



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

May 19, 1998

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. C. M. Farris
Vice President-Operations
Farmland Hydro, L.P.
4390 County Road 640 West
Bartow, Florida 33830

Re: DEP File No. 1050053-019-AC (PSD-FL-243)
2750 Tons Per Day Sulfuric Acid Plant (SAP 6)


Dear Mr. Farris:

Enclosed is one copy of the Draft Air Construction Permit for the new sulfuric acid plant (SAP 6) to be located at 4390 County Road 640 West, Bartow, Polk County. The Department's Intent to Issue Air Construction Permit and the "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT" are also included.

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

Please submit any written comments you wish to have considered concerning the Department's proposed action to Syed Arif, P.E., New Source Review Section, Mail Stop 5505, at the above letterhead address. If you have any other questions, please contact Mr. Arif at 850/921-8968

Sincerely,


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

CHF/sa

Enclosures

**NOTICE TO BE PUBLISHED
IN THE NEWSPAPER**

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File No. 1050053-019-AC (PSD-FL-243)

Farmland Hydro, L.P. 2750 TPD Sulfuric Acid Plant
Polk County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to Farmland Hydro L.P., to construct a new 2750 tons per day (TPD) sulfuric acid plant (SAP 6) to replace the existing SAP 3 located at 4390 County Road 640 West near Bartow in Polk County. A Best Available Control Technology (BACT) determination was required for sulfur dioxide (SO₂), sulfuric acid mist (SAM), and nitrogen oxides (NO_x) pursuant to Rules 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD). The applicant's name and address are: Farmland Hydro, L.P., 4390 County Road 640 West, Bartow, Florida 33830.

The new 2750 TPD SAP 6 will replace the existing 2100 TPD SAP 3 which will be permanently shut down. Control of SO₂ emissions is accomplished by the process itself which is based on the conversion of SO₂ to SO₃ and subsequent recovery as sulfuric acid product. The second absorption tower improves the efficiency of the process and also serves as the pollution control equipment. The BACT emission limit for SO₂ was determined by the Department to be 3.5 pounds per ton of sulfuric acid produced. The high efficiency mist eliminators, together with proper plant operation serve to minimize sulfuric acid mist (SAM) emissions. The nitrogen oxides (NO_x) emissions will be minimized by good combustion practices.

Maximum annual SO₂ emissions will be 1757 tons per year (TPY) while SAM emissions will be 75 TPY. Annual NO_x emissions will be approximately 60 TPY.

An air quality impact analysis was conducted. Emissions from the facility will not significantly contribute to or cause a violation of any state or federal ambient air quality standards. NO₂ emissions will not have a significant impact in the PSD Class II area; therefore, no PSD Class II increment consumption for NO₂ was calculated. The maximum predicted PSD Class II increments of SO₂, consumed by all sources in the area, including this project, will be as follows:

| | <u>PSD Class II Increment Consumed</u> (µg/m ³) | <u>Allowable Increment</u> (µg/m ³) | <u>Increment Consumed</u> (percent) |
|-----------------|--|--|--|
| SO ₂ | | | |
| 3-hour | 176 | 512 | 34 |
| 24-hour | 56 | 91 | 62 |
| Annual | 0 | 20 | 0 |

The project has no significant impact on the PSD Class I Chassahowitzka National Wilderness Area.

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

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

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

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

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

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

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

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

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

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

Polk County Public Works Department
Natural Resources & Drainage Division
4177 Ben Durrance Road
Bartow, Florida 33830
Telephone: 941/534-7377
Fax: 941/534-7374

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

In the Matter of an
Application for Permit by:

Mr. C.M. Farris, Vice President, Operations
Farmland Hydro, L.P.
Post Office Box 960
Bartow, Florida 33831

DEP File No. 1050053-019-AC
Draft PSD Permit No. PSD-FL-243
Sulfuric Acid Plant (SAP 6)
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, as detailed in the application specified above and attached Technical Review and Preliminary determination, for the reasons stated below.

The applicant, Farmland Hydro, L.P., applied on November 18, 1997 to the Department for an air construction permit for a new sulfuric acid plant at its phosphate fertilizer facility located at 4390 County Road 640 West, Bartow, 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 an air construction permit, including a review for the Prevention of Significant Deterioration and a determination of Best Available Control Technology for the control of nitrogen oxides, is 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 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT." The notice shall be published one time only within 30 (thirty) days in the legal advertisement section of a newspaper of general circulation in the area affected. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-1344; Fax 850/ 922-6979) within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit pursuant to Rule 62-103.150 (6), F.A.C.

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

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

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

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

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

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


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

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

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

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

Executed in Tallahassee, Florida.


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

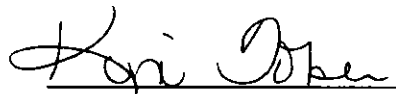
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this INTENT TO ISSUE AIR CONSTRUCTION PERMIT (including the PUBLIC NOTICE, and DRAFT permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 5-19-98 to the person(s) listed:

Mr. C. M. Farris, Farmland Hydro, L.P. *
Mr. Brian Beals, EPA
Mr. John Bunyak, NPS
Mr. John Koogler, P.E., K&A
Mr. Bill Thomas, SWD
Mr. Joe King, Polk County

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) 5-19-98
(Date)

TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION

FARMLAND HYDRO, L.P.

2750 Tons Per Day Sulfuric Acid Plant and
Molten Sulfur Storage & Handling
Bartow, Polk County

DEP File No. 1050053-019-AC
PSD-FL-243

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

May 19, 1998

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

1. APPLICATION INFORMATION

1.1 Applicant Name and Address

Farmland Hydro, L.P.
4390 County Road 640 West
Bartow, Florida 33830

Authorized Representative: Mr. C.M. Farris, V.P., Operations

1.2 Reviewing and Process Schedule

11-20-97: Date of Receipt of Application
11-20-97: Preliminary DEP Completeness Request
12-18-97: DEP Completeness Request
01-16-98: Farmland's response to DEP's Completeness Request of 12-18-97
02-11-98: DEP Completeness Request
03-13-98: Farmland's response to DEP's Completeness Request of 02-11-98
03-26-98: DEP Completeness Request
04-24-98: Farmland's response to DEP's Completeness Request of 03-26-98. Application complete
05-18-98: Issue Intent

2. FACILITY INFORMATION

2.1 Facility Location

The Farmland fertilizer facility is located off County Road 640, near Bartow, Polk County. This site is approximately 105 kilometers from the Chassahowitzka National Wilderness Area, a Class I PSD Area. The UTM coordinates of this facility are Zone 17; 410.3 km E; 3079.7 km N.

2.2 Standard Industrial Classification Codes (SIC)

| | | |
|--------------------|------|--|
| Major Group No. | 28 | Chemicals and Allied Products |
| Industry Group No. | 2874 | Phosphate Fertilizers |
| Industry Group No. | 2819 | Industrial Inorganic Chemicals (Sulfuric Acid) |

2.3 Facility Category

This phosphate fertilizer facility makes sulfuric acid, phosphoric acid, super phosphoric acid, monoammonium phosphate and diammonium phosphate. Phosphoric acid is made by acidulation of phosphate rock with sulfuric acid. Waste gypsum is produced and stacked. The phosphoric acid is reacted with ammonia to make monoammonium and diammonium phosphate. The sulfuric acid is produced on-site by burning elemental sulfur, catalytically converting the resulting sulfur dioxide to sulfur trioxide, and absorbing it into a recirculating sulfuric acid solution.

