



Jeb Bush
Governor

Department of Environmental Protection

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

David B. Struhs
Secretary

June 3, 2002

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Mike Daigle
General Manager
IMC Phosphates MP, Inc.
P.O. Box 2000
Mulberry, Florida 33860

Re: DRAFT Permit No. 1050059-036-AC (PSD-FL-325)
New Wales Plant

Dear Mr. Daigle:

Enclosed is one copy of the Draft Air Construction Permit for the New Wales Plant, 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. 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 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 Syed Arif at 850/921-9528.

Sincerely,

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

CHF/sa

Enclosures

"More Protection, Less Process"

Printed on recycled paper.

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<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) B. Date of Delivery <i>Linda Rochester</i> <i>6/7/02</i></p>
<p>1. Article Addressed to:</p> <p>Mr. Mike Daigle General Manager IMC Phosphates MP, Inc. P.O. Box 2000 Mulberry, FL 33860</p>	<p>C. Signature <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee <i>X Linda Rochester</i></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 style="text-align: center;">7001 0320 0001 3692 8697</p>	<p>3. Service Type <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> C.O.D.</p> <p><input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Registered <input type="checkbox"/> Insured Mail</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>PS Form 3811, July 1999 Domestic Return Receipt 102595-00-M-0952</p>	

U.S. Postal Service
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7001 0320 0001 3692 8697

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Certified Fee		
Return Receipt Fee (Endorsement Required)		
Restricted Delivery Fee (Endorsement Required)		
Total Postage & Fees	\$	

Sent To Mike Daigle

Street, Apt. No.,
or P.O. Box P.O. Box 2000

City, State, ZIP+4
Mulberry, FL 33860

PS Form 3800, January 2001 See Reverse for Instructions

In the Matter of an
Application for Permit by:

IMC Phosphates MP, Inc.
3095 Highway 640
Mulberry, Florida 33860

DEP File No. 1050059-036-AC
Draft Permit No. PSD-FL-325
New Wales Plant
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 Phosphates MP, Inc., submitted a complete application on May 16, 2002 to the Department for an air construction permit to increase the sulfuric acid production capability at its New Wales Plant. The plant is 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 for the proposed work.

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 62-110.106(7)(a)1., 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 in the legal advertisement section of a newspaper of general circulation in the area affected. Rule 62-110.106(7)(b), F.A.C., requires that the applicant cause the notice to be published as soon as possible after notification by the Department of its intended action. 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. 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: 850/488-0114; Fax 850/922-6979). You must provide proof of publication within seven days of publication, pursuant to Rule 62-110.106(5), F.A.C. No permitting action for which published notice is required shall be granted until proof of publication of notice is made by furnishing a uniform affidavit in substantially the form prescribed in section 50.051, F.S. to the office of the Department issuing the permit. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rules 62-110.106(9) & (11), F.A.C.

The Department will issue the Final Air Construction Permit in accordance with the conditions of the attached Draft Air Construction 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 a public meeting concerning the proposed 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 should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the Draft Air Construction Permit, the permitting authority shall issue a Revised Draft Air Construction Permit and require, if applicable, another Public Notice.

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., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must

contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes 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. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall 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 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301.

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. 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. Mediation is not available in this proceeding.


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

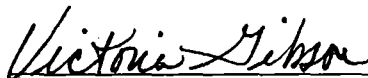
CERTIFICATE OF SERVICE

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 6/5/02 to the person(s) listed:

Mr. Mike Daigle, IMC *
Mr. Gregg Worley, EPA
Mr. John Bunyak, NPS
Mr. Jerry Kissel, DEP-SWD
Mr. John Koogler, Ph.D., P.E.

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)

June 5, 2002
(Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEP File No. 1050059-036-AC (PSD-FL-325)
New Wales Plant
IMC Phosphates MP, Inc.
Polk County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to IMC Phosphates MP, Inc. to increase the sulfuric acid production capability at its New Wales Plant. The plant is located at 3095 Highway 640, Mulberry, Polk County.

A Best Available Control Technology (BACT) determination was required for sulfur dioxide (SO₂), sulfuric acid mist (SAM) and nitrogen oxides 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 Phosphates MP, Inc., 3095 Highway 640, Mulberry, Florida 33860.

The proposed changes will include increasing the production rate of the existing Sulfuric Acid Plants Nos. 1, 2 and 3 to 3400 tons per day, each. The proposed project involves upgrading and/or replacement of plant equipment to accomplish the production increases, as described in the permit application. The Department proposed 3.5 pounds per ton, 24-hour rolling average and 4.0 pounds per ton, 3-hour rolling average for SO₂ and 0.10 pounds of SAM per ton of product as BACT for this project. The BACT emission limit established for SO₂ will be complied with a certified continuous emission monitor. A more stringent BACT limit for SO₂ is also proposed for sulfuric acid plants 1,2 and 3, if the converter modifications for the three plants are not completed by a certain date. The double absorption process and mist eliminators will control sulfur dioxide and sulfuric acid mist emissions from the sulfuric acid plants, respectively.

An air quality impact analysis was required for sulfur dioxide and nitrogen oxides. Except for the SO₂ 3-hour averaging time, no significant impacts were predicted in the vicinity of the project or in PSD Class I Chassahowitzka National Wilderness Area located 103 km away at its closest point. A PSD Class II increment analysis was performed for the SO₂ 3-hour averaging time. The maximum predicted SO₂ PSD Class II increment in the vicinity of the project consumed by all sources in the area, including this project, is 279 ug/m³, which is 54 percent of the allowable 3-hour Class II area PSD increment of 512 ug/m³.

The Department will issue the Final Air Construction Permit in accordance with the conditions of the Draft Air Construction Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions. The permitting authority has determined that an Air Construction Permit is required.

The Department will accept written comments and requests for a public meeting concerning the proposed 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 should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

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., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes 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. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall 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 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301

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. 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:

Dept. of Environmental Protection
Bureau of Air Regulation
Suite 4, 111 S. Magnolia Drive
Tallahassee, Florida, 32301
Telephone: 850/488-0114
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 850/488-0114, for additional information.

TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION

IMC Phosphates MP, Inc.

NEW WALES PLANT
Mulberry, Polk County

DEP File No. 1050059-036-AC
PSD-FL-325

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

May 31, 2002

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

1. APPLICATION INFORMATION

1.1 Applicant Name and Address

IMC Phosphates MP, Inc.
P.O. Box 2000
Mulberry, Florida 33860

Authorized Representative: Mr. Mike Daigle, General Manager

1.2 Reviewing and Process Schedule

11-27-2001: Date of Receipt of Application
12-26-2001: DEP Completeness Request
01-29-2002: Applicant's response to DEP's Completeness Request
03-20-2002: Additional information in response to DEP's Completeness Request
04-30-2002: Additional information in response to DEP's Completeness Request
05-02-2002: Additional information in response to DEP's Completeness Request
05-16-2002: Additional information in response to DEP's Completeness Request
05-xx-2002: Issue Intent

2. FACILITY INFORMATION

2.1 Facility Location

The agricultural chemicals manufacturing facility is located at 3095 Highway 640 West, Mulberry, Polk County. The project site is over 100 kilometers from the Chassahowitzka National Wildlife Refuge, a Class I Area. The UTM coordinates of this facility are Zone 17; 396.6 km E; 3078.9 km N.

