

Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

November 24, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. E. M. Newberg
Vice President and General Manager
IMC-Agrico Company
3095 Highway 640
P.O. Box 2000
Mulberry, Florida 33860

Re: DRAFT Permit No. 1050059-020-AC (PSD-FL-241)
New Wales DAP Plant No. 2


Dear Mr. Newberg:

Enclosed is one copy of the Draft Air Construction Permit for the New Wales DAP Plant No. 2 located at 3095 Highway 640, Mulberry, Polk County. The Technical Evaluation and Preliminary Determination, Best Available Control Technology, the Department's Intent to Issue Air Construction Permit and the "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT" are also included.

The "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT" must be published within 30 (thirty) days of receipt of this letter. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A. A. Linero, P.E., Administrator, New Source Review Section at the above letterhead address. If you have any other questions, please contact John Reynolds or Mr. Linero at 850/488-1344.

Sincerely,


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

CHF/jr

Enclosures

In the Matter of an
Application for Permit by:

IMC-Agrico Company
3095 Highway 640
P.O. Box 2000
Mulberry, Florida 33860

DEP File No. 1050059-020-AC
Draft Permit No. PSD-FL-241
New Wales DAP Plant No. 2
Polk County

INTENT TO ISSUE AIR CONSTRUCTION PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit (copy of DRAFT Permit attached) for the proposed project, detailed in the application specified above and the attached Technical Evaluation and Preliminary Determination, for the reasons stated below.

The applicant, IMC-Agrico Company, submitted a complete application on August 27, 1997 to the Department for an air construction permit to increase the production rate from 280 to 340 tons per hour, add a second product line (monoammonium phosphate), and increase hours of operation at its diammonium phosphate (DAP) No. 2 Plant located at 3095 Highway 640, Mulberry, Polk County.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that a review for the Prevention of Significant Deterioration (PSD), a determination of Best Available Control Technology (BACT) and an air construction permit are required.

The Department intends to issue this air construction permit based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT". The notice shall be published one time only within 30 (thirty) days in the legal advertisement section of a newspaper of general circulation in the area affected. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-1344; Fax 850/ 922-6979) within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit pursuant to Rule 62-103.150 (6), F.A.C.

The Department will issue the FINAL Permit, in accordance with the conditions of the enclosed DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT." Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. The procedures for petitioning for a hearing are set forth below. Mediation is not available for this action.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 850/488-9730, fax: 850/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

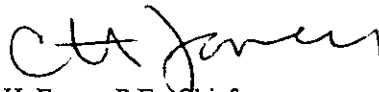
In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.



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

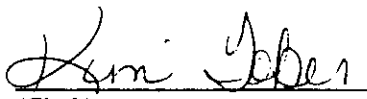
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this INTENT TO ISSUE AIR CONSTRUCTION PERMIT (including the PUBLIC NOTICE, Technical Evaluation and Preliminary Determination, Draft BACT Determination, and the DRAFT permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 11-24-97 to the person(s) listed:

Mr. E.M. Newberg, IMCA *
Mr. Brian Beals, EPA
Mr. John Bunyak, NPS
Mr. Bill Thomas, DEP

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52(7), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.


(Clerk)

11-24-97
(Date)

P 265 659 256

US Postal Service
Receipt for Certified Mail

No Insurance Coverage Provided.
Do not use for International Mail (See reverse)

Sent to	
E.M. Newberg	
Street & Number	
Imc Agico	
Post Office, State, & ZIP Code	
Mulberry Fl	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	DAP #2
TOTAL Postage & Fees	\$
Postmark or Date	11-24-97
1050059-020-AC	
P50-FI-241	

PS Form 3800, April 1995

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

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

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

- Addressee's Address
- Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

E.M. Newberg VP
Imc-Agico Co.
3095 Hwy 640
P O Box 2000
Mulberry Fl 33860

4a. Article Number

P 265 659 256

4b. Service Type

- Registered Certified
 Express Mail Insured
 Return Receipt for Merchandise COD

7. Date of Delivery

11-26-97

5. Received By: (Print Name)

[Signature]

6. Signature: (Addressee or Agent)

X

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

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File No. 1050059-020-AC (PSD-FL-241)

Diammonium Phosphate (DAP) Plant No. 2
IMC-Agrico Company- New Wales Plant

Polk County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to IMC-Agrico Company to increase the production rate and hours of operation of the diammonium phosphate (DAP) Plant No. 2 and to make monoammonium phosphate. The plant is located at 3095 Highway 640, Mulberry, Polk County. A Best Available Control Technology (BACT) determination was required for fluorides and particulate matter, pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The applicant's name and address are: IMC-Agrico Company, 3095 Highway 640, Mulberry, Florida 33860.

