



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30308

MAY 6 1980

REF: 4AH-AF

Mr. Rudy J. Cabina
Vice-President
Gardinier, Inc.
Post Office Box 3269
Tampa, Florida 33601

RE: Modification to
Phosphate Fertilizer Complex
PSD-FL-026

Dear Mr. Cabina:

EPA Region IV has reviewed your application to modify a phosphate fertilizer complex under the provisions of Prevention of Significant Deterioration Regulations (40 CFR 52.21) and has made a Preliminary Determination of approval with conditions. Please find enclosed two copies of the Preliminary Determination.

A public notice will be run in the near future in the local newspaper, The Tampa Tribune. A copy of the summary and your application will be open to the public review and comment for a period of 30 days. The public can also request a public hearing to review and discuss specific issues. At the end of this period, EPA will evaluate the comments received and make a Final determination regarding the proposed construction.

Should you have questions regarding this information, please contact Mr. Kent Williams of my staff at 404/881-4552 or Mr. Jeffrey L. Shumaker of TRW Inc. at 919/541-9100. TRW is under contract to EPA and its personnel are acting as authorized representatives of the Agency in providing aid to the Region IV PSD program.

Sincerely yours,

Tommie A. Gibbs

Tommie A. Gibbs, Chief
Air Facilities Branch

TAG:JWP:cg

Enclosure

1 RJC 8 1980

PUBLIC NOTICE

PSD-FL-026

Proposed Modification to Air Pollution Source

Gardinier, Inc. proposed to modify their Tampa Chemical Plant in Hillsborough County approximately 8 km south of Tampa at the intersection of U.S. 41 and Riverview Drive. The modification will increase production capacity of P_2O_5 by 120,000 tons per year, sulfuric acid by 370 tons per day and diammonium phosphate by 50 tons per hour. In addition, conversion of process from dry rock to wet rock and shutdown of some existing facilities will accompany the modification.

Proposed construction has been reviewed by the U.S. Environmental Protection Agency (EPA) under Federal Prevention of Significant Deterioration regulations (40 CFR 52.21). EPA has made a preliminary determination of approval with conditions. A summary of the basis for this determination and the permit application submitted by Gardinier, Inc. are available for public review at:

Hillsborough County Environmental Protection Commission
1900 9th Avenue
Tampa, Florida 33605

The total allowable emissions from the proposed construction (tons per year) are:

<u>Particulate</u>	<u>SO₂</u>	<u>Acid Mist</u>	<u>Fluoride</u>
43.8	1322.8	47.9	87.8

Crediting for existing permitted emissions and shut down of existing facilities the net change from the proposed construction for allowable emissions (tons per year) are:

<u>Particulate</u>	<u>SO₂</u>	<u>Acid Mist</u>	<u>Fluoride</u>
-1006.1	-1196.2	-28.1	10

No increment consumption is expected from this modification, since allowable emissions of both particulates and SO_2 will be decreased.

Any person may submit written comments to EPA regarding the proposed modification. All comments, postmarked not later than 30 days from the date of this notice, will be considered by EPA in making a Final Determination regarding approval for construction of this source. These comments will be made available for public review at the above location. Furthermore, a public hearing can be requested by any person. Such requests should be submitted within 15 days of the date of this notice. Letters should be addressed to:

Mr. Tommie A. Gibbs, Chief
Air Facilities Branch
U.S. Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Preliminary Determination

I. Applicant

Gardinier, Inc.
Tampa Chemical Plant
Post Office Box 3269
Tampa, Florida 33601

II. Location

The proposed modification is located approximately 8 km south of the city of Tampa at the intersection of U.S. Highway 41 and Riverview Drive. The UTM coordinates are: Zone 17, 362.9 km East and 3082.5 km North.

III. Project Description

The applicant proposes to modify its existing phosphate processing plant to increase production capacity of P_2O_5 approximately 20 percent (600,000 to 720,000 tons per year). Modification of its existing sulfuric acid plant will increase capacity from 1380 tons/day to 1750 tons/day of sulfuric acid.

Further, the applicant proposes to construct a new 50 ton/hour diammonium phosphate production unit.

In addition, conversion of the process from dry rock to wet rock and shut down of some existing facilities will accompany the modification.

These changes are summarized in Table 1.