2.2 Standard Industrial Classification Codes (SIC)

Major Group No.	28	Chemicals and Allied Products
Industry Group No.	2874	Phosphate Fertilizers

2.3 Facility Category

This agricultural chemicals facility makes sulfuric acid, phosphoric acid, superphosphoric acid, monoammonium phosphate (MAP) and diammonium phosphate (DAP), and animal feed ingredients.

The sulfuric acid is produced on-site by burning elemental sulfur, converting the resulting sulfur dioxide to sulfur trioxide, and absorbing it into a recirculating sulfuric acid solution. Phosphoric acid is made by acidulation of phosphate rock with sulfuric acid. Waste gypsum is produced and stacked. The phosphoric acid is reacted with other chemicals to make fertilizers and animal feed ingredients. The facility is classified as a major or Title V source of air pollution because emissions of at least one regulated air pollutant, such as particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), or volatile organic compounds (VOC) exceed 100 TPY.

This industry is included in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. Because emissions are greater than 100 TPY for at least one criteria pollutant, the facility

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

is also a major facility with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD). Per Table 62-212.400-2, modifications at the facility resulting in emissions increases greater than PSD significant levels, require review per the PSD rules and a determination of Best Available Control Technology (BACT) per Rule 62-212, F.A.C.

3. PROCESS DESCRIPTION

Sulfuric Acid Production

The plants are sulfur-burning double absorption sulfuric acid plants. This is the most common process for producing sulfuric acid in the U.S. phosphate fertilizer industry and it continues to be improved and employed at both existing and new installations in the U.S. and throughout the world.

The process is comprised of three distinct steps. These are sulfur combustion and gas preparation; catalytic conversion of sulfur dioxide to sulfur trioxide; and absorption of sulfur trioxide into sulfuric acid.

A great deal of heat is evolved throughout the process. Its management is an important consideration in optimizing the conversion and absorption steps as well as providing useful energy to the plant. Reaction kinetics and thermodynamics are also important factors. Following is a description of the process:

Atmospheric air is drawn through a filter by the main compressor and then contacted with a recirculating stream of sulfuric acid in the drying tower. The dried air is blown by a steam-driven compressor into a refractory-lined burner where molten sulfur is combusted to produce sulfur dioxide (SO_2). The hot combustion gases are cooled in a waste heat boiler to recover excess heat as steam.

The gas stream is then introduced into a converter packed with catalyst. In a series of steps, the SO_2 and excess oxygen from the combustion air are progressively converted to SO_3 . The gases containing SO_3 , some unconverted SO_2 , oxygen, and atmospheric nitrogen are conveyed to an "interpass tower" where the SO_3 is absorbed into a stream of concentrated sulfuric acid and reacted with excess water to further strengthen the acid. By removing most SO_3 in the interpass absorber, the equilibrium favors further conversion of the remaining SO_2 to SO_3 . The remaining SO_2 , not previously oxidized, is passed over a final converter bed of catalyst and the SO_3 produced is then absorbed in H_2SO_4 . This is accomplished in the final pass of the converter. The resulting gas stream is conveyed to the high-efficiency "final tower" where most of the remaining SO_3 reacts with water in a 98-99 percent sulfuric acid stream.

Throughout the conversion, the temperatures are moderated by an intricate arrangement of heat exchangers so that the excess heat is removed. Mist eliminators are used to insure that sulfuric acid sprays and fine mists are contained, thereby protecting plant equipment and minimizing emissions to the atmosphere.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

4. PROJECT DESCRIPTION

This permit addresses the following emissions units:

EMISSION UNIT NO.	SYSTEM	EMISSION UNIT DESCRIPTION
002	Product	Sulfuric Acid Plant (SAP) No. 1
003	Product	SAP No. 2
004	Product	SAP No. 3

The proposed project includes an increase in the production rate of the existing SAP Nos. 1, 2 and 3 to 3400 tons per day, each. It involves upgrading and/or replacement of plant equipment to accomplish the production increases, as described in the permit application. SAP 1 will undergo replacement of an interpass tower and necessary modifications to the converter to achieve a BACT limit for sulfur dioxide (SO₂) of 3.5 lb/ton of 100% H₂SO₄, 24-hour rolling average and 4.0 lb/ton of 100% H₂SO₄, 3-hour rolling average, showing compliance by continuous emission monitor (CEM).

SAP 1 will undergo turn-around by October 2002; acid tower replacement and converter modifications are planned during the turn-around. The Department believes that SAP 1 should meet the current BACT limit of 3.5 lb/ton, 24-hour rolling average and 4.0 lb/ton, 3-hour rolling average by 12/31/2003. If the acid tower replacement and converter modifications are not completed by 12/31/2003, the facility will have to comply with a stricter BACT limit of 3.25 lb/ton, 24-hour rolling average and 3.5 lb/ton, 3-hour rolling average (compliance by CEM).

SAP 2 and 3 have turn-arounds tentatively scheduled in 2004 and 2005, respectively and the facility has provided an anticipated date of commencement of construction of 1/31/2003 and 9/30/2003 for SAP 2 and 3, respectively for the turn-arounds. The Department believes that the commencement of construction date for SAP 3 can be moved ahead to 5/1/2003 and an 18-month construction period is a reasonable time for the converter modifications planned for each plant. Both these plants will also meet the current BACT limit of 3.5 lb/ton, 24-hour rolling average and 4.0 lb/ton, 3-hour rolling average (compliance by CEM) if the converter modifications is completed within 18-months of commencement of construction date. Additional modifications of upgrading and/or replacement of other plant equipment for SAP 2 and 3 (i.e., acid towers, heat exchange equipment, blowers, pumps, coolers, deaerator, furnace heat recovery system, ducts and tanks) will trigger BACT review, if construction is discontinued for a period of 18 months or more. If the converter modifications is not completed in 18-months, the facility will have to comply with a stricter limit for SO₂ emissions. The limit beyond the 18-month period is established by the Department to be 3.25 lb/ton, 24-hour rolling average and 3.5 lb/ton, 3-hour rolling average (compliance by CEM).

BACT limit for sulfuric acid mist (SAM) emissions for all three SAP's will be 0.10 lb/ton of 100% H₂SO₄.

Some of the equipments that may undergo maintenance/repair/replacement are acid towers,

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

converter, heat exchange equipment, blowers, pumps, coolers, deaerator, furnace, heat recovery system, ducts and tanks for both SAP 2 and 3. The maintenance schedule for all three SAP plants will comply with 40 CFR 52.21(r)(2) requirement stated as follows:

“Approval to construct shall become invalid if construction is not commenced within 18 months after receipt of such approval, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time.”