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.

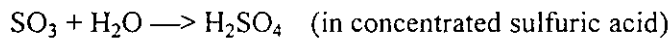
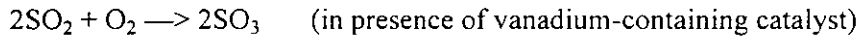
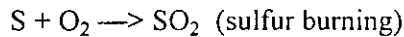
This industry is included in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. Because emissions are greater than 100 TPY for at least one criteria pollutant, the facility is also a major facility with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD). Per Table 62-212.400-2, modifications at the facility resulting in emissions increases greater than 40 TPY of NO_x or SO₂ or 7 TPY of sulfuric acid mist (SAM), require review per the PSD rules and a determination of Best Available Control Technology (BACT) per Rule 62-212, F.A.C. The facility includes sulfur storage and handling for which certain analyses are required per Rule 62-212.600, F.A.C.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

3. PROCESS DESCRIPTION

The plant is a sulfur-burning double absorption sulfuric acid plant. 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. The reactions are as follows:



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 (refer to Figure 1):

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 (SO₂). 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 consisting of four beds (passes) packed with catalyst. In a series of steps, the SO₂ and excess oxygen from the combustion air are progressively converted to SO₃. Between the third and fourth passes, the gases containing SO₃, some unconverted SO₂, oxygen, and atmospheric nitrogen are conveyed to an "interpass tower" where the SO₃ is absorbed into a stream of concentrated sulfuric acid and reacted with excess water to further strengthen the acid. By removing most SO₃ in the interpass absorber, the equilibrium favors further conversion of the remaining SO₂ to SO₃. This is accomplished in the final pass. The resulting gas stream is conveyed to the high-efficiency "final tower" where most of the remaining SO₃ reacts with water in a 98-99 percent sulfuric acid stream.

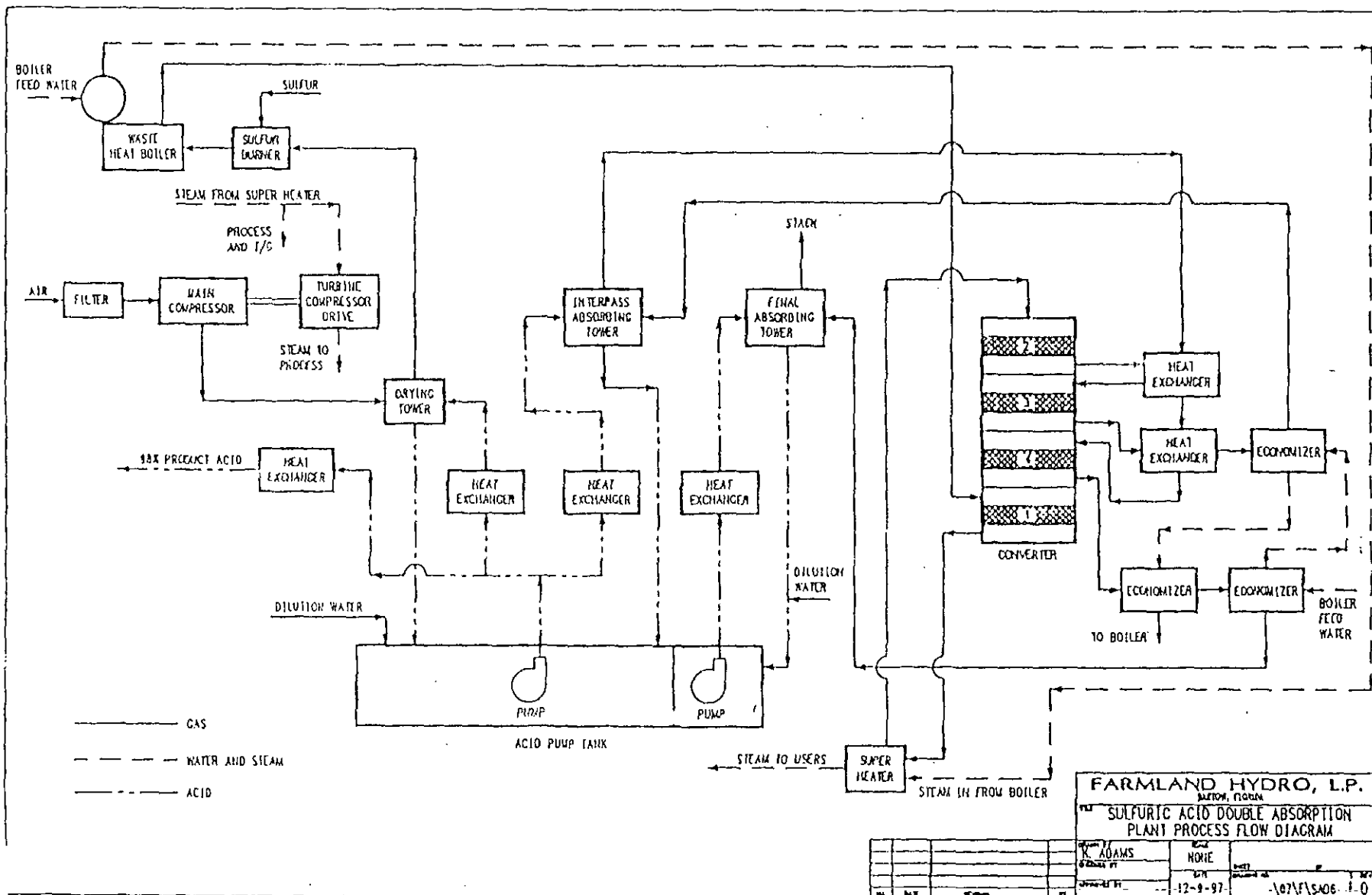
Throughout the conversion, the temperatures are moderated by an intricate arrangement of heat exchangers so that the excess heat is removed. Mist eliminators are used to insure that sulfuric acid sprays and fine mists are contained, thereby protecting plant equipment and minimizing emissions to the atmosphere.