The production rate will be increased from 280 to 340 tons per hour. Hours of operation will be increased from 7920 to 8760, and monoammonium phosphate (MAP), a product similar to DAP, will be produced alternately in the same equipment. Controls for fluoride emissions consist of scrubbers using process pond water. Particulate emissions are controlled by scrubbers or a baghouse. There will be no predicted violations of any ambient air quality standards or PSD increments.

An air quality impact analysis was conducted. The project is predicted to have no significant impact in the vicinity of the facility or on the Chassahowitzka National Wilderness Area PSD Class I area located approximately 100 kilometers northwest of the plant.

The Department will issue the FINAL Permit, in accordance with the conditions of the DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The Department will issue FINAL Permit with the conditions of the DRAFT Permit unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. The procedures for petitioning for a hearing are set forth below. Mediation is not available for this action.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received)

in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 850/488-9370, fax: 850/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Polk County Public Works
Department - Air Division
4189 Ben Durrance Road
Bartow, Florida 33830
Telephone: 941/534-7377
Fax: 941/534-7374

Dept. of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: 850/488-1344
Fax: 850/922-6979

Dept. of Environmental Protection
Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619-8218
Telephone: 813/744-6100
Fax: 813/744-6084

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-1344, for additional information.

Technical Evaluation
and
Preliminary Determination

IMC-Agrico Company
New Wales Plant
Polk County, Florida

Diammonium Phosphate Plant No. 2
Production Increase From 280 to 340 TPH

Construction Permit No. 1050059-020-AC
PSD-FL-241

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

November 24, 1997

TECHNICAL EVALUATION AND PRELIMINARY

I. GENERAL INFORMATION

A. Name and address of applicant

IMC-Agrico Company
3095 Highway 640
P.O. Box 2000
Mulberry, Florida 33860

B. Reviewing and Process Schedule

Date of Receipt of Application: July 14, 1997
Request for additional information: August 7, 1997
Application Completeness Date: August 27, 1997

C. Facility Location

This facility is located at 3095 Highway 640, Mulberry, Polk County, Florida. The UTM coordinates are Zone 17, 396.6 km east and 3078.9 km north.

Facility Identification Code (SIC)

Major Group No. 28

Industry Group No. 2874

II. TECHNICAL EVALUATION

A. Project Description

The applicant proposes to increase the allowable hours of operation from 7920 to 8760 hours per year and the production rate of the No. 2 Diammonium Phosphate (DAP) located at the New Wales facility in Mulberry from 280 to 340 tons of product per hour (from 131 to 160 tons of P₂O₅ per hour). The applicant also proposes to produce Monoammonium Phosphate (MAP) in the same equipment. MAP is a similar product that is made by reacting a lower mole ratio of ammonia with the phosphoric acid feed. Emissions from the two processes are similar, and it is a common industry practice to produce both products alternatively using the same equipment. Proposed physical modifications for the project include replacement of pumps, piping and ductwork, as necessary, to achieve the higher production rate.

TECHNICAL EVALUATION AND PRELIMINARY

B. Process Description

The DAP No. 2 plant reacts phosphoric acid with ammonia and produces granular DAP in two essentially identical but separate "trains" (East and West). After anhydrous ammonia is reacted with wet process phosphoric acid in the reactor, the slurry is granulated in a rotating, cylindrical granulator. The product is dried by contact with fuel combustion gases in the drier, then screened, and finally cooled by contact with air drawn through the cooler. The East and West train coolers are used interchangeably for the two trains as required by production schedules.

C. Project Emissions

Emissions proposed by the applicant are summarized in the table below:

Pollutant	PSD Level ¹	Actual Emissions ²	Current Allowables	Proposed Emissions ³	Net Change ⁴	Subject to PSD Review?
F (East)	3	2.5	15.2	21.0	18.5	Yes
F (West)	3	4.8	15.2	21.0	16.2	Yes
PM (East)	25/15 ⁵	9.4	80.5	89.0	79.6	Yes
PM (West)	25/15 ⁵	12.2	73.8	81.5	69.3	Yes
NO _x (both)	40	28.9	110.4	68.2	39.3	No
SO ₂ (both)	40	80.2	174.0	119.2	39.0	No
CO(both)	100	2.6	N/A	11.0	8.4	No
VOC(both)	40	0.2	N/A	1.0	0.8	No
VE	N/A	NR ⁶	20%	20%	-	No

¹ Tons per year (Rule 212.400, F.A.C.)

² Based on two-year average using 1995 and 1996 compliance data for F and PM/PM₁₀; 1994 and 1995 for SO₂ and NO_x (1996) data not reported. CO and VOC emissions based on AP-42 factors for boilers.

³ Proposed by applicant as allowable emissions at the new production rate.

⁴ Applicant's proposed emissions minus actuals.