In order to comply with this requirement, the Department has included a specific condition in the permit which puts the burden on the applicant to document and submit to Bureau of Air Regulation (BAR) records of construction activities schedule for BAR's approval. The specific condition is as follows:

“The permittee shall notify the Bureau of Air Regulation (BAR) upon commencement of construction, as defined in 40 CFR 52.21(b)(11) with regards to each of the three sulfuric acid plants addressed by this permit and maintain a chronological record of the construction activities. The anticipated dates of commencement of construction for SAP 2 and 3 are 1/31/2003 and 5/1/2003, respectively. The permittee shall submit the construction activities schedule for approval by BAR 30 days prior to commencement of construction for SAP Nos. 2 and 3. The construction activities schedule shall provide a detailed listing of each maintenance activity and the anticipated completion date for each of those maintenance activities. The permittee shall also submit to BAR a status report covering each quarter of the construction activities after commencement of construction for SAP Nos. 1, 2 and 3. The submittal of the status report shall continue until the construction activities cease for SAP Nos. 1, 2 and 3. The permittee shall notify the Bureau of Air Regulation of any changes to the construction activities schedule that would affect the applicability of the BACT determinations.”

In order to comply with the 18-month modification time period, the Department has included a specific condition in the permit that reflects a stricter SO₂ emission limit beyond the 18-month modification period. The specific conditions are as follows:

“The SO₂ emission limit for SAP No. 1 shall be 3.25 lb/ton of 100% H₂SO₄, 24-hour rolling average and 3.5 lb/ton of 100% H₂SO₄, 3-hour rolling average if the converter modifications is not completed by 12/31/2003.”;

“The SO₂ emission limit for SAP No. 2 shall be 3.25 lb/ton of 100% H₂SO₄, 24-hour rolling average and 3.5 lb/ton of 100% H₂SO₄, 3-hour rolling average if the converter modifications is not completed by 7/31/2004.” and

“The SO₂ emission limit for SAP No. 3 shall be 3.25 lb/ton of 100% H₂SO₄, 24-hour rolling average and 3.5 lb/ton, 3-hour rolling average if the converter modifications is not completed by 12/1/2004.”

There will be no changes in the molten sulfur throughput at the facility; however, there will be a proportionate increase in the amount of sulfur supplied to the three sulfuric acid plants.

The proposed project will result in actual increases in emissions of SO₂, SAM and nitrogen oxides (NO_x). Emissions increases of these pollutants are above their respective significant emission levels per Table 62-212.400-2, F.A.C., and require PSD new source review.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

4.1 Project Emissions

The following table compares the current actual emissions to the applicant's proposed maximum emissions in tons/year:

Source Description	SO ₂	NO _x	SAM
<u>Potential Emissions From Modified Sources^a</u>			
A. Modified No. 1 Sulfuric Acid Plant	2,172	74	62
B. Modified No. 2 Sulfuric Acid Plant	2,172	74	62
C. Modified No. 3 Sulfuric Acid Plant	2172	74	62
<i>Total Potential Emission Rates</i>	6,516	222	186
<u>Actual Emissions From Current Operations^b</u>			
A. No. 1 Sulfuric Acid Plant	1,694	34	21
B. No. 2 Sulfuric Acid Plant	1,808	47	30
C. No. 3 Sulfuric Acid Plant	1,640	30	32
<i>Total Actual Emission Rates</i>	5,142	111	83
TOTAL NET CHANGE	1,374	111	103
PSD SIGNIFICANT EMISSION RATE^c	40	40	7
PSD REVIEW TRIGGERED?	Yes	Yes	Yes
^a – Potential emissions based on BACT review ^b – Actual emissions are based on 1999 and 2000 data ^c – PSD significant emission levels based on Rule 62-212, FAC			

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

5. RULE APPLICABILITY

The project is subject to the federal new source performance standards (NSPS) for sulfuric acid plants (40 CFR 60, Subpart H), incorporated by reference in Rule 62-204.800, F.A.C. The proposed project is also subject to permitting, preconstruction review, emissions limits and compliance requirements under the provisions of Chapter 403, Florida Statutes, and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.).

This facility is located in Polk County, an area designated as attainment for all criteria pollutants in accordance with Rule 62-204.360, F.A.C. The proposed project is subject to review under Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD), because the potential emission increases for sulfur dioxide, sulfuric acid mist and nitrogen oxides exceed the significant emission rates given in Chapter 62-212, Table 62-212.400-2, F.A.C. PSD review requires an assessment of air quality impacts and a determination of Best Available Control Technology (BACT).

The emission units affected by this permit modification shall comply with all applicable provisions of the Florida Administrative Code (including applicable portions of the Code of Federal Regulations incorporated therein) 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 62-210.300	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 62-213	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
Rule 62-297.520	EPA Continuous Monitor Performance Specifications

6. SOURCE IMPACT ANALYSIS

6.1 Air Quality Analysis

As stated in the application, the proposed project will increase emissions of SO₂, SAM and NO_x excess of PSD significant amounts. SAM is a non-criteria pollutant and has no AAQS or PSD

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

increments defined for it; therefore, an air quality impact analysis was required only for SO₂ and NO_x. For SAM, the BACT requirements will establish the emission limits for this project. The PSD regulations require an analysis of impacts on ambient air, soils, vegetation, visibility, growth-related air quality impacts and impacts on the air quality related values. The PSD regulations require the following air quality analyses for this project:

- Significant impact analysis for SO₂ and NO_x;
- PSD increment analysis for the SO₂ 3-hour averaging time;
- Ambient Air Quality Standards (AAQS) Analysis for the SO₂ 3-hour averaging time;
- Analysis of impacts on soils, vegetation, wildlife, visibility and growth-related air quality impacts;

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."

6.2 Determination of Air Quality Monitoring Exemption

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. The monitoring requirement may be satisfied by using existing representative monitoring data, if available. An exemption to the monitoring 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 minimis concentration. In addition, if EPA has not established an acceptable monitoring method for the specific pollutant, monitoring may not be required.

The table below shows that predicted SO₂ and NO_x impacts from the project are predicted to be below the de minimis level. Preconstruction ambient air quality monitoring is not required for these pollutants.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Maximum Project Air Quality Impacts for Comparison to De Minimis Ambient Levels

Pollutant	Avg. Time	Max Predicted Impact ($\mu\text{g}/\text{m}^3$)	De Minimis Level ($\mu\text{g}/\text{m}^3$)	Impact Above De Minimis?
SO ₂	24-hour	1.2	13	No
NO _x	Annual	0.1	14	No

6.3 Models and Meteorological Data Used in the Air Quality Impact Analysis

PSD Class II Area Model

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.

Meteorological data used in the ISCST3 model consisted of a consecutive 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.