4. PROJECT DESCRIPTION

This permit addresses the following emissions units:

| EMISSION UNIT NO. | SYSTEM | EMISSION UNIT DESCRIPTION |
|-------------------|--------------|---|
| 003 | Process | Sulfuric Acid Plant No. 3 |
| 038 | Process | Sulfuric Acid Plant No. 6 |
| 030-036 | Raw Material | Molten Sulfur Storage and Handling System |

Figure 1



FARMLAND HYDRO, L.P.
 SUTTON, IOWA
 SULFURIC ACID DOUBLE ABSORPTION
 PLANT PROCESS FLOW DIAGRAM

| | | | |
|-------------|----------|-------|--------------|
| Drawn by | R. ADAMS | Check | None |
| Checked by | | Date | 12-9-97 |
| Approved by | | Sheet | 107/15406-10 |

PLOTTED: 12-9-97

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

The applicant proposes the replacement of the existing 2100 TPD No. 3 SAP with a new 2750 TPD No. 6 SAP. The proposed project will result in actual increases in SO₂, sulfuric acid mist (SAM), and NO_x. There will also be minimal emissions of particulate matter, reduced sulfur compounds, volatile organic compounds and SO₂ from the molten sulfur system. Emission increases of particulate matter, reduced sulfur compounds and volatile organic compounds are below their respective significant emission levels per Table 62-212.400-2, F.A.C. and do not require PSD or non-attainment new source review. However, PSD review is required for SO₂, SAM and NO_x since emissions, per the application, will increase by more than PSD significant levels.

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 SO₂, SAM, and NO_x 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). New or modified sulfur storage and handling facilities require review per Rule 62-212.600, F.A.C.

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 62-212.600 | Sulfur Storage and Handling Facilities |
| Rule 62-213 | Operation Permits for Major Sources of Air Pollution |
| Rule 62-296.320 | General Pollutant Emission Limiting Standards |
| Rule 62-296.411 | Sulfur Storage and Handling Facilities |
| Rule 62-297.310 | General Test Requirements |
| Rule 62-297.401 | Compliance Test Methods |
| Rule 62-297.520 | EPA Continuous Monitor Performance Specifications |

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

6. SOURCE IMPACT ANALYSIS

6.1 Emission Limitations

The proposed project will increase annual emissions of the following PSD pollutants (Table 212.400-2, F.A.C.): SO₂, SAM, and NO_x. Per the application, the current emissions and requested allowable emissions (as revised on April 21, 1998) for the proposed project are summarized in the following table.

6.2 Emission Summary

Emissions Sulfuric Acid Plant and Sulfur Storage and Handling (total)

| Pollutant | Current Emissions (tons/yr) | Future Emissions (tons/yr) | Net Increase (tons/yr) | PSD Significant Level (tons/yr) |
|-----------------|-----------------------------|----------------------------|------------------------|---------------------------------|
| SO ₂ | 1227.3 | 1776.3 | 549 | 40 |
| NO _x | 39.2 | 60.2 | 59.2 ¹ | 40 |
| SAM | 39.9 | 75.3 | 35.4 | 7 |

1. This includes contemporaneous emissions of 38.2 tpy from a previous project.

6.3 Control Technology Review

In the case of a sulfuric acid plant, the objective of the process and the pollution control requirements are compatible. This is to convert SO₂ to SO₃ and recover it as sulfuric acid. Prior to the 1970's most sulfuric acid was produced in a manner similar to the process previously described with the exception of the interpass tower and additional converter or pass. This was characterized by lower conversion efficiency and higher potential emissions.

Where required by environmental regulations, various control technologies were employed to further remove and recover SO₂ from single absorption plants. These typically were ammonia and caustic scrubbing processes. The addition of a second tower to the basic sulfuric acid manufacturing process virtually eliminated the need for add-on controls for control of sulfur dioxide emissions. Since the onset of the dual absorption technology, further improvements in the process have resulted in the possibility of greater conversion efficiency and pollution reduction. Therefore add-on systems which do not result in additional sulfuric acid production remain uncompetitive except where a clear by-product market exists, such as for sodium sulfites by pulp and paper plants.

The second converter and final absorption tower are beyond the economic requirements of the process and serve as the pollution control equipment. At some plants, converters and absorbers following the interpass absorber are termed as "the abatement system." The high efficiency mist eliminators together with proper plant operation serve to minimize SAM emissions. NO_x emissions are inherently low for this process and are marginally significant.

The overall conversion of SO₂ to SO₃ in the sulfuric acid process previously described in Section 3 above is over 99.7 percent. Approximately 90-95 % of acid recovery is effected in the interpass absorber with the remainder accomplished in the second absorber. The residual SO₂ concentration exiting the final tower is somewhere between 200 and 400 parts per million (ppm). This reflects short-term emissions of 2 to 4 pounds of SO₂ per ton of sulfuric acid produced. Similarly, some emissions of sulfuric acid mist occur. Depending on plant conditions and mist eliminator efficiency, emissions of sulfur acid mist are on the order of 0.02 to 0.15 pounds per ton of acid produced.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

6.4 Air Quality Analysis

6.4.1 Introduction

According to the application, the proposed project will increase emissions of three pollutants in excess of PSD significant amounts: SO₂, NO_x and SAM. SO₂ and NO_x are criteria pollutants and have national and state ambient air quality standards (AAQS) and PSD increments defined for them. SAM is a non-criteria pollutant and has no AAQS or PSD increments defined for it; therefore, no air quality impact analysis was required for SAM. Instead, the NSPS requirements will establish the SAM emission limit for this project. The PSD regulations require the following air quality analyses for this project:

- A significant impact analysis for SO₂ and NO_x;
- An analysis of existing air quality for SO₂ and NO_x;
- A PSD increment analysis for SO₂ and NO_x;
- An Ambient Air Quality Standards (AAQS) analysis for SO₂ and NO_x;
- An analysis of impacts on soils, vegetation, and visibility and of growth-related air quality modeling impacts.

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

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

6.4.2 Analysis of Existing Air Quality and Determination of Background Concentrations

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. 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 minimus concentration. In addition, if EPA has not established an acceptable monitoring method for the specific pollutant, monitoring may not be required.

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

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

The table below shows that predicted NO₂ impacts from the project are predicted to be less than the de minimus level; therefore, preconstruction ambient air quality monitoring is not required for this pollutant. Predicted SO₂ impacts are greater than the de minimus level. Therefore, an SO₂ background concentration of 11 ug/m³ for all averaging times was established from existing air quality data for use in the AAQS analysis required for SO₂.

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

| Pollutant | Avg. Time | Max Predicted Impact (ug/m ³) | De Minimus Level(ug/m ³) | Impact Greater Than De Minimus? |
|-----------------|-----------|---|--------------------------------------|---------------------------------|
| NO ₂ | Annual | 0.09 | 14 | NO |
| SO ₂ | 24-hour | 68.7 | 13 | YES |

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

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

Meteorological data used in the ISCST3 model consisted of a 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 and if there are significant impacts from the project on any PSD Class I area, both the highest short-term predicted concentrations and the highest predicted yearly averages were compared to their respective significant impact levels.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

6.4.4 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. Sixteen receptor rings with 10 degree intervals (10-360 degrees) were placed at distances ranging from 0.5 to 18 km from the facility, which is located in a PSD Class II area. In addition receptors were located along the facility's property boundary. Thirteen discrete receptors were set in the Chassahowitzka National Wilderness Area (CNWA) which is a PSD Class I area located approximately 105 km to the northwest of the project at its closest point. For each pollutant subject to PSD and also subject to PSD increment and/or AAQS analyses, this modeling compares maximum predicted impacts due to the project with PSD significant impact levels to determine whether significant impacts due to the project are predicted in the vicinity of the facility or in the CNWA. The tables below show the results of this modeling. There were no significant impacts predicted in the CNWA Class I area. In the vicinity of the facility significant impacts were predicted for all SO₂ averaging times. Therefore, more detailed AAQS and PSD increment analyses were required in the Class II area for SO₂.