IV. Source Impact Analysis

Table 2 summarizes the total potential to emit (uncontrolled) from the proposed modification. The proposed modification has the potential to emit greater than 100 tons per year of particulates (TSP), sulfur dioxide (SO_2), acid mist, and fluorides (F). Therefore, in accordance with the provisions of Title 40 Code of Federal Regulations Part 52.21 (40 CFR 52.21) promulgated June 19, 1978, a Prevention of Significant Deterioration (PSD) review is required for each of these pollutants. Nitrogen oxides (NO_x) and other regulated pollutants are not subject to PSD review because potential emissions increase

TABLE 2
APPLICABILITY SUMMARY

<u>Facility</u>	<u>Potential to Emit (Uncontrolled), Tons/Year</u>				
	<u>TSP</u>	<u>SO₂</u>	<u>Acid Mist</u>	<u>NO_x</u>	<u>Fluoride</u>
A. New	920	161	(a)	28.5	912
B. Modified (After)	(b)	3193(c)	543(d)	(a)	183(e)
C. Modified (Before)	(b)	3119(c)	429(d)	(a)	171(f)
A + B - C (g)	920	235	114	28.5	924

(a) Pollutant not emitted

(b) Fugitive TSP emissions from gypsum piles are not quantified. Modification assumed not to effect a change.

(c) Control is integral part of process. Potential assumed equal to allowable under State permit before modification. Potential after modification is increased proportional to capacity increase.

(d) Based on AP42 Table 5.17.2 as 1.7 pounds of acid mist per ton of 100% H₂SO₄.

(e) Includes 73.8 tons/year from gypsum and cooling pond. Based upon an emission factor of 4.3 pounds of fluoride per acre-day (calculated from literature information for an optimum size cooling pond). Applicant proposed a range of estimates based upon 1.6 (best est.) to 10 (upper limit) pounds per acre-day.

(f) Includes 61.5 tons/year from gypsum and cooling pond. Decreased from (e) proportional to capacity change.

(g) Source is subject to PSD review for the subject pollutant if potential increases by 100 tons/year or more. (No credit for reduction elsewhere.)

by less than 100 tons per year. Full PSD review consists of:

- 1) Control Technology Review
- 2) Air Quality Review
 - a) Impact upon Ambient Air Quality
 - b) Impact upon Increment
 - c) Impact upon soils, visibility and vegetation
 - d) Impact upon class I areas
- 3) Growth Analysis

Table 3 summarizes allowable emissions and the various categories of changes that determine the level of PSD review required under the regulations. Each type of facility and each pollutant is classified.

Line E of Table 3 shows that each pollutant has an increased allowable emissions (without credit for reduction elsewhere at the source) of less than 50 tons per year. With no limits placed upon operating time, 50 tons per year is more restrictive than the additional 100 pounds per hour or 1000 pounds per day criteria. Therefore, consistent with the provisions of 40 CFR 52.21(j) and (k), PSD review is limited to:

- 1) Ensuring compliance with State Implementation Plans (SIP) and Federal Regulations (40 CFR Parts 60 and 61), and
- 2) Impacts upon Class I areas and upon areas of known increment violation.

It should be noted that the application was reviewed under the Partial Stay of PSD Regulation, published February 5, 1980 and the proposed revisions of the PSD regulations referenced in that partial stay. It was determined that the exemption outlined in the partial stay does not apply and that the proposed modification is subject to review under existing PSD regulations because:

- 1) An existing oil fired standby boiler with a rated capacity of 100,000 pounds of steam per hour (=133 million Btu per hour) establishes the existing source as a major stationary source of nitrogen oxides as defined (greater than 100 tons per year potential to emit) in the September 5, 1979 proposed revised PSD regulations, and
- 2) The proposed modification would significantly (greater than 10 tons/year) increase allowable emissions of nitrogen oxides.

The proposed modification therefore is subject to review under the provisions and requirements of the existing PSD regulations (promulgated 6/19/78).

Table 3

ALLOWABLE EMISSIONS, TONS PER YEAR
(No Limits Upon Hours per Year)

Facilities	TSP	SO ₂	Acid Mist	NO _x	Fluoride
A. New or Reconstructed	43.8	43.8	(d)	28.5	10.1
B. Modified (After)	0 ^a	1279	47.9	(d)	77.7 ^b
C. Modified (Before)	321.1 ^a	2519	75.8	(d)	65.4 ^c
D. Increases from Modified	None	None	None	(d)	12.3
E. Increases New and Modified (A + D)	43.8	43.8	None	28.5	22.4
F. Existing (to be shut down)	728.8	(d)	(d)	(d)	12.4
G. Net Change from Proposed Construction (A + B - C - F)	-1006.1	-1196.2	-28.1	28.5	10.0

^aFugitive TSP emissions from gypsum piles are not quantified nor restricted by permit conditions, modification is not expected to cause change.