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, both the highest short-term predicted concentrations and the highest predicted yearly averages were compared to their respective significant impact levels.

PSD Class I Area Model

Since the PSD Class I CNWA is greater than 50 km from the proposed facility, long-range transport modeling was required for the Class I impact assessment. The California Puff (CALPUFF) dispersion model was used to evaluate the potential impact of the proposed pollutant emissions on the PSD Class I increments and on two Air Quality Related Values (AQRV): regional haze and nitrogen deposition. CALPUFF is a non-steady state, Lagrangian, long-range transport model that incorporates Gaussian puff dispersion algorithms. This model determines

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, line, area, and volume sources. The CALPUFF model has the capability to treat time-varying sources. It is also suitable for modeling domains from tens of meters to hundreds of kilometers, and has mechanisms to handle rough or complex terrain situations. Finally, the CALPUFF model is applicable for inert pollutants as well as pollutants that are subject to linear removal and chemical conversion mechanisms.

The meteorological data used in the CALPUFF model was processed by the California Meteorological (CALMET) model. The CALMET model utilizes data from multiple meteorological stations and produces a three-dimensional modeling grid domain of hourly temperature and wind fields. The wind field is enhanced by the use of terrain data, which is also input into the model. Two-dimensional fields such as mixing heights, dispersion properties, and surface characteristics are produced by the CALMET model as well. For this project, the CALMET model produced a modeling domain extending 340 km in the north-south direction by 300 km in the east-west direction. The modeling domain was produced by using 1990 meteorological data.

6.3 Significant Impact Analysis

Initially, the applicant conducts modeling using only the proposed project's emissions changes. If this modeling shows significant impacts, further modeling is required to determine the project's impacts on the AAQS or PSD increments. To determine the SO₂ and NO_x significant impact areas for the proposed project, concentrations were predicted using polar grids. The receptor grids were comprised of 36 radials, spaced at 10-degree intervals, which began at the plant property and extended out to 20 km. In addition to these 504 polar receptors, an additional 598 Cartesian grid receptors, spaced at 100 m, were used to predict impacts along the fence line areas. IMC will continue to take measures to ensure that all property boundaries are properly fenced or have other physical barriers (equivalent to a fence).

Fourteen discrete receptors were located in the Chassahowitzka National Wilderness Area (CNWA) which is a PSD Class I area located approximately 103 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. The results of the modeling indicated that the maximum predicted Class II 3-hour SO₂ ambient air impact, of 44 ug/m³ was above the significant level of 25 ug/m³ up to a distance of six kilometers from the plant. Therefore, further SO₂ AAQS and PSD increment analyses in the vicinity of the project were required for this project for the 3-hour averaging time. No other significant impacts were predicted in the vicinity of the project or in the CNWA; therefore, no further modeling for this project was required for these pollutants.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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

Pollutant	Averaging Time	Maximum Predicted Impact ($\mu\text{g}/\text{m}^3$)	Significant Impact Level ($\mu\text{g}/\text{m}^3$)	Significant Impact
SO ₂	Annual	0.4	1	No
	24-hour	1	5	No
	3-hour	44	25	Yes
NO _x	Annual	0.1	1	No

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

Pollutant	Averaging Time	Maximum Predicted Impact ($\mu\text{g}/\text{m}^3$)	Significant Impact Level ($\mu\text{g}/\text{m}^3$)	Significant Impact
SO ₂	Annual	0.01	0.1	No
	24-hour	0.04	0.2	No
	3-hour	0.6	1.0	No
NO ₂	Annual	0.002	0.1	No

6.4 AAQS Analysis

For pollutants subject to an AAQS review, the total impact on ambient air quality is obtained by adding "background" concentrations to the maximum modeled concentrations for each pollutant and averaging time. The maximum modeled concentrations are based on the maximum allowable emissions from facility sources and all other sources in the vicinity of the facility. These "background" concentrations take into account all sources of a particular pollutant that are not explicitly modeled. The applicant included a background concentration of 180 $\mu\text{g}/\text{m}^3$ from a nearby (Anderson Road) ambient air monitor. The results of the AAQS modeling indicated a maximum predicted 3-hour ambient air impact of 613 $\mu\text{g}/\text{m}^3$, or 793 $\mu\text{g}/\text{m}^3$ including the background concentration levels, well within the allowable concentration level of 1300 $\mu\text{g}/\text{m}^3$.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

6.5 PSD Class II Analysis

The PSD increment represents the amount that new sources in an area may increase ambient ground level concentrations of a pollutant from a baseline concentration, which was established in 1977 for SO₂ (the baseline year was 1975 for existing major sources of SO₂). The emission values that are input into the model for predicting increment consumption are based on maximum potential emissions from increment-consuming facility sources and all other increment-consuming sources in the vicinity of the facility. The maximum predicted PSD increment consumption, from the proposed project and the significant PSD increment consuming and expanding sources, of 279 ug/m³ is well within the allowable 3-hour Class II area PSD increment of 512 ug/m³. This translates to a cumulative Class II area 3-hour SO₂ PSD increment consumption of about 54 percent.

6.6 Additional Impact Analysis

Impact Analysis Impacts On Soils, Vegetation, And Wildlife near the project and in the PSD Class I area

An air quality related values (AQRV) analysis was performed by the applicant. No significant impacts are expected due to the proposed project. An analysis of nitrogen deposition impacts in the CNWA using the CALPUFF model was also done. Based on Federal Land Manager (FLM) criteria, no adverse deposition impacts were predicted. The project impacts are less than the significant impact levels, which in-turn are less than the AAQS and applicable allowable increments for each pollutant. Because the AAQS are designed to protect both the public health and welfare and the project impacts are less than significant, it is reasonable to assume the impacts on soils, vegetation, and wildlife will be minimal or insignificant.

Impact On Visibility

A regional haze analysis using the CALPUFF model to determine visibility impacts in the CNWA Class I area was required by the U.S. Fish and Wildlife Service (FWS). No significant impacts were predicted.

Growth-Related Air Quality Impacts

The proposed modification will not significantly change employment, population, housing or commercial/industrial development in the area to the extent that a significant air quality impact will result.

7. CONCLUSION

Based on the foregoing technical evaluation of the application and additional information submitted by the applicant, the Department has made a preliminary determination that the proposed project will comply with all applicable state air pollution regulations provided that the Department's Best Available Control Technology Determination is implemented and certain

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

conditions are met. The General and Specific Conditions are listed in the attached draft conditions of approval.