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

| Pollutant | Averaging Time | Maximum Predicted Impact (ug/m ³) | Significant Impact Level (ug/m ³) | Significant Impact? | Radius of Significant Impact (km) |
|-----------------|----------------|---|---|---------------------|-----------------------------------|
| SO ₂ | Annual | 2.7 | 1 | YES | 8.0 |
| | 24-hour | 69 | 5 | YES | 8.0 |
| | 3-hour | 193 | 25 | YES | 8.0 |
| NO ₂ | Annual | 0.09 | 1 | NO | 0.0 |

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

| Pollutant | Averaging Time | Maximum Predicted Impact (ug/m ³) | Significant Impact Level (ug/m ³) | Significant Impact? |
|-----------------|----------------|---|---|---------------------|
| SO ₂ | Annual | 0.003 | 0.1 | NO |
| | 24-hour | 0.10 | 0.2 | NO |
| | 3-hour | 0.72 | 1.0 | NO |
| NO ₂ | Annual | 0 | 0.1 | NO |

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

6.4.5 Receptor Networks For PSD Increment And AAQS Analyses

The receptor network submitted by the applicant included a discrete receptor grid placed along the property boundaries and a polar grid out to 8 km from the facility. However, since the applicant's entire property boundary is neither fenced nor inaccessible due to physical barriers, the Department did further SO₂ AAQS and PSD increment modeling within Farmland's property boundaries to determine where fences or physical barriers, if any, should be required on the applicant's property. This modeling showed that there were predicted exceedances of the PSD increment on the applicant's property within 450 m of the origin of the receptor grid presented in the application. Farmland will maintain adequate fencing of the area where these exceedances are predicted.

6.4.5 PSD Class II Increment 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 (the baseline year was 1975 for existing major sources of SO₂) for SO₂ and 1988 for NO₂. As the maximum predicted NO₂ impacts from the proposed project are less than significant, no additional modeling was required. The maximum predicted PSD Class II area SO₂ increment consumed by this project is shown below

PSD Class II Increment Analysis

| Pollutant | Averaging Time | Maximum Predicted Impact (ug/m ³) | Impact Greater Than Allowable Increment? | Allowable Increment (ug/m ³) |
|-----------------|----------------|---|--|--|
| SO ₂ | 24-hour | 56 | NO | 91 |
| | Annual | 0 | NO | 20 |
| | 3-hour | 176 | NO | 512 |

6.4.6 AAQS Analysis

For pollutants subject to an AAQS review, the total impact on ambient air quality is obtained by adding a "background" concentration to the maximum modeled concentration. This "background" concentration takes into account all sources of a particular pollutant that are not explicitly modeled. As the maximum predicted NO₂ impacts from the proposed project are less than significant, no additional modeling was required. The results of the AAQS analysis for SO₂ are summarized in the table below. As shown in this table, emissions from the proposed facility are not expected to cause or significantly contribute to a violation of any AAQS.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Ambient Air Quality Impacts

| Pollutant | Averaging Time | Major Sources Impact (ug/m ³) | Background Conc. (ug/m ³) | Total Impact (ug/m ³) | Florida AAQS (ug/m ³) | Total Impact Greater Than AAQS? |
|-----------------|----------------|---|---------------------------------------|-----------------------------------|-----------------------------------|---------------------------------|
| SO ₂ | 24-hour | 206 | 11 | 217 | 260 | NO |
| | Annual | 45 | 11 | 56 | 60 | NO |
| | 3-hour | 560 | 11 | 571 | 1300 | NO |

6.5 Additional Impacts Analysis

6.5.1 Impact Analysis Impacts On Soils, Vegetation, And Wildlife

The maximum ground-level concentrations predicted to occur from SO₂ and NO_x emissions as a result of the proposed project, including background concentrations and all other nearby sources, will be below the associated AAQS. The AAQS are designed to protect both the public health and welfare. As such, this project is not expected to have a harmful impact on soils and vegetation in the PSD Class II area. An air quality related values (AQRV) analysis was done by the applicant for the Class I area. No significant impacts on this area are expected.

6.5.2 Impact On Visibility

A regional haze analysis was used to assess the potential for a significant increase in regional haze in the Class I CNWA due to this source's projected increase in emissions. A regional haze analysis to determine visibility impacts in the Class I area was required by the National Park Service. The results indicate that the impact of this project on visibility in the Class I area is insignificant.

6.5.3 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 and federal air pollution regulations, provided the Department's BACT determination is implemented.

Syed Arif, P.E.
Cleve Holladay, Meteorologist

PERMITTEE:

Farmland Hydro, L.P.
4390 County Road 640 West
Bartow, Florida 33830

| | |
|------------|------------------|
| File No. | 1050053-019-AC |
| FID No. | 1050053 |
| SIC No. | 2819 |
| Permit No. | PSD-FL-243 |
| Expires: | October 31, 2000 |

Authorized Representative:
C. M. Farris
Vice-President, Operations

PROJECT AND LOCATION:

Permit for the construction of a 2750 tons per day sulfur-burning, double absorption sulfuric acid plant and associated sulfur storage and handling equipment serving a phosphate fertilizer facility located at the above address in Polk County. UTM coordinates are Zone 17; 410.3 km E; 3079.7 km N.

STATEMENT OF BASIS:

This construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). 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).

Appendices and attachments made a part of this permit:

| | |
|--------------|---|
| Table 1 | Air Pollutant Standards and Terms |
| Appendix A | Best Operational Start-up Procedures for Sulfuric Acid Plants |
| Appendix BD | Best Available Control Technology Determination |
| Appendix CSC | Emission Unit(s) Common Specific Conditions |
| Appendix GC | Construction Permit General Conditions |

Howard L. Rhodes, Director
Division of Air Resources
Management

AIR CONSTRUCTION PERMIT 1050053-019-AC

SECTION I. FACILITY INFORMATION

FACILITY DESCRIPTION

The new SAP 6 will consist of a sulfuric acid plant and associated molten sulfur storage and handling equipment. Air pollution control equipment consists of the double absorption process, and high efficiency mist eliminators on the final tower.

EMISSION UNITS

This permit addresses the following emission units:

| EMISSIONS UNIT NO. | SYSTEM | EMISSIONS UNITS DESCRIPTION |
|--------------------|--------------|---|
| 003 | Process | Sulfuric Acid Plant No. 3 |
| 038 | Process | Sulfuric Acid Plant No. 6 |
| 030-036 | Raw Material | Molten Sulfur Storage and Handling System |

REGULATORY CLASSIFICATION

The facility is classified as a "Major or Title V Source" per Rule 62-210.200, F.A.C., Definitions, because emissions of at least one regulated air pollutant exceed 100 tons per year (TPY).