^bIncludes 73.8 tons/year emitted from gypsum and cooling ponds (see note (e) Table 2).

^cIncludes 61.5 tons/year emitted from gypsum and cooling ponds (see note (f) Table 2).

^dSpecific pollutant not emitted.

A. Control Technology Review

Although these facilities are exempt from a Best Available Control Technology (BACT) review they are required to meet all applicable emission limits and standards of performance under the Florida State Implementation Plan (SIP) and Federal Regulations (40 CFR Parts 60 and 61). Several of the facilities proposed for construction are subject to Federal New Source Performance Standards and/or requirements under the Florida State Implementation Plans. These requirements are referenced in Table 4 which summarizes the allowable emissions limits for the proposed new and modified facilities.

The limitation upon sulfur dioxide emission from No. 5 Ammonium Phosphate Plant was proposed by the applicant and is a condition of this permit to ensure the validity of the exemption from a BACT determination during this PSD review.

To achieve these limits the applicant proposes to use the following controls:

1) No. 5 Ammonium Phosphate Plant

Fluoride emissions are controlled by two stage scrubbers. These scrubbers will also reduce particulate, and ammonia emissions to less than 38 and 8 tons per year, respectively.

Sulfur dioxide emissions from the dryer are controlled by adsorption (70% reduction) onto the materials being dried and by limiting the sulfur content (2% sulfur) of the fuel oil. These assumed values shall be confirmed or adjusted in accordance with tested emission results.

2) Phosphoric Acid Plants

Fluoride emissions are controlled by a packed crossflow scrubber.

3) No. 7 Sulfuric Acid Plant

Sulfur dioxide emissions control will be improved by additional catalyst installed in the existing double absorption converter. Additional mist elimination and a new mist pad are also to be installed to control acid mist (and opacity).

Table 4

Summary of Allowable Emission Limits

Facility Pollutant	Basis for Requirement	Emission Limits Standard	lbs/hr
No. 5 Ammonium Phosphate Plant (23 Tons/hour Maximum Equivalent P_2O_5 Feed)			
Fluorides	NSPS ^c Subpart V and Fla. SIP (AC29-26670)	0.06 ^{a,d}	1.38
Particulates	Fla. SIP (AC29-26670)	0.43 ^a	10
Sulfur dioxides	Proposed by Applicant	0.43 ^a	10
No. 3 Phosphoric Acid Plant (46.5 Tons/hour Maximum Equivalent P_2O_5 Feed)			
Fluorides	Fla. SIP (AC29-21345)	0.02 ^a	0.93
No. 4 Phosphoric Acid Plant (60 Tons/hour Maximum Equivalent P_2O_5 Feed)			
Fluorides	NSPS ^c Subpart T and Fla. SIP (AC29-21343)	0.02 ^{a, e}	1.2
No. 7 Sulfuric Acid Plant (73 Tons/hour Maximum 100% H_2SO_4 Production)			
Sulfur dioxide	Fla. SIP (AC29-21345)	4 ^b	291.7
Acid mist	Fla. SIP (AC29-21345)	0.15 ^b	10.9
Opacity	Fla. SIP (AC29-21345)	<10%	--

^aPounds of pollutant per ton of equivalent P_2O_5 Feed.

^bPounds of pollutant per ton of 100% H_2SO_4 produced.

^cStandards of Performance for New Stationary Sources (40 CFR Part 60).

^dContinuous monitoring of feed rate and scrubber pressure drop.

^eContinuous monitoring of SO_2 .

B. Class I Area Impact

The nearest Class I area is the Chassahowitzka National Wildlife Area located 90 km to the north. The impact upon this area is below significance with the emission of all PSD reviewed pollutants decreasing except the increase of 10 tons per year for fluorides. The majority of this 10 tons will be emitted from the gypsum and cooling pond which is a ground level source. Dispersion over 90 kilometers from a ground level source emitting 10 tons per year clearly will yield only insignificant impacts from this modification on the Class I area.

C. Impact Upon Areas of Known Increment Violation

No areas of known increment violation for TSP for SO_2 are known to be in the vicinity of the proposed modification. A portion of Hillsborough County is designated non-attainment for TSP; however the modification will not adversely impact this area as it results in a net reduction of allowable TSP emissions (1006.1 Tons/year).