⁵ PM/PM₁₀

⁶ Not Reported

Emissions proposed by the Department pursuant to the BACT determination are listed below:

POLLUTANT	EMISSION LIMIT	LIMIT BASIS	CONTROL TECHNOLOGY
F	3.34 lb/hr (each train)	0.0417 lb/ton P2O5 input	Two-stage scrubbers using acid/pond water
PM	12.46 lb/hr (East)	0.08 lb/ton P2O5 input	Two-stage scrubbers using acid/pond water
PM	10.62 lb/hr (West)	0.08 lb/ton, 0.01 gr/scf	Two-stage scrubbers and cooler baghouse
SO ₂	22.0 lb/hr (each train)	0.28 lb/ton P2O5 input	Limit on fuel used and sulfur content
NO _x	12.6 lb/hr (each train)	0.16 lb/ton P2O5 input	Efficient combustion
VE	15% opacity (each train)	Rule 62-296.320, F.A.C.	Same as PM

TECHNICAL EVALUATION AND PRELIMINARY

III. RULE APPLICABILITY

The proposed project is subject to preconstruction review under the applicable provisions of Chapter 403, Florida Statutes, Chapters 62-212 and 62-4, Florida Administrative Code (F.A.C.), and 40 CFR 60. This facility is located in an area designated attainment for all criteria pollutants in accordance with F.A.C. Rule 62-275.400

The proposed project was reviewed under Rule 62-212.400(5), F.A.C., New Source Review (NSR) for Prevention of Significant Deterioration (PSD), because it will be a modification to a major stationary source resulting in a significant increase in fluoride and particulate matter emissions. This review consisted of a determination of Best Available Control Technology (BACT) and an analysis of the air quality impact of the increased emissions. The review also includes an analysis of the project's impacts on soils, vegetation and visibility, along with air quality impacts resulting from associated commercial, residential and industrial growth.

The emission units affected by this PSD permit shall comply with all applicable provisions of the Florida Administrative Code and, specifically, the following Chapters and Rules:

Chapter 62-4	Permits.
Rule 62-204.220	Ambient Air Quality Protection
Rule 62-204.240	Ambient Air Quality Standards
Rule 62-204.260	Prevention of Significant Deterioration Increments
Rule 62-204.360	Designation of Prevention of Significant Deterioration Areas
Rule 62-204.800	Federal Regulations Adopted By Reference
Rule 62-210.200	Definitions
Rule 62-210.300	Permits Required
Rule 62-210.350	Public Notice and Comments
Rule 62-210.370	Reports
Rule 62-210.550	Stack Height Policy
Rule 62-210.650	Circumvention
Rule 62-210.700	Excess Emissions
Rule 62-210.900	Forms and Instructions
Rule 62-212.300	General Preconstruction Review Requirements
Rule 62-212.400	Prevention of Significant Deterioration
Rule 62-212.410	Best Available Control Technology (BACT)
Chapter 62-213	Operation Permits for Major Sources of Air Pollution
Rule 62-296.320	General Pollutant Emission Limiting Standards
Rule 62-297.310	General Test Requirements
Rule 62-297.401	Compliance Test Methods

TECHNICAL EVALUATION AND PRELIMINARY

IV. AIR QUALITY IMPACT ANALYSIS

A. Air Quality Analysis

The proposed project will increase emissions of two pollutants at levels in excess of PSD significant amounts: PM₁₀ and fluorides (F). PM₁₀ is a criteria pollutant and has national and state ambient air quality standards (AAQS), PSD increments, and significant impact levels defined for it. F is a non-criteria pollutant and has no AAQS, PSD increments or significant impact levels defined for it; therefore, no air quality dispersion modeling was done for fluoride. Instead, the BACT determination will establish F emission limits for this project. The PSD regulations require the following air quality analyses for this project:

- * An analysis of existing air quality for PM₁₀;
- * A significant impact analysis for PM₁₀;
- * A PSD increment analysis for PM₁₀;
- * An Ambient Air Quality Standards (AAQS) analysis for PM₁₀;
- * An analysis of impacts on soils, vegetation, and visibility and of growth-related air quality modeling impacts.

The analysis of existing air quality generally relies on preconstruction monitoring data collected with EPA-approved methods. The significant impact, PSD increment, and AAQS analyses depend on air quality dispersion modeling carried out in accordance with EPA guidelines.

Based on the required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A discussion of the required analyses follows.

B. Analysis of Existing Air Quality and Determination of Background Concentrations

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. This monitoring requirement may be satisfied by using previously existing representative monitoring data, if available. An exemption to the monitoring

TECHNICAL EVALUATION AND PRELIMINARY

requirement may be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimus concentration. In addition, if EPA has not established an acceptable monitoring method for the specific pollutant, monitoring may not be required.

