.A.C. A Best Available Control Technology (BACT) determination is part of the review required by Rules 62-212.400 and 62-296, F.A.C. Air pollution control equipment will consist of wet scrubbers for PM/PM_{10} and F emissions.

PROCESS EMISSIONS

Compared below are the current actual emissions to the applicant's proposed maximum emissions in tons/year:

	PM	PM_{10}	F	SO_2	VOC	NO_X	CO
Current Actual Emissions (a)							
MAP Plant/Cooler	8.35	8.35	0.86	0.006	0.029	1.45	0.36
Phosphoric Acid Plant	-	-	3.55	-	-	-	
Material Handling System	15.29	15.29	-	-	-	-	-
Subtotal	23.64	23.64	4.41	0.006	0.029	1.45	0.36
Proposed Maximum Emissions (b)							
MAP Plant/Cooler @ 2,016 TPD	73.6	73.6	7.73	0.62	0.07	3.68	0.92
Phosphoric Acid Plant	-	-	10.03	-	-	-	-
Material Handling System	41.3	41.3	-	-	-	-	-
Subtotal	114.9	114.9	17.76	0.62	0.07	3.68	0.92
PSD Significant Emission Rate	25	15	3	40	40	40	100

Notes:
(a) PM/PM_{10} and F emissions based on average MAP hours of operation during 1996 and 1997 of 8,305 and 8,294 hours, respectively, and annual stack test results as follows:
1996: PM-2.81 lb/hr; F-0.23 lb/hr (Nos. 3 and 4 MAP Plants and South Cooler combined)
1997: PM-1.21 lb/hr; F-0.18 lb/hr (" " " " " " ")
Combustion related emissions based on average MAP Plant natural gas usage during 1996 and 1997 of 20.0 MMSCF

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

and 21.3, respectively, and AP-42.
(b) Proposed emission rates are 16.8 lb/hr for PM; and 1.76 lb/hr for fluoride

DATE OF RECEIPT OF COMPLETE BACT APPLICATION:

The original application received on June 8, 1998 was complete on February 1, 1999.

BACT DETERMINATION PROCEDURE:

In accordance with Chapter 62-212.400, 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.

The air pollutant emissions from this facility can be grouped into categories based upon the control equipment and techniques that are available to control emissions from these emission units. Using this approach, the emissions can be classified as indicated below:

- ***Fluorides*** (HF and SiF_4). Controlled generally by scrubbing with pond water.
- ***Particulate Matter*** (PM, PM_{10}). Controlled generally by wet scrubbing or filtration.
- ***Combustion Products*** (SO_2, NO_x). NOX controlled generally by good combustion of clean fuels. SO_2 controlled generally by scrubbing when quantities are substantial.
- ***Products of Incomplete Combustion*** (CO, VOC). Controlled generally by proper combustion.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the pollutant control equipment and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "non-regulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., PM, SO_2, H_2SO_4, fluorides, etc.), if a reduction in "non-regulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

BACT EMISSION LIMITS PROPOSED BY APPLICANT:

POLLUTANT	EMISSION LIMIT	LIMIT BASIS	CONTROL TECHNOLOGY
F	1.76 lb/hr	0.042 lb/ton P_2O_5 input	Packed scrubbers using pond water
PM/PM_{10}	16.8 lb/hr	0.20 lb/ton product	Venturi Scrubbers
VE	20% opacity	Permit AO29 256726	Same as PM

BACT ANALYSIS

GASEOUS FLUORIDES (F)

Fluoride-containing gases including hydrogen fluoride (HF) and silicon tetrafluoride (SiF_4) are evolved during the exothermic reaction between ammonia and phosphoric acid that occurs in the reactor and to a lesser extent in the granulator. Since the vent gases from the reactor/granulator contain ammonia in high concentrations, the first scrubbing stage uses a phosphoric acid stream as the scrubbing medium for recovery of ammonia so that it is recycled back to the process. A final stage of pond water scrubbing removes most of the fluoride evolved from the process as well as that which is stripped out of the phosphoric acid in the first stage scrubber. Gaseous fluoride and ammonia emissions from the cooler are relatively low and therefore do not require special controls. The Nos. 3 and 4 MAP Plants will be equipped with six scrubbers following the proposed modification. One will be a new packed tail gas scrubber while the other five are existing cyclonic scrubbers. The new tail gas scrubber design will be submitted to the Department for approval prior to installation. Two of the existing cyclonic scrubbers will use pond water as the first stage of fluoride scrubbing, followed by the new packed scrubber as the combined second stage fluoride scrubber for the two plants.

The top-down BACT determination for fluorides identified the control technologies listed below starting with the most stringent:

1. Packed scrubber using once-through fresh water.
2. Packed scrubber using neutralized water from a dedicated pond (fresh water makeup).
3. Packed scrubber using process cooling pond water.

Use of once-through fresh water would achieve the highest level of fluoride removal but this option is not practical for operations where water conservation is required and plant water balance problems would be created.

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BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

Option 2 is possible, the main considerations being the cost of installing the pond and equipment and the cost of operating a lime treatment unit. Lime treatment to a pH level of 3.5 to 4.0 causes fluorides to precipitate out of solution, primarily as calcium fluoride. At this point the water would contain as low as 50-60 ppm fluoride. With second-stage lime treatment to a pH of 6.0 or more, the calcium compounds (mainly dicalcium phosphate) precipitate out along with additional calcium fluoride. Upon settling at a pH in the range of 6.5 to 8.8, the fluoride content of the clear neutralized water may be as low as 15 ppm, depending on the quality of the neutralization facility and the mixing efficiency.