Permit Engineer: Syed Arif, P.E. II
Meteorologist: Cleve Holladay

PERMITTEE:

IMC Phosphates MP, Inc.
3095 Highway 640 West
Mulberry, Florida 33860

Authorized Representative:

Mike Daigle
General Manager

File No.	1050059-036-AC
Permit No.	PSD-FL-325
SIC No.	2874
Project:	New Wales Plant
Expires:	June 30, 2007

PROJECT AND LOCATION:

Permit for the construction /modification of the New Wales Plant to increase production rate of the existing Sulfuric Acid Plants Nos. 1, 2 and 3 to 3400 tons per day, each. The 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 A Best Operational Start-up Procedures for Sulfuric Acid Plants
Appendix BD BACT Determination
Appendix GC Construction Permit General Conditions

Howard L. Rhodes, Director
Division of Air Resources
Management

SECTION I. FACILITY INFORMATION

FACILITY DESCRIPTION

The New Wales Plant is an agricultural chemicals manufacturing facility. Phosphate rock is reacted with sulfuric acid to make phosphoric acid. The phosphoric acid is further processed into monoammonium phosphate (MAP), diammonium phosphate (DAP) and animal feed ingredients.

This permit is issued to allow an increase in the production rate of the existing Sulfuric Acid Plants Nos. 1, 2 and 3 to 3400 tons per day, each; and a proportionate increase in the sulfur feed rate to the three plants.

REGULATORY CLASSIFICATION

The facility 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 sulfur dioxide and nitrogen oxides.

PERMIT SCHEDULE:

- 11-27-2001: Date of Receipt of Application
- 05-16-2002: Application Complete
- 05-xx-2002: Mailed Intent to Issue Permit
- 06-xx-2002: Notice published in the _____

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 11-27-01
- Department's incompleteness letter dated 12-26-2001
- Applicant's letters received 1-29, 3-20, 4-30, 5-2, and 5-16-2002.
- Technical Evaluation and Preliminary Determination dated 5-xx-2002
- Best Available Control Technology determination (issued concurrently with permit)

AIR CONSTRUCTION PERMIT 1050059-036-AC, PSD-FL-325

SECTION II. EMISSION UNIT(S) 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. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of Chapter 403, F.S. and Florida Administrative Code Chapters 62-4, 62-110, 62-204, 62-212, 62-213, 62-296, 62-297 and the Code of Federal Regulations Title 40, Part 60, adopted by reference in the Florida Administrative Code (F.A.C.) regulations. 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. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]
5. Expiration: This air construction permit shall expire on **June 30, 2007** [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. 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.
8. Stack Testing Facilities: Stack sampling facilities shall be installed in accordance with Rule 62-297.310(6), F.A.C.

SECTION II. EMISSION UNIT(S) ADMINISTRATIVE REQUIREMENTS

9. 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.

10. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

AIR CONSTRUCTION PERMIT 1050059-036-AC AND PSD-FL-325
SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

COMMON CONDITIONS: 40 CFR 60 - NEW SOURCE PERFORMANCE STANDARDS

This permit addresses the following emission units:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
002	Sulfuric Acid Plant (SAP) No. 1
003	SAP No. 2
004	SAP No. 3

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.

- 40 CFR 60.7, Notification and record keeping
- 40 CFR 60.8, Performance tests
- 40 CFR 60.11, Compliance with standards and maintenance requirements
- 40 CFR 60.12, Circumvention
- 40 CFR 60.13, Monitoring requirements
- 40 CFR 60.19, General notification and reporting requirements

The Sulfuric Acid Plant Nos. 1, 2 and 3 are subject to the applicable requirements of the New Source Performance Standards (NSPS) under 40 CFR 60 Subpart H, Standards of Performance for Sulfuric Acid Plants.

SPECIFIC CONDITIONS :

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

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
002	SAP No. 1
003	SAP No. 2
004	SAP No. 3

1. Unless otherwise indicated, the construction and operation of the subject agricultural chemicals production facilities 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 for Sulfuric Acid Plants, Subpart H, as applicable. **[Rule 62-204.800 F.A.C.]**
3. The maximum operation rates for SAP Nos. 1, 2 and 3, each, shall not exceed 3400 tpd 100% H₂SO₄ with a proportionate supply of sulfur from the existing sulfur system. **[Rule 62-210.200, F.A.C. (Definitions - Potential Emissions)]**
4. The subject emission units are allowed to operate continuously (8760 hours/year). **[Rule 62-210.200, F.A.C. (Definitions - Potential Emissions)]**

AIR CONSTRUCTION PERMIT 1050059-036-AC AND PSD-FL-325
SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

5. Sulfur dioxide (SO₂) emissions shall not exceed the following for each SAP [Rule 62-212.400, F.A.C.]:

SAP No.	lb/ton of 100% H ₂ SO ₄	lb/hr	TPY
1	3.5, 24-hr rolling average	496	2,172
	4.0, 3-hr rolling average	567	
2	3.5, 24-hr rolling average	496	2,172
	4.0, 3-hr rolling average	567	
3	3.5, 24-hr rolling average	496	2,172
	4.0, 3-hr rolling average	567	

6. The SO₂ emission limit for SAP No. 1 shall be 3.25 lb/ton of 100% H₂SO₄, 24-hour rolling average and 3.5 lb/ton of 100% H₂SO₄, 3-hour rolling average if the converter modifications is not completed by 12/31/2003. [Rule 62-212.400, F.A.C.]
7. The SO₂ emission limit for SAP No. 2 shall be 3.25 lb/ton of 100% H₂SO₄, 24-hour rolling average and 3.5 lb/ton of 100% H₂SO₄, 3-hour rolling average if the converter modifications is not completed by 7/31/2004. [Rule 62-212.400, F.A.C.]
8. The SO₂ emission limit for SAP No. 3 shall be 3.25 lb/ton of 100% H₂SO₄, 24-hour rolling average and 3.5 lb/ton, 3-hour rolling average if the converter modifications is not completed by 12/1/2004. [Rule 62-212.400, F.A.C.]
9. Sulfuric acid mist emissions shall not exceed the following for each plant [Rule 62-210.200, F.A.C.]:

SAP No.	lb/ton of 100% H ₂ SO ₄	lb/hr	TPY
1	0.10	14	62
2	0.10	14	62
3	0.10	14	62

10. Emissions of nitrogen oxides from the Sulfuric Acid Plant Nos. 1 and 2 each, shall not exceed 0.12 lb/ton 100% H₂SO₄, 17 lb/hr and 75 tpy. [Rule 62-212.400, F.A.C.]
11. Visible emissions shall not exceed 10 percent opacity from the sulfuric acid plants. [Rule 62-212.400, F.A.C.]
12. Best operational practices to minimize leaks of sulfur dioxide and sulfur trioxide, or other fugitive process emissions shall be adhered to and shall include regular inspections and prompt repair or correction of any leaks or other fugitive emissions. [Rule 62-296.320, F.A.C.]