If preconstruction ambient monitoring is exempted, determination of background concentrations for PSD significant pollutants with established AAQS may still be necessary for use in any required AAQS analysis. These concentrations may be established from the required preconstruction ambient air quality monitoring analysis or from previously existing representative monitoring data. These background ambient air quality concentrations are added to pollutant impacts predicted by modeling and represent the air quality impacts of sources not included in the modeling.

The table below shows that PM₁₀ impacts from the project are predicted to be less than the de minimus level; therefore, preconstruction ambient air quality monitoring is not required for this pollutant.

**Maximum Project Air Quality Impacts for Comparison
to the De Minimus Ambient Levels.**

Pollutant	Avg. Time	Max Predicted Impact (ug/m ³)	Impact Greater Than De Minimus?	De Minimus Level(ug/m ³)
PM ₁₀	24-hour	0	NO	10

C. Models and Meteorological Data Used in the Significant Impact Analysis

The applicant and the Department used the EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model to evaluate the pollutant emissions from the proposed project. The model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. The model incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST3 model allows for the separation of sources, building wake downwash, and various other input and output features. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options. Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project all satisfy the good engineering practice (GEP) stack height criteria.

Meteorological data used in the ISCST3 model consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) stations at Tampa International Airport, Florida (surface data) and Ruskin, Florida (upper air data). The 5-year period of meteorological data was from 1987 through 1991. These NWS stations were selected for use in the study because they are the closest primary weather stations to the study area and are most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

TECHNICAL EVALUATION AND PRELIMINARY

Since five years of data were used in ISCST3, the highest-second-high (HSH) short-term predicted concentrations were compared with the appropriate AAQS or PSD increments. For the annual averages, the highest predicted yearly average was compared with the standards. For determining the project's significant impact area in the vicinity of the facility and if there are significant impacts from the project on any PSD Class I area, both the highest short-term predicted concentrations and the highest predicted yearly averages were compared to their respective significant impact levels.

D. Significant Impact Analysis

Initially, the applicant conducts modeling using only the proposed project's emissions. If this modeling shows significant impacts, further modeling is required to determine the project's impacts on the AAQS or PSD increments. Eleven receptor rings with 10 degree intervals (10-360 degrees) were placed at distances ranging from 700 m to 10 km from the facility, which is located in a PSD Class II area. Thirteen discrete receptors were set in the Chassahowitzka National Wilderness Area (CNWA) which is a PSD Class I area located approximately 100 km to the northwest of the project at its closest point. For each pollutant subject to PSD and also subject to PSD increment and/or AAQS analyses, this modeling compares maximum predicted impacts due to the project with PSD significant impact levels to determine whether significant impacts due to the project are predicted in the vicinity of the facility or in the CNWA. The tables below show the results of this modeling. There were no significant impacts predicted in either the CNWA Class I area or in the vicinity of the facility for PM₁₀. Therefore, further AAQS and PSD increment analyses were not required for this project.

**Maximum Project Air Quality Impacts for Comparison
to the PSD Class II Significant Impact Levels in the Vicinity of the Facility.**

Pollutant	Averaging Time	Maximum Predicted Impact (ug/m ³)	Significant Impact Level (ug/m ³)	Significant Impact?	Radius of Significant Impact (km)
PM ₁₀	Annual	0	1	NO	0.0
	24-hour	0	5	NO	0.0

**Maximum Project Air Quality Impacts in the CNWA for Comparison
to the PSD Class I Significant Impact Levels**

Pollutant	Averaging Time	Maximum Predicted Impact (ug/m ³)	Significant Impact Level (ug/m ³)	Significant Impact?
PM ₁₀	Annual	0	0.08	NO
	24-hour	0.01	0.27	NO

TECHNICAL EVALUATION AND PRELIMINARY

D. Additional Impacts Analysis

1. Impact Analysis Impacts On Soils, Vegetation, And Wildlife

The maximum ground-level concentrations predicted to occur from PM₁₀ emissions as a result of the proposed project, including background concentrations and all other nearby sources, will be below the associated AAQS. The AAQS are designed to protect both the public health and welfare. As such, this project is not expected to have a harmful impact on soils and vegetation in the PSD Class II area. As the results of the air dispersion modeling indicate an overall improvement in the ambient air impacts from the proposed project, no adverse impacts are expected on the air quality related values (AQRV) in the CNWA Class I area.

2. Impact On Visibility

Based on the results of the air dispersion modeling, the proposed project is not expected to have any impacts on visibility.

3. Growth-Related Air Quality Impacts

The proposed modification will require no increase in personnel to operate the sulfuric acid plants. Also the increase in fertilizer production may cause a slight increase in delivery truck tanker traffic, but will have a negligible impact on traffic in the area as compared with traffic levels that presently exist. Therefore, no additional growth impacts are expected as a result of the proposed project.