Sulfuric acid plants are listed as a Major Facility Category in Table 62-212.400-1, F.A.C., "Major Facility Categories." Therefore, stack and fugitive emissions of over 100 TPY of sulfur dioxide are sufficient to classify the installation as a "Major Facility" per the definitions in **Rule 62-210.200, F.A.C.**, subject to the Significant Emission Rates for sulfuric acid mist and nitrogen oxides given in Table 62-212.400-2, F.A.C. and the requirements of **Rules 62-212.400 and 410, F.A.C.**, Prevention of Significant Deterioration (PSD) and Best Available Control Technology (BACT).

The molten sulfur storage and handling equipment is subject to **Rule 62-212.600, F.A.C.**. The sulfuric acid plant is also subject to 40 CFR Subpart H, New Source Performance Standards (NSPS) for Sulfuric Acid Plants, incorporated by reference in **Rule 62-204.800, F.A.C.**

PERMIT SCHEDULE:

- 05/XX/98 Notice of Intent published in _____
- 05/19/98 Distributed Intent to Issue Permit
- 04/24/98 Application deemed complete
- 11/20/97 Received Application

RELEVANT DOCUMENTS:

The documents listed below are the basis of the permit. They are specifically related to this permit but do not supersede the conditions given in the permit. These documents are on file with the Department.

- Application received November 20, 1997
- Department's letters dated November 20 and December 18, 1997, February 11 and March 26, 1998
- Comments from the National Park Service dated January 7, 1998
- Applicant's completeness responses dated January 16, March 13, and April 24, 1998
- Department's Intent to Issue package dated May 19, 1998
- Applicant's comments dated _____ on Department's Intent package
- Department's Final Determination accompanying permit

AIR CONSTRUCTION PERMIT 1050053-019-AC

SECTION I. FACILITY INFORMATION

GENERAL AND 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 of Environmental Protection, Southwest District Office, 3804 Coconut Palm Drive, Tampa, Florida 33619-8218 (phone number: 813/744-6100). 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 Blainstone Road, Tallahassee, Florida 32399-2400 (phone number 850/488-1344).
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. Emission Unit(s) Common Specific Conditions: The owner and operator is subject to and shall operate under the attached Emission Unit(s) Common Specific Conditions listed in *Appendix CSC* of this permit. The Emission Unit(s) Common Specific Conditions are binding and enforceable pursuant to Chapters 62-204 through 62-297 of the Florida Administrative Code.
4. Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapters of the Florida Administrative Code.
5. Forms and Application Procedures: The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. **[Rule 62-210.900, F.A.C.]**
6. Expiration: This air construction permit shall expire on October 31, 2000 **[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.]**
7. 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.]**

AIR CONSTRUCTION PERMIT 1050053-019-AC

SECTION I. FACILITY INFORMATION

SPECIFIC CONDITIONS - SULFURIC ACID PLANT AND MOLTEN SULFUR STORAGE AND HANDLING:

The following Specific Conditions apply to the following emission units:

| EMISSIONS UNIT NO. | SYSTEM | EMISSIONS UNITS DESCRIPTION |
|--------------------|--------------|---|
| 003 | Process | Sulfuric Acid Plant No. 3 |
| 038 | Process | Sulfuric Acid Plant No. 6 |
| 030-036 | Raw Material | Molten Sulfur Storage and Handling System |

1. Emissions unit 038 shall comply with all applicable provisions of the 40 CFR 60, Standards of Performance for New Stationary Sources, Subpart H, Sulfuric Acid Plants. [Rule 62-204.800(7)(b)10., F.A.C]
2. Emissions unit 038 shall also comply with all applicable requirements of 40 CFR 60, Standards of Performance for New Stationary Sources, Subpart A, General Provisions. These include:
 - CFR 60.7, Notification and record keeping
 - CFR 60.8, Performance tests
 - CFR 60.11, Compliance with standards and maintenance requirements
 - CFR 60.12, Circumvention
 - CFR 60.13, Monitoring requirements
 - CFR 60.19, General notification and reporting requirements
3. Emissions of sulfur dioxide (SO₂), sulfuric acid mist (SAM), visible emissions (VE), and nitrogen oxides (NO_x) from the sulfuric acid plant shall not exceed the following limits: [Rules 62-204.800(7)(b)10; 62-210.200; 62-212, F.A.C.]

| Pollutant | Pounds per Hour | Tons per Year | Limit Basis |
|-----------------|-----------------|---------------|--|
| SO ₂ | 401.0 | 1757 | 3.5 lb/ton 100% H ₂ SO ₄ produced (BACT) ¹ |
| SAM | 17.2 | 75 | 0.15 lb/ton 100% H ₂ SO ₄ produced (NSPS) ¹ |
| VE | 10% opacity | | NSPS |
| NO _x | 13.8 | 60 | 0.12 lb/ton 100% H ₂ SO ₄ produced (BACT) |

1. Annual EPA Method 8 test is required to demonstrate compliance.
4. The design production capacity of the No. 6 plant shall not exceed 2,750 tons per day (TPD) of 100 percent (%) sulfuric acid. The production rate shall not exceed 2,750 TPD as 100% sulfuric acid on a 24-hour basis. [Rule 62-210.200, F.A.C. (Definitions - Potential Emissions)]
5. The maximum molten sulfur utilization rate for the facility shall neither exceed 2,530 TPD nor 924,000 tons per year. (Based on the maximum permitted sulfuric acid production rate of 7,650 TPD of 100% sulfuric acid for the facility) [Rule 62-210.200, F.A.C. (Definitions - Potential Emissions)]
6. These emissions units are allowed to operate continuously (8760 hours/year) [Rule 62-210.200, F.A.C. (Definitions - Potential Emissions)]
7. The existing No. 3 sulfuric acid plant (Emission Unit No. 003) shall cease operation and be permanently shut down when a new No. 6 sulfuric acid plant commences commercial operations. [Rule 62-210.200, F.A.C. (Definitions - Potential Emissions)]

AIR CONSTRUCTION PERMIT 1050053-019-AC

SECTION I. FACILITY INFORMATION

8. The permittee shall comply with all applicable requirements of the Department's sulfur storage and handling rule. [Rule 62-296.411, F.A.C.]
9. 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.]
10. In order to minimize excess emissions during startup/shutdown/malfunction these emissions units shall adhere to best operational practices. The provisions of the Memorandum of Understanding issued by the Department on November 21, 1989, 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]
11. A continuous emissions monitoring system (CEMS) for the measurement of sulfur dioxide emissions shall be installed, calibrated, operated and maintained in accordance with 40 CFR 60.84 (1996 version)
12. Compliance with the emission limits for SO₂, SAM, and NO_x shall be determined using the following reference methods as described in 40 CFR 60, Appendix A (1996, version), adopted by reference in Chapter 62-204, F.A.C.

| | |
|------------------|--|
| Method 7E | Determination of Nitrogen Oxides from Stationary Sources. |
| Method 8 | Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions from Stationary Sources. (for demonstrating compliance with 40 CFR 60, Subpart H) |
| Method 9 | Visual Determination of the Opacity of Emissions from Stationary Sources. |

These emissions units shall comply with all applicable requirements of Rule 62-297.310, F.A.C. General Test Requirements and 40 CFR 60.8 Performance Tests.