AIR CONSTRUCTION PERMIT 1050059-036-AC AND PSD-FL-325
SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

13. Sulfuric acid plants are authorized to emit excess emissions from start-up for a period of three consecutive hours provided best operational practices to minimize emissions, in accordance with the agreement titled "Best Operational Start-Up Practices For Sulfuric Acid Plants" is followed. The provisions of the agreement issued by the Department, are hereby added to this permit as Appendix A and shall be added to the Title V permit. [Rule 62-210.700, F.A.C., 40 CFR 60.7]
14. A continuous emissions monitoring system (CEMS) shall be installed, calibrated, maintained, operated, and used to determine compliance with the 3-hour and 24-hour rolling average emissions limit for SO₂. The CEMS shall be installed and certified before the initial performance test and operated in compliance with 40 CFR 60, Appendix F, Quality Assurance Procedures (2001 version) or other Department-approved QA plan; 40 CFR 60, Appendix B, Performance Specification 2 (2001 version).

The CEMS shall calculate and record emission rates in units of pounds SO₂ per ton of 100 percent sulfuric acid produced. Each operating day, the rolling averages of the SO₂ emission rate for the 3 hours and the 24 hours shall be calculated and recorded. Emissions shall be calculated in units of pounds of SO₂ per ton of 100 percent acid produced using one of the methods specified in 40 CFR 60.84. Averages are to be calculated as the arithmetic mean of each monitored operating hour in which sulfur is burned in the unit and at least two emission measurements are recorded at least 15 minutes apart. Data taken during periods of startup, or when sulfur is not burned in the unit, or when the CEMS is out of control as defined in 40 CFR 60, Appendix F, Section 5.2, shall be excluded from the 3-hour and the 24-hour rolling averages. Data recorded during periods of shutdown, malfunction, load change, and continuous operating periods shall be included in the calculation of the 3-hour and the 24-hour rolling averages.

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

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

AIR CONSTRUCTION PERMIT 1050059-036-AC AND PSD-FL-325
SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

15. Before this construction permit expires, the subject emission units shall be tested for compliance with the above emission limits. For the duration of all tests the emission unit 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 30 consecutive days for the purposes of additional compliance testing to regain the permitted capacity in the permit. **[Rule 62-297.310, F.A.C.]**
16. 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.]**
17. The procedures for the initial compliance test shall be in accordance with EPA Reference Methods 1, 2, 3, 4, 6C, 7E, 8 and 9, 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.]**
18. 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.]**
19. 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.]**
20. 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.]**
21. 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

AIR CONSTRUCTION PERMIT 1050059-036-AC AND PSD-FL-325
SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700, F.A.C.]

22. 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.]
23. The permittee shall notify the Bureau of Air Regulation (BAR) upon commencement of construction, as defined in 40 CFR 52.21(b)(11) with regards to each of the three sulfuric acid plants addressed by this permit and maintain a chronological record of the construction activities. The anticipated dates of commencement of construction for SAP 2 and 3 are 1/31/2003 and 5/1/2003, respectively. The permittee shall submit the construction activities schedule for approval by BAR 30 days prior to commencement of construction for SAP Nos. 2 and 3. The construction activities schedule shall provide a detailed listing of each maintenance activity and the anticipated completion date for each of those maintenance activities. The permittee shall also submit to BAR a status report covering each quarter of the construction activities after commencement of construction for SAP Nos. 1, 2 and 3. The submittal of the status report shall continue until the construction activities cease for SAP Nos. 1, 2 and 3. The permittee shall notify the Bureau of Air Regulation of any changes to the construction activities schedule that would affect the applicability of the BACT determinations. [40 CFR 52.21]
24. Approval to construct shall become invalid if construction is not commenced within 18 months after receipt of such approval, 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)].
25. 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)]
26. An application for a Title V permit revision shall be submitted, upon completion of construction, pursuant to Chapter 62-213, FAC, to the Department's Southwest District Office. [Rule 62-213, F.A.C.]
27. This facility shall maintain adequate fencing or physical barriers equivalent to fencing around the property boundary. [Rule 62-204.800(1)(a), F.A.C.]

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

1. Only one sulfuric acid plant at a facility should be started up and burning sulfur at a time. There are times when it will be acceptable for more than one sulfuric acid plant to be in the start-up mode at the same time, provided the following condition is met. It is not acceptable to initiate sulfur burning at one sulfuric acid plant when another plant at the same facility is emitting SO₂ at a rate in excess of the emission limits imposed by the permit or rule, as determined by the CEMs emission rates for the immediately preceding 20 minutes.
2. A plant start-up must be at the lowest practicable operating rate, not to exceed 70 percent of the designated operating rate, until the SO₂ monitor indicates compliance. Because production rate is difficult to measure during start-up, if a more appropriate indicator (such as blower pressure, furnace temperature, gas strength, blower speed, number of sulfur guns operating, etc.) can be documented, tested and validated, the Department will accept this in lieu of directly documenting of the suitable list of surrogate parameters to demonstrate and document the reduced operating rate on a plant-by-plant basis. Documentation that the plant is conducting start-up at the reduced rate is the responsibility of the owner or operator.
3. Sulfuric acid plants are authorized to emit excess emissions from start-up for a period of three consecutive hours provided best operational practices, in accordance with this agreement, to minimize emissions are followed. No plant shall be operated (with sulfur as fuel) out of compliance for more than three consecutive hours. Thereafter, the plant shall be shut down. the plant shall be shut down (cease burning sulfur) if, as indicated by the continuous emission monitoring system, the plant is not in compliance within three hours of startup. Restart may occur as soon as practicable following any needed repairs or adjustments, provided the corrective action is taken and properly documented.
4. Cold Start-Up Procedures.
 - a. Converter.
 - (1) The inlet and outlet temperature at the first two masses of catalyst shall be sufficiently high to provide immediate ignition when SO₂ enters the masses. In no event shall the inlet temperature to the first mass be less than 800°F or the outlet temperature to the first two masses be less than 700°F. These temperatures are the desired temperatures at the time the use of auxiliary fuel is terminated
 - (2) The gas stream entering the converter shall contain SO₂ at a level less than normal, and sufficiently low to promote catalytic conversion to SO₃.
 - b. Absorbing Towers.

The concentration., temperature and flow of circulating acid shall be as near to normal conditions as reasonably can be achieved. In no event shall the concentration be less than 96 percent H₂SO₄.

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

5. Warm Restart.

a. Converter

The inlet and outlet temperatures of the first two catalyst masses should be sufficiently high to ensure conversion. One of the following three conditions must be met:

- (1) The first two catalyst masses inlet and outlet temperatures must be at a minimum of 700°F; or.
- (2) Two of the four inlet and outlet temperatures must be greater than or equal to 800°F; or.
- (3) The inlet temperature of the first catalyst must be greater than or equal to 600°F and the outlet temperature greater than or equal to 800°F. Also, the inlet and outlet temperatures of the second catalyst must be greater than or equal to 700°F.

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

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

b. Absorbing Towers.