V. CONCLUSION

Based on the foregoing technical evaluation of the application and additional information submitted by IMC-Agrico Company, the Department has made a preliminary determination that the proposed project will comply with all applicable state air pollution regulations provided the Department's Best Available Control Technology Determination is implemented and certain conditions are met. The General and Specific Conditions are listed in the attached draft conditions of approval.

Permit Engineer: John Reynolds
Meteorologist: Cleve Holladay

Reviewed and Approved by A. A Linero, P.E.
Administrator, New Source Review Section

DRAFT

PERMITTEE:

IMC Agrico Company
3095 Highway 640
Mulberry, Florida 33860

Authorized Representative:

E. M. Newberg
Vice President and General Manager
Concentrated Phosphate Operations - Florida

FID No.	1050059
PSD No.	PSD-FL-241
SIC No.	2874
Project:	DAP Plant No. 2
Permit No.	1050059-020-AC
Expires:	December 31, 1998

PROJECT AND LOCATION:

Permit for the construction /modification of the DAP Plant No. 2 to increase production and hours of operation as well as to produce monoammonium phosphate at the IMC-Agrico (New Wales) facility, 3095 Highway 640, Mulberry, Polk County. UTM coordinates are Zone 17; 396.6 km E; 3078.9 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 1050059-020-AC AND PSD-FL-241**SECTION I. FACILITY INFORMATION**

SUBSECTION A. FACILITY DESCRIPTION

The IMC-Agrico DAP Plant No. 2 presently consists of two separate process units designated as East and West trains, respectively, each with a presently permitted capacity of 140 tons of product per hour. This permit allows an increase in the permitted capacity of each train to 170 tons of product per hour (80 tons of P₂O₅ input per hour) for a total combined capacity of 340 tons of product per hour (160 tons of P₂O₅ input per hour). This permit also allows the production of Monoammonium Phosphate (MAP) in the same quantities as an alternative product to DAP and increases the allowable operating hours for both trains from 7920 to 8760 per year.

SUBSECTION B. REGULATORY CLASSIFICATION

The DAP Plant No. 2 is classified as a major source of air pollution or Title V source because it has the potential to emit at least 100 tons per year of particulate matter, nitrogen oxides and sulfur dioxide.

SUBSECTION C. PERMIT SCHEDULE:

- 07-14-97: Date of Receipt of Application
- 08-27-97: Application deemed complete
- 11-24-97: Intent issued

SUBSECTION D. RELEVANT DOCUMENTS:

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

- Application received 07-14-97
- Department's incompleteness letter dated 08-07-97
- Applicant's letters dated 08-22-97, 10-21-97
- Fish and Wildlife Service letter dated 08-06-97
- Technical Evaluation and Preliminary Determination dated 11-24-97
- Best Available Control Technology determination (issued concurrently with permit)

AIR CONSTRUCTION PERMIT 1050059-020-AC AND PSD-FL-241

SECTION II. EMISSION UNIT(S) GENERAL REQUIREMENTS

SUBSECTION A. ADMINISTRATIVE

- A.1 Regulating Agencies: All documents related to applications for permits to operate, reports, tests, minor modifications and notifications shall be submitted to the Department of Environmental Protection, Southwest District Office located at 3804 Coconut Palm Drive, Tampa, Florida 33619-8218, and phone number (813)744-6100. All applications for permits to construct or modify an emission unit(s) *subject to the Prevention of Significant Deterioration (PSD)* should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (FDEP) located at 2600 Blirstone Road, Tallahassee, Florida 32399-2400 and phone number (850)488-1344.
- A.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.]
- A.3 Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapters of the Florida Administrative Code.
- A.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.]
- A.5 Expiration: This air construction permit shall expire on **December 31, 1998**. [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 permitting authority 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.]
- A.6 Applicable Regulations: The facility is subject to the following regulations: Florida Administrative Code Chapters 62-4; 62-103; 62-204; 62-210; 62-212, 62-296, and 62-297. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements or regulations. [Rule 62-210.300, F.A.C.]

AIR CONSTRUCTION PERMIT 1050059-020-AC AND PSD-FL-241

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION A. COMMON CONDITIONS: 40 CFR NEW SOURCE PERFORMANCE STANDARDS

EMISSION UNITS

This permit addresses the following emission units.

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
045	DAP Plant No. 2 - East Train
046	DAP Plant No. 2 - West Train
047	DAP Plant No. 2 - West Product Cooler
048	DAP Plant No. 2 - East Product Cooler

These emission units shall comply with all applicable requirements of 40 CFR 60, General Provisions, Subpart A, adopted by reference in Rule 62-204.800(7), F.A.C.