Testing of emissions shall be conducted with the emissions units operating at permitted capacity, which is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then the unit may be tested at less than 90% of the maximum operating rate allowed by the permit; in this case, subsequent source operation is limited to 110% of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than fifteen consecutive days for the purpose of additional compliance testing to regain the permitted capacity in the permit. [Rules 62-204.800, 62-297.310, 62-297.400, 62-297.401, F.A.C., and 40 CFR 60 Appendix A and 40 CFR 60.8, Subpart A].

13. This facility shall maintain a central file containing all measurements, records, and other data that are required to be collected pursuant to this permit. The Department shall be notified in writing at least 15 days prior to compliance testing. Written reports of the compliance tests shall be submitted to the Southwest District Office within 45 days of test completion. [Rule 62-4.070(3), F.A.C.]
14. An application for a Title V permit for the No. 6 sulfuric acid plant shall be submitted to the Department at least 90 days prior to the expiration date of this permit. Any request for the extension of this permit shall be submitted to the Department 60 days prior to permit expiration.
15. This facility shall maintain adequate fencing or physical barriers around the area within 450 meters of the origin of the polar coordinate system used as input in the air dispersion modeling submitted with the permit application.

Table 1 Air Pollutant Standards and Terms.

FACILITY ID NUMBER: 1050053

Permittee:
Farmland Hydro, L.P.

Permit No.: 1050053-019-AC
Sulfuric Acid Plant and Molten Sulfur Handling and Storage

Emission Units - Sulfuric Acid Plant, Molten Sulfur Handling/Storage

| E.U. ID# | Description | Pollutant ID | Fuel(s) [2] | Allowable Emissions [2] | | Equivalent Emissions [3] | Basis |
|----------|------------------------|-----------------|---------------|-------------------------|-----------|--------------------------|-------------|
| | | | | Permit limits | lb/hr [1] | TPY | |
| 38 | Sulfuric Acid Plant | SO ₂ | molten sulfur | 3.5 lb/ton acid | 401 | 1757 | BACT |
| 38 | Sulfuric Acid plant | SAM | molten sulfur | 0.15 lb/ton acid | 17.2 | 75 | NSPS |
| 38 | Sulfuric Acid plant | NOX | molten sulfur | 0.12 lb/ton acid | 13.8 | 60 | Application |
| 38 | Sulfuric Acid plant | VE | molten sulfur | 10 % opacity | | | NSPS |
| 30-36 | Molten Sulfur Handling | VE | | 20 % opacity | | | AC53-169874 |

ALLOWABLE OPERATING RATES

Hours of operation per year 8760
 Molten Sulfur Utilization 2,530 tons per day for the site [4]
 Sulfuric Acid Production 2,750 tons per day for E.U ID# 38 [4]

NOTES

- (1) At a maximum sulfuric acid production rate of 2,750 TPD as 100 percent sulfuric acid.
- (2) Compliance Units. This facility shall demonstrate compliance based on these standards.
- (3) "Equivalent Emissions" are based on annual emissions at 8760 hrs/yr. The "Equivalent Emissions" are also listed for informational purpose and for PSD and recordkeeping tracking purposes.
- [4] Ton = 2000 pounds. Any data reported as Long Tons (1000 kg) must be converted to Tons to determine compliance.

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)

Sulfuric Acid Plant
Farmland Hydro, L.P.
PSD-FL-243 and 1050053-019-AC
Bartow, Polk County

BACKGROUND

The applicant, Farmland Hydro, L.P., proposes to replace the existing 2100 ton per day (TPD) No. 3 sulfuric acid plant (SAP) with a new 2750 TPD No. 6 SAP at the existing facility in Polk County.

The proposed project will result in "significant increases" with respect to Table 62-212.400-2, Florida Administrative Code (F.A.C.) of emissions of sulfur dioxide (SO₂), sulfuric acid mist (SAM), and nitrogen oxides (NO_x). The project is therefore subject to review for the Prevention of Significant Deterioration (PSD) and a determination of Best Available Control Technology (BACT) in accordance with Rule 62-212.400, F.A.C.

Descriptions of the process, project, ambient air quality effects, and rule applicability are given in the separate Technical Evaluation and Preliminary Determination issued with the Department's Intent and Public Notice package.

DATE OF RECEIPT OF A BACT APPLICATION:

The BACT application was received on November 20, 1997.

REVIEW GROUP MEMBERS:

Syed Arif, P.E.

BACT DETERMINATION REQUESTED BY THE APPLICANT:

| <u>POLLUTANT</u> | <u>CONTROL TECHNOLOGY</u> | <u>PROPOSED BACT LIMIT</u> |
|--------------------|---|---|
| Sulfur Dioxide | Double Absorption | 3.5 pounds per ton 100% H ₂ SO ₄ |
| Sulfuric Acid Mist | Fiber Mist Eliminators | 0.15 pounds per ton 100% H ₂ SO ₄ |
| Visibility | As Above and Process Controls | 10 percent |
| Nitrogen Oxides | None - Low Fuel Nitrogen, Combustion Temperature | 0.12 pounds per ton 100% H ₂ SO ₄ |

The applicant has proposed to use the double absorption process and improved process control technology to achieve the proposed limits. These limits will be met by converting SO₂ produced into sulfur trioxide (SO₃), absorbing the SO₃ in circulating streams of sulfuric acid, and minimizing SAM formation and losses by process controls and high efficiency mist eliminators.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

BACT DETERMINATION PROCEDURE:

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

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

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

BACT DETERMINATION BY DEP:

| <u>POLLUTANT</u> | <u>CONTROL TECHNOLOGY</u> | <u>EMISSION LIMIT</u> |
|--------------------|---|---|
| Sulfur Dioxide | Double Absorption | 3.5 lb/ton 100% H ₂ SO ₄ |
| Sulfuric Acid Mist | High Efficiency Mist Eliminators | 0.15 pounds per ton 100% H ₂ SO ₄ |
| Visibility | As Above and Process Controls | 10 percent |
| Nitrogen Oxides | None - Low Fuel Nitrogen, Combustion Temperature | 0.12 lb/ton 100% H ₂ SO ₄ Applicant Estimate |

DETERMINATION RATIONALE:

The BACT determination has been based on the established double absorption technology wherein the production process and the BACT are identical, thus eliminating the need for add-on control equipment. The applicant's BACT proposal for SO₂ is more stringent than the NSPS and previous BACT determinations.

The BACT determination for the permit issued on February 2, 1998 to Piney Point Phosphates, Manatee County serves as a basis for the evaluation of the new plant at Farmland, L.P. In the evaluation of the Piney Point plant, the Department concluded that an SO₂ emission limit of 2.4-3.2 pounds per ton of acid produced was feasible by using cesium-promoted vanadium catalyst in the final pass in place of conventional vanadium catalyst. According to Monsanto Enviro-Chem, the full service vendor, the optimum plant operating conditions for the Farmland project are such that the cesium promoted catalyst will not yield a reduction in SO₂ emissions. This is because the Monsanto cesium-promoted catalyst has an advantage over the non-cesium product only at lower temperatures.

APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

The Department notes that Haldor-Topsoe claims its cesium line has an advantage over its non-cesium line at all typical operating temperatures. However the Haldor-Topsoe product is not an option for this project and the Department recognizes that the applicant has alternatives available to achieve emissions reflective of the Department's BACT determination.

The applicant will achieve the proposed emissions limits by improving the sulfur dioxide conversion of a traditional double absorption plant. The improvement over a traditional plant will be accomplished by an increase in the size of the converter; increase in the catalyst loading; increase in the plant operating pressure to overcome the additional pressure drop; increase in heat exchange capacity to accommodate the increase in heat of reaction; and, increase in the horsepower of the main compressor turbine drive to accommodate the higher discharge pressure. This is considered to be equivalent to BACT for sulfur dioxide. The emission limit of 3.5 pounds per ton of acid averaged over three hours is more stringent than the limit set for the Piney Point Plant where emissions are averaged over 48 hours.

Control options involving production of by-products or wastes have been rejected by Farmland. 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.

COMPLIANCE METHODOLOGY:

Demonstration of compliance with the emissions limits shall be as required by Subpart H. These are EPA Reference Method 8 for SO₂ and SAM. EPA Methods 1, 2, and 3 shall be used to determine stack and flue gas properties. An initial and annual compliance test for NO_x using EPA Method 7E is required to verify the low emission rate projected in the application.

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:

Farmland Hydro, L.P.
2750 TPD Sulfuric Acid Plant

DEP File No. 1050053-019-AC
Permit No. PSD-FL-243

APPENDIX CSC
EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

SUBSECTION 1.0 CONSTRUCTION REQUIREMENTS

- 1.1 Applicable Regulations: Unless otherwise indicated in this permit, the construction and operation of the subject emission unit(s) 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, 62-103, 62-204, 62-210, 62-212, 62-213, 62-296, 62-297; and the applicable requirements of the Code of Federal Regulations Section 40, Part 60, adopted by reference in the Florida Administrative Code regulation [Rule 62-204.800 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 requirements or regulations. [Rule 62-210.300, F.A.C.]

SUBSECTION 2.0 EMISSION LIMITING STANDARDS

- 2.1 General Particulate Emission Limiting Standards. General Visible Emissions Standard: Except for emissions units that are subject to a particulate matter or opacity limit set forth or established by rule and reflected by conditions in this permit, no person shall cause, let, permit, suffer, or allow to be discharged into the atmosphere the emissions of air pollutants from any activity, the density of which is equal to or greater than that designated as Number 1 on the Ringelmann Chart (20% opacity). [Rule 62-296-320(4)(b)1, F.A.C.]
- 2.2 Unconfined Emissions of Particulate Matter [Rule 62-296.320(4)(c), F.A.C.]
- (a) The owner or operators shall not cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any source whatsoever, including, but not limited to, vehicular movement, transportation of materials, construction, alteration, demolition or wrecking, or industrially related activities such as loading, unloading, storing or handling, without taking reasonable precautions to prevent such emission.
- (b) Any permit issued to a facility with emissions of unconfined particulate matter shall specify the reasonable precautions to be taken by that facility to control the emissions of unconfined particulate matter.
- (c) Reasonable precautions include the following:
- Paving and maintenance of roads, parking areas and yards.
 - Application of water or chemicals to control emissions from such activities as demolition of buildings, grading roads, construction, and land clearing.
 - Application of asphalt, water, oil, chemicals or other dust suppressants to unpaved roads, yards, open stock piles and similar activities.
 - Removal of particulate matter from roads and other paved areas under the control of the owner or operator of the facility to prevent reentrainment, and from buildings or work areas to prevent particulate from becoming airborne.

APPENDIX CSC

EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

- Landscaping or planting of vegetation.
- Use of hoods, fans, filters, and similar equipment to contain, capture and/or vent particulate matter.
- Confining abrasive blasting where possible.
- Enclosure or covering of conveyor systems.

NOTE: Facilities that cause frequent, valid complaints may be required by the Permitting Authority to take these or other reasonable precautions. In determining what constitutes reasonable precautions for a particular source, the Department shall consider the cost of the control technique or work practice, the environmental impacts of the technique or practice, and the degree of reduction of emissions expected from a particular technique or practice.

2.3 General Pollutant Emission Limiting Standards: [Rule 62-296.320, F.A.C.]

- (a) The owner or operator shall not store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems.
- (b) No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

NOTE: An objectionable odor is defined as any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [F.A.C. 62-210.200(198)]

SUBSECTION 3.0 OPERATION AND MAINTENANCE

3.1 Changes/Modifications: The owner or operator shall submit to the Permitting Authority(s), for review any changes in, or modifications to: the method of operation; process or pollution control equipment; increase in hours of operation; equipment capacities; or any change which would result in an increase in potential/actual emissions. Depending on the size and scope of the modification, it may be necessary to submit an application for, and obtain, an air construction permit prior to making the desired change. *Routine maintenance of equipment will not constitute a modification of this permit.* [Rule 62-4.030, 62-210.300 and 62-4.070(3), F.A.C.]

3.2 Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the owner or operator shall notify the Permitting Authority as soon as possible, but at least within (1) working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; the steps being taken to correct the problem and prevent future recurrence; and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from

APPENDIX CSC

EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

any liability for failure to comply with the conditions of this permit and the regulations. [Rule 62-4.130, F.A.C.]

3.3 Circumvention: The owner or operator shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rules 62-210.650, F.A.C.]

3.4 Excess Emissions Requirements [Rule 62-210.700, F.A.C.]

- (a) Excess emissions resulting from start-up, shutdown or malfunction of these emissions units 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 Permitting Authority office for longer duration. [Rule 62-210.700(1), F.A.C.]
- (b) Excess emissions that are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during start-up, shutdown, or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]
- (c) In case of excess emissions resulting from malfunctions, the owner or operator shall notify Permitting Authority within one (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the problem; and the corrective actions being taken to prevent recurrence. [Rule 62-210.700(6), F.A.C.]

3.5 Operating Procedures: Operating procedures shall include good operating practices and proper training of all operators and supervisors. The good operating practices shall meet the guidelines and procedures as established by the equipment manufacturers. All operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. [Rule 62-4.070(3), F.A.C.]

SUBSECTION 4.0 MONITORING OF OPERATIONS

4.1 Determination of Process Variables

- (a) The permittee shall operate and maintain equipment and/or instruments necessary to determine process variables, such as process weight input or heat input, when such data is needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
- (b) Equipment and/or instruments used to directly or indirectly determine such process variables, including devices such as belt scales, weigh hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value. [Rule 62-297.310(5), F.A.C.]