The concentration, temperature and flow of circulating acid shall be as near to normal conditions as reasonably can be achieved. In no event shall the concentration be less than 96 percent H₂SO₄.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

New Wales Plant
IMC Phosphates MP, Inc.
PSD-FL-325 / 1050059-036-AC
Mulberry, Polk County

The project proposed by IMC Phosphates MP, Inc. will increase the production rate of the existing Sulfuric Acid Plants (SAP) 1, 2 and 3 to 3400 tons per day, each. The proposed project involves upgrading and/or replacement of plant equipment to accomplish the production increases, as described in the permit application. SAP 1 will undergo replacement of an interpass tower and necessary modifications to the converter to achieve the current BACT limit for sulfur dioxide (SO₂) of 3.5 lb/ton of 100% H₂SO₄, 24-hour rolling average and 4.0 lb/ton, 3-hour rolling average showing compliance with a certified continuous emission monitor.

SAP 2 and 3 have tentative turnarounds scheduled in the coming years and the facility has provided an anticipated date of commencement of construction of 1/31/2003 and 9/30/2003 for SAP 2 and 3, respectively for the turnarounds. Some of the equipments that may undergo maintenance/repair/replacement are acid towers, converter, heat exchange equipment, blowers, pumps, coolers, deaerator, furnace, heat recovery system, ducts and tanks for both SAP 2 and 3. There will be no changes in the molten sulfur throughput at the facility; however, there will be a proportionate increase in the amount of sulfur supplied to the three sulfuric acid plants. As a result of this project, increases in emissions of SO₂, sulfuric acid mist (SAM) and nitrogen oxides (NO_x) from the proposed modifications may occur.

The proposed modification will result in a significant increase in emissions of SO₂, SAM and NO_x. 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. Descriptions of the process, project, air quality effects, and rule applicability are given in the Technical Evaluation and Preliminary Determination, accompanying the Department's Intent to Issue.

DATE OF RECEIPT OF COMPLETE BACT APPLICATION:

Original application received on November 27, 2001. BACT application was complete on May 16, 2002.

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 what is achievable through application of production

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to the following:

- 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 and 63 - 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:

- **Combustion Products** (SO₂, NO_x, PM). Controlled generally by good combustion of clean fuels.
- **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.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

BACT EMISSION LIMITS PROPOSED BY APPLICANT:

POLLUTANT	EMISSION UNIT	EMISSION LIMIT (lb/hr)	LIMIT BASIS	CONTROL TECHNOLOGY
SO ₂	Sulfuric Acid Plant Nos. 1, 2 and 3	496	3.5 lb/ton H ₂ SO ₄ ; 24-hour 4.0 lb/ton H ₂ SO ₄ ; 3-hour	Double Absorption Process
SAM	Sulfuric Acid Plant Nos. 1, 2 and 3	17	0.12 lb/ton H ₂ SO ₄	Fiber Mist Eliminators
NO _x	Sulfuric Acid Plant Nos. 1, 2 and 3	17	0.12 lb/ton H ₂ SO ₄	Good Combustion Practice

The applicant has proposed to use the existing double absorption process and improved process parameters to achieve the proposed limits for the sulfuric acid plants.

BACT POLLUTANT ANALYSIS

The SAPs utilize double absorption technology. In the SAPs, sulfur is burned with dried atmospheric oxygen to produce SO₂. The SO₂ is catalytically oxidized to sulfur trioxide (SO₃) over a catalyst bed. The SO₃ is then absorbed in H₂SO₄ to produce additional H₂SO₄. The remaining SO₂, not previously oxidized, is passed over a final converter bed of catalyst and the SO₃ produced is then absorbed in H₂SO₄. SO₂ and SAM emissions result from the process, as well as a small amount of NO_x.

The control equipment for the SAPs consists of two systems in series. The first system is integral to the H₂SO₄ production process and is the double contact process where the converted SO₃ emissions from the sulfur combustion are absorbed by water in a tower. This process is at least 99 percent efficient at absorbing SO₃. This system is considered process equipment and not considered control equipment. The second system is a high-velocity mist eliminator, which causes moisture (droplets containing sulfuric acid mist) from the double-contact process to be removed from the air stream by impingement. This process is at least 90 percent efficient at removing SAM from the air stream and, therefore, recovering the product.

The proposed project includes an increase in the production rate of the existing SAP Nos. 1, 2 and 3 to 3400 tons per day, each. It involves upgrading and/or replacement of plant equipment to accomplish the production increases, as described in the permit application. SAP 1 will undergo replacement of an interpass tower and necessary modifications to the converter to achieve a BACT limit for sulfur dioxide (SO₂) of 3.5 lb/ton of 100% H₂SO₄, 24-hour rolling average and 4.0 lb/ton of 100% H₂SO₄, 3-hour rolling average, showing compliance by continuous emission monitor (CEM). This higher 3-hour emission rate is necessary to account for plant process fluctuations and variability.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

Recent SO₂ compliance test data indicates that the average SO₂ emissions are between 3.2 and 3.6 lb/ton. These SO₂ levels are above the proposed 3.5 lb/ton, 24-hour average limit, but less than the proposed 3-hour limit of 4.0 lb/ton. Variable emissions result from changing operating rates, process variables, and catalyst aging. Since, this project is a modification at an existing plant, the proposed BACT limit for SO₂ of 3.5 lb/ton, 24-hour average and 4.0 lb/ton, 3-hour average, is reasonable based on recent BACT determinations for similar plants. The Department might have made a different determination if this was a new facility.

SAP 1 will undergo turn-around by October 2002; acid tower replacement and converter modifications are planned during the turn-around. The Department believes that SAP 1 should meet the current BACT limit of 3.5 lb/ton, 24-hour rolling average and 4.0 lb/ton, 3-hour rolling average by 12/31/2003. If the acid tower replacement and converter modifications are not completed by 12/31/2003, the facility will have to comply with a stricter BACT limit of 3.25 lb/ton, 24-hour rolling average and 3.5 lb/ton, 3-hour rolling average. (compliance by CEM)

SAP 2 and 3 have turn-arounds tentatively scheduled in 2004 and 2005, respectively and the facility has provided an anticipated date of commencement of construction of 1/31/2003 and 9/30/2003 for SAP 2 and 3, respectively for the turn-arounds. The Department believes that the commencement of construction date for SAP 3 can be moved ahead to 5/2003 and an 18-month construction period is a reasonable time for converter modifications planned for each plant. Both these plants will meet the current BACT limit of 3.5 lb/ton, 24-hour rolling average and 4.0 lb/ton, 3-hour rolling average (compliance by CEM) if the converter modifications are completed within 18-months of commencement of construction date. If the converter modifications is not completed in 18-months, the facility will have to comply with a stricter BACT limit for SO₂ emissions. The BACT limit beyond the 18-month period is established by the Department to be 3.25 lb/ton, 24-hour rolling average and 3.5 lb/ton, 3-hour rolling average (compliance by CEM).

Additional modifications of upgrading and/or replacement of other plant equipment for SAP 1, 2 and 3 (i.e., acid towers, heat exchange equipment, blowers, pumps, coolers, deaerator, furnace heat recovery system, ducts and tanks) will trigger BACT review, if construction is discontinued for a period of 18 months or more.