- A.1 [40 CFR 60.7, Notification and record keeping]
- A.2 [40 CFR 60.8, Performance tests]
- A.3 [40 CFR 60.11, Compliance with standards and maintenance requirements]
- A.4 [40 CFR 60.12, Circumvention]
- A.5 [40 CFR 60.13, Monitoring requirements]
- A.6 [40 CFR 60.19, General notification and reporting requirements]

The DAP Plant No. 2 is subject to the applicable requirements of the New Source Performance Standards (NSPS) adopted by reference in Rules 62-204.800, F.A.C., including:

40 CFR 60 Subpart V, Standards of Performance for Diammonium Phosphate Plants (DAP).

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AIR CONSTRUCTION PERMIT 1050059-020-AC AND PSD-FL-241

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION B. SPECIFIC CONDITIONS :

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

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
045	DAP Plant No. 2 - East Train
046	DAP Plant No. 2 - West Train
047	DAP Plant No. 2 - West Product Cooler
048	DAP Plant No. 2 - East Product Cooler

1. Unless otherwise indicated, the construction and operation of the subject Diammonium Phosphate No. 2 production facility shall be in accordance with the capacities and specifications stated in the application. [Rule 62-210.300, F.A.C.]
2. The subject emissions units shall comply with all applicable provisions of the 40 CFR 60 New Source performance Standards for Diammonium Phosphate Plants, Subpart V. [Rule 62-204.800 F.A.C.]
3. The production rate of each train shall not exceed 170 tons of DAP or MAP product per hour. [Rule 62-210.200, F.A.C.]
4. The subject emission units are allowed to operate continuously (8760 hours/year). [Rule 62-210.200, F.A.C.]
5. Total fluoride emissions from each train of the DAP Plant No. 2 shall not exceed 3.34 lb/hr and 14.6 TPY based on 0.0417 lb F/ton of P₂O₅ input. [Rule 62-212.410, F.A.C.]
6. Particulate matter emissions from the reactor/granulator/dryer stack for each train shall not exceed 6.40 lb/hr and 28.0 TPY based on 0.08 lb/ton P₂O₅ input. [Rule 62-212.410, F.A.C.]
7. Particulate matter emissions from the East Train cooler stack shall not exceed 6.06 lb/hr and 26.5 TPY based on 0.011 gr/scf and 64,303 scfm. [Rule 62-212.410, F.A.C.]
8. Particulate matter emissions from the West Train cooler stack shall not exceed 4.22 lb/hr and 8.5 TPY based on 0.010 gr/scf and 49,217 scfm. [Rule 62-212.410, F.A.C.]
9. Visible emissions from the West Train cooler stack shall not exceed 5% opacity. Visible emissions from all scrubber stacks shall not exceed 15% opacity. [Rule 62-212.410, F.A.C.]
10. During periods of firing natural gas only, sulfur dioxide emissions from the reactor/granulator/dryer stack of each train shall be presumed not to exceed the current limit of 22.0 lb/hr and 87.0 TPY and a sulfur dioxide compliance test shall be waived. During periods of firing No. 6 fuel oil with a maximum sulfur content of 2.5% sulfur by weight, in lieu of a limit and compliance test, the firing rate shall not exceed the current limit of 36 million BTU per hour and 2.1 million gallons per year. The permittee shall maintain records of the fuel oil supplier's sulfur content analysis. [Rule 62-210.200(227), F.A.C.]

AIR CONSTRUCTION PERMIT 1050059-020-AC AND PSD-FL-241

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

11. Nitrogen oxides emissions from the reactor/granulator/dryer stack of each train shall not exceed the current limit of 12.6 lb/hr and 55.2 TPY. [Rule 62-210.200(227), F.A.C.]
12. All venturi scrubbers for each train shall be operated at a minimum pressure drop of 15 inches w.c. The permittee shall install, calibrate, operate and maintain monitoring devices that continuously measure and record the total pressure drop across each scrubbing system. Accuracy of the monitoring devices shall be $\pm 5\%$ over the operating range. [Rules 62-297.310, 62-296.800, F.A.C.; 40 CFR 60.223(c)]
13. Before this construction permit expires, 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.]
14. 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.]
15. The compliance test procedures shall be in accordance with EPA Reference Methods 1, 2, 3, 4, 5, 7, 9 and 13A or 13B, as appropriate, as published in 40 CFR 60, Appendix A. 60, Appendix A. The baghouse may be tested for visible emissions in lieu of a Method 5 test. [Rules 62-204.800 and 62-297.310(7)(c), F.A.C.]
16. All measurements, records, and other data required to be maintained by this facility shall be retained for at least five (5) years following the data on which such measurements, records, or data are recorded. These data shall be made available to the Department upon request. [Rule 62-4.070(3), F.A.C.]
17. 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 ton/hour of phosphorus bearing feed using the flow monitoring device meeting the requirements of 40 CFR 60.223(a) and then by proceeding according to 40 CFR 60.224(b)(3). [Rule 62-296.800, F.A.C.; 40 CFR 60.223(b)]
18. 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.]

