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<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Received by (Please Print Clearly) <u>Steve Stone</u> B. Date of Delivery</p> <p>C. Signature <u>Steve Stone</u> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p>
<p>1. Article Addressed to: Mr. David Jellerson Environmental Superintendent Cargill Fertilizer, Inc. 8813 Highway 41 South Riverview, Florida 33569</p>	<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If YES, enter delivery address below:</p> <p>3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>2. Article Number (Copy from service label) 7000 0600 0026 4129 9051</p>	

PS Form 3811, July 1999 Domestic Return Receipt 102595-99-M-1789

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7000 0600 0026 4129 9051	<p>Mr. David Jellerson</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Postage</td> <td style="width: 30%;">\$</td> <td rowspan="5" style="width: 40%; text-align: center; vertical-align: middle;">Postmark Here</td> </tr> <tr> <td>Certified Fee</td> <td></td> </tr> <tr> <td>Return Receipt Fee (Endorsement Required)</td> <td></td> </tr> <tr> <td>Restricted Delivery Fee (Endorsement Required)</td> <td></td> </tr> <tr> <td>Total Postage & Fees</td> <td>\$</td> </tr> </table>	Postage	\$	Postmark Here	Certified Fee		Return Receipt Fee (Endorsement Required)		Restricted Delivery Fee (Endorsement Required)		Total Postage & Fees	\$
Postage	\$	Postmark Here										
Certified Fee												
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Total Postage & Fees	\$											
	<p>Recipient's Name (Please Print Clearly) (to be completed by mailer) <u>Mr. David Jellerson</u> Street Apt. No. or P.O. Box No. <u>8813 Highway 41 South</u> City, State ZIP+4 <u>Riverview, Florida 33569</u></p>											

PS Form 3800, February 2000 See Reverse for Instructions

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF FINAL PERMIT

In the Matter of an
Application for Permit by

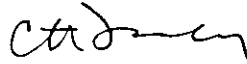
Mr. David Jellerson
Environmental Superintendent
Cargill Fertilizer, Inc.
8813 Highway 41 South
Riverview, Florida 33569

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

Enclosed is the FINAL Permit Number PSD-FL-251 to make modifications necessary to increase production from 1,656 to 2,016 tons per day of MAP at the applicant's Nos. 3 and 4 MAP Plant in Riverview, Hillsborough County. This permit is issued pursuant to Chapter 403, Florida Statutes and in accordance with Rule 62-212.400, F.A.C. - Prevention of Significant Deterioration (PSD) and Best Available Control Technology (BACT).

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department of Environmental Protection in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000, and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.



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

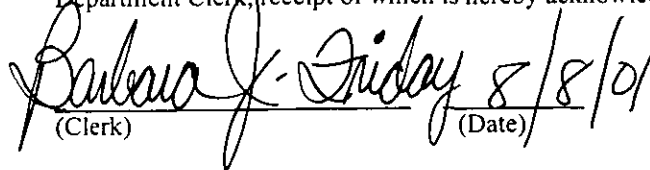
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF FINAL PERMIT (including the FINAL permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 8/8/01 to the person(s) listed:

David Jellerson, Cargill*
Greg Worley, EPA
John Bunyak, NPS
Bill Thomas, DEP SWD
Jerry Campbell, Hillsborough County
David Buff, P.E., Golder Associates

Clerk Stamp

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


(Clerk) 8/8/01
(Date)

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 H₂O. 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 H₂O. 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.

The Department required that Cargill submit detailed designs for the scrubber to provide reasonable assurance that the equipment installed represents best available control technology and can meet the emission limitations given in the permit. This information was submitted in May and June 2001, after which the Department prepared a final permit draft. Following Cargill's review and acceptance of these permit conditions, DEP and Cargill agreed to dismiss the hearing.

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



Jeb Bush
Governor

Department of Environmental Protection

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

David B. Struhs
Secretary

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

"More Protection, Less Process"

Printed on recycled paper.

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 (PM₁₀), sulfur dioxide (SO₂), fluoride (F) and other pollutant emissions including ammonia (NH₃) 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
- 06-29-99: Petition Filed by Cargill for Administrative Hearing

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
- Scrubber Designs from Cargill dated 05-29-01 and 06-27-01
- Stipulated Settlement Agreement dated 08-02-01

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 Southwest 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 P₂O₅ input. **[Rule 62-212.400, F.A.C.]**
5. Particulate matter emissions shall not exceed 5.0 lb/hr and 22.1 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 \pm 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

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

- 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 (PM₁₀), fluorides (F), sulfur dioxide (SO₂), nitrogen oxides (NO_x) and other pollutant emissions including ammonia (NH₃) will occur. Typically, NH₃ emissions from this process are not significant enough to be regulated since an acid scrubbing step is used to recover the NH₃ and return it to the process. NH₃ emissions are of concern primarily when accidental leaks occur during its storage or transport. NH₃ is not a listed hazardous air pollutant.

The increases for PM/PM₁₀ 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/PM₁₀ 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/PM₁₀ and F emissions.