Recent SAM compliance test data indicates that the average SAM emissions are between 0.04 and 0.06 lb/ton. These SAM levels are below the future allowable emissions of 0.10 lb/ton for the Nos. 1, 2 and 3 SAP.

The applicant will achieve the proposed emissions limits by improving the sulfur dioxide conversion of the traditional double absorption plant. The improvement will likely be accomplished by an increase in the catalyst loading. The emission limit of 3.5 lb/ton, 24-hour average and 4 lb/ton, 3-hour average was recently imposed on the modified sulfuric acid plants at Cargill, Riverview.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

Control options involving production of by-products or wastes have been rejected as BACT. There is no indication that add-on control methods are competitive with process improvements that result in production of additional sulfuric acid. Recovery of sulfuric acid mist is an economic necessity as well as an environmental requirement. High efficiency mist eliminators are considered BACT for sulfuric acid mist.

The Department agrees with the applicant that the sulfur burning process utilized in the sulfuric acid plant inherently produces low NO_x emissions, and is considered BACT for NO_x.

BACT DETERMINATION BY THE DEPARTMENT:

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

POLLUTANT	EMISSION UNIT	EMISSION LIMIT (lb/hr)	LIMIT BASIS	CONTROL TECHNOLOGY
SO ₂	Sulfuric Acid Plant No. 1	496	3.5 lb/ton H ₂ SO ₄ , 24-hr rolling average	Double Absorption Process
		567	4.0 lb/ton H ₂ SO ₄ , 3-hr rolling average	
SO ₂	Sulfuric Acid Plant No. 1 (if converter modification goes beyond 12/31/2003)	460	3.25 lb/ton H ₂ SO ₄ , 24-hr rolling average	Double Absorption Process
		496	3.5 lb/ton H ₂ SO ₄ , 3-hr rolling average	
SO ₂	Sulfuric Acid Plant Nos. 2 & 3 (if converter modification is completed within 18 months of commencement of construction)	496	3.5 lb/ton H ₂ SO ₄ , 24-hr rolling average	Double Absorption Process
		567	4.0 lb/ton H ₂ SO ₄ , 3-hr rolling average	
SO ₂	Sulfuric Acid Plant Nos. 2 & 3 (if converter modification goes beyond 18 months of commencement of construction)	460	3.25 lb/ton H ₂ SO ₄ , 24-hr rolling average	Double Absorption Process
		496	3.5 lb/ton H ₂ SO ₄ , 3-hr rolling average	
SAM	Sulfuric Acid Plant Nos. 1, 2 and 3	14	0.10 lb/ton H ₂ SO ₄	Fiber Mist Eliminators
NO _x	Sulfuric Acid Plant Nos. 1, 2 and 3	17	0.12 lb/ton H ₂ SO ₄	Good Combustion Practice

The Department made a determination that the BACT limit for SAM should be 0.10 lb/ton of 100% H₂SO₄. This was based on an earlier BACT determination done for Cargill, Riverview (PSD-FL-315, issued November 21, 2001) and the recent SAM compliance test data submitted by IMC. A SAM emission level lower than 0.10 lb/ton may not be achievable on a continuous basis without significant changes to the mist elimination system, particularly in light of the

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

potential effects of higher production, gas velocities, and other process variables. Such changes would require substantial physical modifications to the plants.

COMPLIANCE:

Compliance with the sulfur dioxide emission limit (3.5 lb/ton, 24-hour rolling average and 4.0 lb/ton, 3-hour rolling average) shall be demonstrated with a certified continuous emission monitor. Start-up excess emissions shall be permitted for three hours for the sulfuric acid plants as endorsed in an agreement titled "Best Operational Start-Up Practices For Sulfuric Acid Plants", which is attached as Appendix A of the permit.

Annual compliance testing with the sulfur dioxide, sulfuric acid mist and nitrogen oxides limits shall be demonstrated using EPA Reference Methods 1, 2, 3, 4, 6C, 7E, 8 and 9 as appropriate, and contained in 40 CFR 60, Appendix A.

DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

Syed Arif, P.E., Permit Engineer, New Source Review Section
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended By:

Approved By:

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

Howard L. Rhodes, Director
Division of Air Resources Management

Date:

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.


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.

TO: Clair Fancy

THRU: Al Linero

FROM: Syed Arif 

DATE: May 31, 2002

SUBJECT: IMC Phosphates MP, Incorporated
1050059-036-AC (PSD-FL-325)

Attached is the Public Notice package to modify the existing Sulfuric acid plants 1, 2 and 3 at its phosphate fertilizer manufacturing facility located in Mulberry, Florida. The proposed changes will increase the production rates for the three plants to 3,400 tons per day. The proposed project involves upgrading and/or replacement of plant equipment to accomplish the production increases, as described in the permit application.

The Department proposed 3.5 lb/ton, 24-hr. rolling average and 4.0 lb/ton, 3-hr rolling average for SO₂ and 0.10 pounds of Sulfuric Acid Mist per ton of product as BACT for this project. The BACT emission limit established for SO₂ will be complied with a certified continuous emission monitor. A more stringent BACT limit for SO₂ is also proposed for all three sulfuric acid plants if the converter modifications for those plants are not completed by a certain date.

The project is subject to Prevention of Significant Deterioration (PSD) review for sulfur dioxide, nitrogen oxides and sulfuric acid mist in accordance with 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.

Sulfur dioxide and sulfuric acid mist emissions from the sulfuric acid plants will be controlled by the double absorption process and mist eliminators, respectively. An air quality impact analysis was required for sulfur dioxide and nitrogen oxides.

May 31 is Day 15 for the project.

I recommend your approval and signature.

AAL/sa

Attachments



Jeb Bush
Governor

Department of Environmental Protection

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

David B. Struhs
Secretary

P.E. Certification Statement

Permittee:
IMC Phosphates MP, Incorporated
New Wales Plant

DEP File No. 1050059-036-AC
Permit No. PSD-FL-325

Project type: Permit for increased production rate from 2,900 tons per day (TPD) to 3,400 TPD for the Nos. 1, 2 and 3 Sulfuric Acid Plants. The proposed project involves upgrading and/or replacement of plant equipment to accomplish the production increases, as described in the permit application. The Department proposed 3.5 lb/ton, 24-hr rolling average and 4.0 lb/ton, 3-hr rolling average for SO₂ and 0.10 pounds of SAM per ton of product as BACT for this project. A more stringent BACT limit for SO₂ is also proposed for all three sulfuric acid plants if the converter modifications for those plants are not completed by a certain date. The BACT emission limit established for SO₂ will be complied with a continuous emission monitor. The double absorption process and mist eliminators will control sulfur dioxide and sulfuric acid mist emissions from the sulfuric acid plants, respectively. An air quality impact analysis was required for sulfur dioxide and nitrogen oxides.

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).

Syed Arif 5/30/02
Syed Arif, P.E. Date
Registration Number: 51861

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"More Protection, Less Process"