AIR CONSTRUCTION PERMIT 1050059-020-AC AND PSD-FL-241

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

19. 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.]**
20. 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.]**
21. 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 GC
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

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

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

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

- G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
- G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
- G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
- (a) Determination of Best Available Control Technology (X)
 - (b) Determination of Prevention of Significant Deterioration (X); and
 - (c) Compliance with New Source Performance Standards (X).
- 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.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

Diammonium Phosphate Plant No. 2
IMC-Agrico Company (New Wales)
PSD-FL-241 / 1050059-020-AC
Mulberry, Polk County

DRAFT

The IMC-Agrico Company proposes to increase production from 280 to 340 tons per hour at its existing Diammonium Phosphate (DAP) No. 2 Plant in Mulberry, Polk County. The proposed modification will result in a significant increase in emissions of particulate matter (PM/PM₁₀) and fluorides (F). The project is, therefore, subject to Prevention of Significant Deterioration (PSD) review in accordance with Rule 62-212.400, Florida Administrative Code (F.A.C.). A Best Available Control Technology (BACT) determination is part of the review required by Rules 62-212.400 and 62-296, F.A.C.

The DAP No. 2 plant reacts phosphoric acid with ammonia and produces granular DAP in two essentially identical but separate "trains" (East and West) while generating emissions as indicated below:

Pollutant	PSD Level ¹	Actual Emissions ²	Current Allowables	Proposed Emissions ³	Net Change ⁴	Subject to PSD Review?
F (East)	3	2.5	15.2	21.0	18.5	Yes
F (West)	3	4.8	15.2	21.0	16.2	Yes
PM (East)	25/15 ⁵	9.4	80.5	89.0	79.6	Yes
PM (West)	25/15 ⁵	12.2	73.8	81.5	69.3	Yes
NO _x (both)	40	28.9	110.4	68.2	39.3	No
SO ₂ (both)	40	80.2	174.0	119.2	39.0	No
CO(both)	100	2.6	N/A	11.0	8.4	No
VOC(both)	40	0.2	N/A	1.0	0.8	No
VE	N/A	NR ⁶	20%	20%	-	No

¹ Tons per year (Rule 212.400, F.A.C.)

² Based on two-year average using 1995 and 1996 compliance data for F and PM/PM₁₀; 1994 and 1995 for SO₂ and NO_x (1996) data not reported. CO and VOC emissions based on AP-42 factors for boilers.

³ Proposed by applicant as allowable emissions at the new production rate.

⁴ Applicant's proposed emissions minus actuals.

⁵ PM/PM₁₀

⁶ Not Reported

DATE OF RECEIPT OF COMPLETE BACT APPLICATION:

August 27, 1997

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

DRAFT

BACT DETERMINATION PROCEDURE:

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

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

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

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, SiF₄). Controlled generally by scrubbing with pond water.
- **Particulate Matter** (PM, PM₁₀). Controlled generally by wet scrubbing or filtration.
- **Combustion Products** (SO₂, NO_x, PM). Controlled generally by good combustion of clean fuels.

**APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

- *Products of Incomplete Combustion* (CO, VOC). Controlled generally by proper combustion.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted 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 AND NON-BACT LIMITS PROPOSED BY APPLICANT:

POLLUTANT	EMISSION LIMIT	LIMIT BASIS	CONTROL TECHNOLOGY
F	4.8 lb/hr (each train)	0.06 lb/ton P ₂ O ₅ input	Two-stage scrubbers using acid/pond water
PM	20.3 lb/hr (East)	0.25 lb/ton P ₂ O ₅ input	Two-stage scrubbers using acid/pond water
PM	18.6 lb/hr (West)	0.25 lb/ton 0.01 gr/scf	Two-stage scrubbers and cooler baghouse
SO ₂	22.0 lb/hr (each train)	0.28 lb/ton P ₂ O ₅ input	Limit on fuel used and sulfur content
NO _x	12.6 lb/hr (each train)	0.16 lb/ton P ₂ O ₅ input	Efficient combustion
VE	20% opacity (each train)	Rule 62-296.320, F.A.C.	Same as PM

BACT POLLUTANT 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 and 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.

Additional fluoride and ammonia emissions are generated in the dryer and are controlled by a separate two-stage scrubbing system as for the reactor and granulator. Gaseous fluoride and ammonia emissions from the cooler are relatively low and therefore do not require special controls. The applicant has proposed that the existing emission control equipment be considered as BACT.