PROCESS EMISSIONS

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

	<u>PM</u>	<u>PM₁₀</u>	<u>F</u>	<u>SO₂</u>	<u>VOC</u>	<u>NO_x</u>	<u>CO</u>
<u>Current Actual Emissions (a)</u>							
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
<u>Proposed Maximum Emissions (b)</u>							
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/PM₁₀ 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 SiF₄). Controlled generally by scrubbing with pond water.
- **Particulate Matter** (PM, PM₁₀). Controlled generally by wet scrubbing or filtration.
- **Combustion Products** (SO₂, NO_x). NO_x controlled generally by good combustion of clean fuels. SO₂ 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, SO₂, H₂SO₄, 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 ₂ O 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 (SiF₄) 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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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 30-60 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	<u>40,000</u>
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.)	<u>55,000</u>
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:

$$\begin{aligned} \text{F Removed} &= (1.5)(8760)/2000 = 6.6 \text{ tons/yr} \\ \text{Cost Effectiveness} &= \$100,000/6.6 = \$15,150/\text{ton} \end{aligned}$$

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); 0.041 lb F/ton P₂O₅ input = 1.72 lb/hr. This limit allows a margin for compliance above the highest 1995 test run of 0.027 lb F/ton P₂O₅.

PARTICULATE MATTER (PM/PM₁₀) 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 controlled by wet scrubbers. The top-down approach for control of PM/PM₁₀ and VE identified the following BACT options:

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BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

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/PM₁₀ 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/PM₁₀ removal has not been a design consideration for these plants.

If maximum PM/PM₁₀ 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/PM₁₀ 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/PM₁₀ 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 ₂ O ₅ input
PM/PM ₁₀	5.0 lb/hr	0.06 lb/ton MAP
VE	15% opacity	Applicant's concern about stack condensation

COMPLIANCE

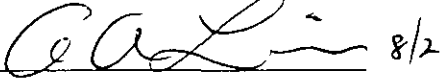
Compliance with the fluoride limit shall be in accordance with the EPA Reference Method 13A or 13B as contained in 40 CFR 60, Appendix A.

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Compliance with the PM/PM₁₀ limit shall be in accordance with the EPA Reference Method 5 as contained in 40 CFR 60, Appendix A.

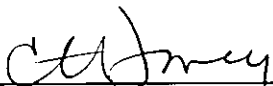
Compliance with the visible emission limit shall be in accordance with the EPA Reference Method 9 as contained in 40 CFR 60, Appendix A.

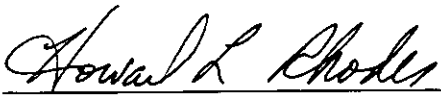
DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

Al Linero, P.E. Administrator  8/2
New Source Review Section
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road, MS 5505
Tallahassee, Florida 32399-2400

Recommended By:

Approved By:


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


Howard L. Rhodes, Director
Division of Air Resources Management

8/6/01
Date:

8/7/01
Date:

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

- G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
- G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
- G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
- G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
- G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
- G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
- (a) Have access to and copy and records that must be kept under the conditions of the permit;
 - (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.
- Reasonable time may depend on the nature of the concern being investigated.
- G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
- (a) A description of and cause of non-compliance; and
 - (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

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.

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

- G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
- G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
- G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
- (a) Determination of Best Available Control Technology (X);
 - (b) Determination of Prevention of Significant Deterioration (X); and
 - (c) Compliance with New Source Performance Standards ()
- G.14 The permittee shall comply with the following:
- (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - (b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - (c) Records of monitoring information shall include:
 - 1. The date, exact place, and time of sampling or measurements;
 - 2. The person responsible for performing the sampling or measurements;
 - 3. The dates analyses were performed;
 - 4. The person responsible for performing the analyses;
 - 5. The analytical techniques or methods used; and
 - 6. The results of such analyses.
- G.15 When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

✓

Florida Department of
Environmental Protection

Memorandum

BAR

TO:	Howard L. Rhodes
THROUGH:	Clair Fancy <i>CAF</i>
FROM:	Al Linero <i>ay</i> Syed Arif
DATE:	August 1, 2001
SUBJECT:	Approval of Final Construction Permit No. 0570008-026-AC (PSD-FL-251) Cargill Fertilizer, Inc.

Approval and signature is requested for issuing the attached final construction permit. The facility is a 2,016 tons per day Monoammonium Phosphate (MAP) Plant operated by Cargill in Riverview, Hillsborough County. Modifications include upgrading of processing equipment along with the installation of an additional scrubber.

The applicant had filed a Petition for Formal Administrative Hearing on June 29, 1999. After a series of meetings with the applicant, the final permit language was agreed upon. The specific pressure drop requirement for the scrubbers was dropped in lieu of a stricter PM emissions limit. The Department, after receiving reasonable assurance from the scrubber manufacturer that the new emission limits will be complied with, has decided to issue the final construction permit.

No comments were received from NPS, EPA or the public during the public comment period.

Attachments