Costs for Option 2 are based on data submitted by the applicant and information from other sources. These include Phosphates and Phosphoric Acid, by Pierre Becker, 2nd ed., 1989, and Development Document for Interim Final Effluent Limitations Guidelines and Proposed New Source Performance Standards, USEPA, 1975:

Scrubber Pond with Liner (2 acres - spray cooling)	$ 75,000
Tanks, Pumps and Equipment	210,000
Other Costs	40,000
Total Installed Cost (T.I.C.)	$ 325,000
Raw Materials	$ 8,000
Solid Waste Disposal	10,000
Operation & Maintenance (@ 8.4% of T.I.C.)	27,000
Depreciation & Financial Charges (@ 16.9% of T.I.C.)	55,000
Annual Cost	$ 100,000

Assuming that treatment of the scrubber water will result in a decrease in fluoride concentration from 5,500 ppm to below 50 ppm, the driving force for absorption will increase by an additional 1.0 to 2.0 mass transfer units (NTU) which should result in an additional 1.5 lb/hr of fluoride removed. This results in the following cost effectiveness:

F Removed = (1.5)(8760)/2000 = 6.6 tons/yr
Cost Effectiveness = $100,000/6.6 = $15,150/ton

This figure is sufficiently high to rule out Option 2. However, it should be noted that the low magnitude of fluoride emissions relative to their potential environmental impact justifies the consideration of higher fluoride cost effectiveness figures relative to the high tonnage pollutants such as sulfur dioxide and nitrogen oxides. Option 3, therefore, is determined by the top-down approach as the basis for the fluoride BACT emission limit. The BACT limit will be the same as set recently on a similar Cargill permit (PSD-FL 255); 0.041lb F/ton P_2O_5 input = 1.72 lb/hr. This limit allows a margin for compliance above the highest 1995 test run of 0.027 lb F/ton P_2O_5.

PARTICULATE MATTER (PM/PM_{10}) AND VISIBLE EMISSIONS (VE)

The sources of PM and VE, consisting primarily of MAP dust along with relatively small amounts of ammonium fluoride and other related compounds, are the reactor/granulator, cooler, screens and mills. These emissions are controlled by cyclones which remove most of the larger particles with the remainder

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

controlled by wet scrubbers. The top-down approach for control of PM/PM_{10} and VE identified the following BACT options:

1. High-energy (>30 in. w.c.) venturi scrubber or ionizing wet scrubber.
2. Medium-energy (15-30 in. w.c.) venturi scrubber.

Characteristic of this process is that the first stage of scrubbing (acid scrubber) is primarily for ammonia recovery while the primary function of the second stage scrubber is fluoride removal, leaving PM/PM_{10} control with a secondary priority from a design standpoint. Since recovery of ammonia takes place by chemical reaction with the acid scrubbing medium, the required removal can be effected using a medium energy scrubber which also removes up to 85% of the product dust escaping the cyclones. The tail gas scrubber is a low pressure drop device that removes fluorides by absorption. For these reasons, employment of a high energy, high efficiency device for PM/PM_{10} removal has not been a design consideration for these plants.

If maximum PM/PM_{10} removal is considered to be a design parameter, the cost effectiveness of adding high energy scrubbing to the existing system (Option 1) would likely be in the range of $50,000 - $75,000 per incremental ton of PM/PM_{10} removed based on recent analyses for other projects. On a non-incremental basis, however, assuming replacement of the existing acid scrubbers with high energy ones, the cost effectiveness would drop to about $7,000 to $9,000 per ton for PM/$PM_{10}$ removal in the 98+% efficiency range. Due to the high costs of installing new ducts, pumps, fans, and instrumentation for retrofitting an existing system, and the high energy costs, Option 1 is not feasible for this project.

Option 2 is the feasible choice, and specifying PM emission limits based on the recent compliance test results will satisfy the BACT requirement. Analysis of recent test data for these scrubbers confirms that there is an inordinate safety margin between actual and allowable PM emissions; average actuals being considerably less than 20 percent of the allowables. Therefore, it is appropriate to reduce the allowables to 5.0 lb/hr for the reactor/granulators and coolers or 0.06 lb PM/ton MAP produced. Higher data appear for the years 1993-94, however, for the last five years results have been at or below 0.04 lb PM/ton MAP produced. Additionally, the applicant will be required through the emissions tests to establish pressure drop limitations for the operating permit. The pressure drop limits shall not be more than 10% below the lowest average pressure drop at which the compliance has been demonstrated. In addition, if the particulate matter emissions in such compliance tests exceed 0.05 lb PM/ton MAP, then the lowest average pressure drop during that compliance test shall be the minimum operating level allowed.

BACT DETERMINATION BY THE DEPARTMENT:

Based on the information provided by the applicant and other information available to the Department, the following emission limits are established employing the top-down BACT approach.

POLLUTANT	EMISSION LIMIT	LIMIT BASIS
F	1.72 lb/hr	0.041 lb/ton P_2O_5 input
PM/PM_{10}	5.0 lb/hr	0.06 lb/ton MAP
VE	15% opacity	Applicant's concern about stack condensation

COMPLIANCE

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

Compliance with the fluoride limit shall be in accordance with the EPA Reference Method 13A or 13B as contained in 40 CFR 60, Appendix A.

Compliance with the PM/PM_{10} limit shall be in accordance with the EPA Reference Method 5 as contained in 40 CFR 60, Appendix A.

Compliance with the visible emission limit shall be in accordance with the EPA Reference Method 9 as contained in 40 CFR 60, Appendix A.

DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

Al Linero, P.E. Administrator
New Source Review Section
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road, MS 5505
Tallahassee, Florida 32399-2400

Recommended By:

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

Date:

Approved By:

Howard L. Rhodes, Director
Division of Air Resources Management

Date:

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

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