APPENDIX BD
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DRAFT

PARTICULATE MATTER (PM/PM₁₀) AND VISIBLE EMISSIONS (VE)

The sources of PM and VE, consisting primarily of DAP dust along with relatively small amounts of ammonium fluoride and other related compounds, are the granulator, dryer, 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 applicant has proposed that the existing control equipment be considered as BACT.

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	3.34 lb/hr (each train)	0.0417 lb/ton P ₂ O ₅ input (includes cooler emissions)
PM/PM ₁₀ (RG/D)	6.40 lb/hr (each train)	0.08 lb/ton P ₂ O ₅ input (1997 stack tests)
PM/PM ₁₀ (E Clr)	6.06 lb/hr	0.011 gr/scf (current scrubber limit basis)
PM/PM ₁₀ (W Clr)	4.22 lb/hr	0.010 gr/scf (current baghouse limit basis)
VE (W Clr)	5% opacity	current baghouse limit
VE	15% opacity (all except baghouse)	1997 stack tests

FLUORIDES

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.

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.

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Costs for Option 2 are based on some of the data submitted by the applicant but primarily on 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 (5 acres - spray cooling)	\$ 185,000
Tanks, Pumps and Equipment	520,000
Other Costs	<u>95,000</u>
Total Installed Cost (T.I.C.)	\$ 800,000
Raw Materials	\$ 19,000
Solid Waste Disposal	25,000
Operation & Maintenance (@ 8.4% of T.I.C.)	67,200
Depreciation & Financial Charges (@ 16.9% of T.I.C.)	<u>135,200</u>
Annual Cost	\$ 246,400

Assuming that treatment of the scrubber water will result in a decrease in fluoride concentration from 12,000 ppm to below 50 ppm, the driving force for absorption will increase by an additional 1.5 to 2.5 mass transfer units (NTU) which should result in an additional 2.0 lb/hr of fluoride removed for each train. This results in the following cost effectiveness for the two trains:

$$\begin{aligned} \text{F Removed} &= (2)(2)(8760)/2000 = 17.5 \text{ tons/yr} \\ \text{Cost Effectiveness} &= \$246,400/17.5 = \$14,080/\text{ton} \end{aligned}$$

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 determined for the IMC-Agrico Nichols Plant (0.0417 lb F/ton P₂O₅ input).

PARTICULATE MATTER (PM/PM₁₀) AND VISIBLE EMISSIONS (VE)

The top-down approach for control of PM/PM₁₀ 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.

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BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

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 since the existing venturi scrubbers are capable of being operated in the medium energy range, the BACT requirement will be satisfied by specifying their normal operation at a minimum pressure drop of 15 in. w.c. Analysis of recent test data for these scrubbers confirms that there is an inordinate safety margin between actual and allowable PM emissions, actuals being less than 20 percent of the allowables. Therefore, it is appropriate to reduce the allowables to a level consistent with typical margins for BACT limits. A margin of 100% above the highest representative data point from the 1997 stack tests ($0.04 \times 2 = 0.08$ lb/ton P₂O₅) appears reasonable for the reactor/granulators and dryers. The existing emission limit bases (gr/SCF) for the coolers are sufficient for this BACT determination.

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.

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.

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DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

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

Recommended By:

Approved By:

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

Howard L. Rhodes, Director
Division of Air Resources Management


Date:


Date:

Memorandum

Florida Department of Environmental Protection

TO: Clair Fancy

THRU: Al Linero  11/21

FROM: John Reynolds 

DATE: November 21, 1997

SUBJECT: IMC-Agrico Company/ New Wales DAP Plant No. 2/
1050059-020-AC (PSD-FL-241)

Attached is the Public Notice package for increasing the production rate at the above referenced facility.

The only pollutants that underwent PSD review were PM/PM10 and Fluorides. The BACT determination concluded that the existing control equipment meets BACT requirements except that a permit condition was added requiring that the scrubbers be operated above a minimum pressure drop to ensure compliance. The BACT limit for PM/PM10 was reduced substantially below the prior limit because recent test data submitted by the applicant showed that actuals are less than 20% of the allowables.

I recommend your approval and signature.

AAL/jr

Attachments



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

P.E. Certification Statement

Permittee:
IMC-Agrico Company
New Wales DAP Plant No. 2

DEP File No. 1050059-020-AC
Permit No. PSD-FL-241

Project type: Air Construction Permit increasing the production rate of diammonium phosphate from 280 to 340 tons per hour and the hours of operation from 7920 to 8760 and for production of monoammonium phosphate as an alternative in the same equipment. Existing control equipment consists of scrubbers and a baghouse.

I HEREBY CERTIFY that the engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including but not limited to the electrical, mechanical, structural, hydrological, and geological features).

A. A. Linero, P.E.
Registration Number: 26032

11/24/97
Date

Department of Environmental Protection
Bureau of Air Regulation
New Source Review Section
111 South Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Phone (850) 488-1344
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