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EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

SUBSECTION 5.0 TEST REQUIREMENTS

- 5.1 Test Performance Within 60 days after achieving the maximum production rate at which these emission units will be operated, but not later than 180 days after initial startup and annually thereafter, the owner or operator of this facility shall conduct performance test(s) pursuant to 40 CFR 60.8, Subpart A, General Provisions and 40 CFR 60, Appendix A. No other test method shall be used unless approval from the Department has been received in writing. Unless otherwise stated in the applicable emission limiting standard rule, testing of emissions shall be conducted with the emission unit(s) operating at permitted capacity pursuant to Rule 62-297.310(2), F.A.C. [Rules 62-204.800, 62-297.310, 62-297.400, 62-297.401, F.A.C.]
- 5.2 Test Procedures shall meet all applicable requirements of the Florida Administrative Code Chapter 62-297. [Rule 62-297.310, F.A.C.]
- 5.3 Test Notification: The owner or operator shall notify the Permitting Authority in writing at least (30) days (initial) and 15 days (annual) prior to each scheduled compliance test to allow witnessing. The notification shall include the compliance test date, place of such test, the expected test time, the facility contact person for the test, and the person or company conducting the test. The (30) or (15) day notification requirement may be waived at the discretion of the Department. Likewise, if circumstances prevent testing during the test window specified for the emission unit, the owner or operator may request an alternate test date before the expiration of this window. [Rule 62-297.310 and 40 CFR 60.8, F.A.C.]
- 5.4 Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in Rule 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C. or in a permit issued pursuant to those rules is being violated, it may require the owner or operator of the facility to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions units and to provide a report on the results of said tests to the Permitting Authority. [Rule 62-297.310(7)(b), F.A.C.]
- 5.5 Stack Testing Facilities: The owner or operator shall install stack testing facilities in accordance with Rule 62-297.310(6), F.A.C..
- 5.6 Exceptions and Approval of Alternate Procedures and Requirements: An Alternate Sampling Procedure (ASP) may be requested from the Bureau of Air Monitoring and Mobile Sources of the Florida Department of Environmental Protection in accordance with the procedures specified in Rule 62-297.620, F.A.C.
- 5.7 Operating Rate During Testing: Unless otherwise stated in the applicable emission limiting standard rule, testing of emissions shall be conducted with the emissions unit operation at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impracticable to test at permitted capacity, an emissions unit may be tested at less than the minimum

APPENDIX CSC

EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2) and (3), F.A.C.]

SUBSECTION 6.0 REPORTS AND RECORDS

- 6.1 Duration: All reports and records required by this permit shall be kept for at least (5) years from the date the information was recorded. [Rule 62-4.160(14)(b), F.A.C.]
- 6.2 Emission Compliance Stack Test Reports:
- (a) A *test report* indicating the results of the required compliance tests shall be filed with the Permitting Authority as soon as practical, but no later than 45 days after the last sampling run is completed. [Rule 62-297.310(8), F.A.C.]
 - (b) The *test report* shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in **Rule 62-297.310(8), F.A.C.**
- 6.3 Excess Emissions Report: If excess emissions occur, the owner or operator shall notify the Permitting Authority within (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident. Pursuant to the New Source Performance Standards, excess emissions shall also be reported in accordance with 40 CFR 60.7, Subpart A. [Rules 62-4.130 and 62-210.700(6), F.A.C.]
- 6.4 Annual Operating Report for Air Pollutant Emitting Facility: Before March 1st of each year, the owner or operator shall submit to the Permitting Authority this required report [DEP Form No. 62-210.900(5)], which summarizes operations for the previous calendar year. [Rule 62-210.370(3), F.A.C.]

SUBSECTION 7.0 OTHER REQUIREMENTS

- 7.1 Waste Disposal: The owner or operator shall treat, store, and dispose of all liquid, solid, and hazardous wastes in accordance with all applicable Federal, State, and Local regulations. This air pollution permit does not preclude the permittee from securing any other types of required permits, licenses, or certifications.

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.

Memorandum

Florida Department of Environmental Protection

TO: Clair Fancy, Chief, BAR *arf for CHF 5/19*

THRU: Al Linero, P.E. Administrator, NSRS *Al Linero 5/19*

FROM: Syed Arif, P.E. *Syed Arif 5/14/98*

DATE: May 14, 1998

SUBJECT: Farmland Hydro, L.P.
Green Bay Sulfuric Acid Plant No. 6
DEP File No. 1050053-019-AC; PSD-FL-243

Attached is the Public Notice package for the construction of a new 2750 tons per day (TPD) sulfuric acid plant. The new plant will replace the existing 2100 TPD No. 3 plant which will be permanently shut down. Control of sulfur dioxide (SO₂) emissions is accomplished by the process itself which is based on the conversion SO₂ to SO₃ and subsequent recovery as sulfuric acid product. The second absorption tower improves the efficiency of the process and also serves as the pollution control equipment. The high efficiency mist eliminators together with proper plant operation serves to minimize sulfuric acid mist emissions. The nitrogen oxides emissions will be minimized by good combustion practices.

The BACT for SO₂ was determined to be 3.5 lb/ton on a three hour basis. This is the most stringent BACT determination for any sulfuric acid plant in Florida. The BACT for sulfuric acid mist emissions will still be 0.15 lb/ton which is consistent with other BACT in the state.

I recommend your approval and signature.

SA

Attachments

If your RETURN ADDRESS is completed on the reverse side?

| | | |
|---|--|--|
| SENDER: ■ Complete items 1 and/or 2 for additional services. ■ Complete items 3, 4a, and 4b. ■ Print your name and address on the reverse of this form so that we can return this card to you. ■ Attach this form to the front of the mailpiece, or on the back if space does not permit. ■ Write "Return Receipt Requested" on the mailpiece below the article number. ■ The Return Receipt will show to whom the article was delivered and the date delivered. | | I also wish to receive the following services (for an extra fee): 1. <input type="checkbox"/> Addressee's Address 2. <input type="checkbox"/> Restricted Delivery Consult postmaster for fee. |
| 3. Article Addressed to: Mr. C.M. Farris, VP-Operations Farmland Hydro, LP 4390 County Rd. 640 West Bartow, FL 33830 | | 4a. Article Number P 265 659 350 |
| 5. Received By: (Print Name) Jean Hicks | | 4b. Service Type <input type="checkbox"/> Registered <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise <input checked="" type="checkbox"/> Certified <input type="checkbox"/> Insured <input type="checkbox"/> COD |
| 6. Signature: (Addressee or Agent) <i>[Signature]</i> | | 7. Date of Delivery 5/22/98 |
| 8. Addressee's Address (Only if requested and fee is paid) | | |

Thank you for using Return Receipt Service.

Receipt

P 265 659 350

US Postal Service
Receipt for Certified Mail
 No Insurance Coverage Provided.
 Do not use for International Mail (See reverse)

| | |
|---|----------------|
| Sent to | C.M. Farris |
| Street & Number | Farmland Hydro |
| Post Office, State, & ZIP Code | Bartow, FL |
| Postage | \$ |
| Certified Fee | |
| Special Delivery Fee | |
| Restricted Delivery Fee | |
| Return Receipt Showing to Whom & Date Delivered | |
| Return Receipt Showing to Whom, Date, & Addressee's Address | |
| TOTAL Postage & Fees | \$ |
| Postmark or Date | 5-19-98 |
| 1050053-019-AE | |
| PSO-FL-243 | |

PS Form 3800, April 1995