V. Conclusions

EPA Region IV proposes a preliminary determination of approval for construction of the modification to the Gardinier, Inc.'s Tampa Chemical Plant proposed in their application dated November 26, 1979 as amended by letter dated February 7, 1980. The conditions set forth in the permit are as follows:

- 1) The modification and the facilities constructed shall be in accordance with the capacities and specifications stated in the application. Specifically included are the operating capacities listed in Table 1 for new and modified facilities.
- 2) Emissions of fluorides from the #5 Ammonium Phosphate plant shall not exceed 1.38 pounds per hour at the maximum allowable operating rate of 23 tons per hour of equivalent P_2O_5 feed. At lesser operating rates the emissions of fluorides shall not exceed 0.05 pounds per ton of equivalent P_2O_5 feed.
- 3) Emissions of particulate from the #5 Ammonium Phosphate plant shall not exceed 10 pounds per hour at the maximum allowable operating rate of 23 tons per hour of equivalent P_2O_5 feed. At lesser operating rates the emission of particulates should not exceed 0.43 pounds per ton of equivalent P_2O_5 feed.

- 4) Emissions of sulfur dioxide from the #5 Ammonium Phosphate plant shall not exceed 10 pounds per hour at the maximum allowable operating rate of 23 tons per hour of equivalent P_2O_5 feed. At lesser operating rates the emission of sulfur dioxide shall not exceed 0.43 pounds per ton of equivalent P_2O_5 feed. The sulfur content of the oil used during compliance testing shall be recorded and the maximum allowable fuel sulfur content shall be calculated based upon the test results and the allowable sulfur dioxide limit above.
- 5) Emissions of fluorides from the No. 3 Phosphoric Acid Plant shall not exceed 0.93 pounds per hour at the maximum allowable operating rate of 46.5 tons per hour of equivalent P_2O_5 feed. At lesser operating rates the emissions of fluorides shall not exceed 0.02 pounds per ton of equivalent P_2O_5 feed.
- 6) Emissions of fluorides from the No. 4 Phosphoric Acid Plant shall not exceed 1.2 pounds per hour at the maximum allowable operating rate of 60 tons per hour of equivalent P_2O_5 feed. At lesser operating rates the emissions of fluorides shall not exceed 0.02 pounds per ton of equivalent P_2O_5 feed.
- 7) Emissions of sulfur dioxide, and acid mist from the No. 7 Sulfuric Acid Plant shall not exceed 291.6 and 10.9 pounds per hour respectively at the maximum allowable operating rate of 72.9 tons per hour of 100% sulfuric acid produced. At lesser operating rates the emissions of sulfur dioxide and acid mist shall not exceed 4 and 0.15 pounds respectively per ton of 100% sulfuric acid produced.
- 8) Visible emissions from No. 7 Sulfuric Acid Plant shall be less than 10% opacity as measured by EPA standard method 9.
- 9) The mass flow rate of daily equivalent P_2O_5 feed and the total pressure drop across the scrubbing systems shall be monitored for the No. 5 Diammonium Phosphate Plant, and No. 3 and 4 Phosphoric Acid Plants in accordance with the provisions of 40 CFR 60 subparts V and T (Standards of Performance for Phosphate Fertilizer Industry), respectively.

- 10) Sulfur dioxide emissions of the No. 7 Sulfuric Acid Plant shall be continuously monitored to show compliance with condition 7.
- 11) The No. 5 Ammonium Phosphate Plant and the No. 4 Phosphoric Acid Plant shall comply with all specific provisions of the NSPS subparts cited (Table 4) and also all applicable general provisions of that regulation set forth in 40 CFR 60 subpart A.
- 12) Compliance with all emissions limits shall be determined by performance tests. Performance tests shall be conducted in accordance with the provisions of 40 CFR 60.8 and as such shall use appropriate EPA standard methods outlined in 40 CFR 60 Appendix A. The processes shall operate within 10 percent of maximum capacity during sampling.
- 13) As the new facilities are started up for test or continued operation the total emission for the total source shall be controlled by shutdown or reductions in process rates, such that present permitted or ultimate allowable limits are not exceeded.
- 14) All facilities planned for shutdown (in accordance with the application and listed in Table 1) shall cease operation as soon as feasible. Final shutdown of these facilities shall be completed within 90 days of startup of individual replacement facilities. Shutdown of these facilities shall be verified by voiding or deletion from appropriate Florida State permits. Notification of such compliance shall be made to EPA Region IV.
- 15) The source will comply with the requirements of the attached General Conditions.

GENERAL CONDITIONS

1. The permittee shall notify the permitting authority in writing of the beginning of construction of the permitted source within 30 days of such action and the estimated date of start-up of operation.
2. The permittee shall notify the permitting authority in writing of the actual start-up of the permitted source within 30 days of such action and the estimated date of demonstration of compliance as required in the specific conditions.
3. Each emission point for which an emission test method is established in this permit shall be tested in order to determine compliance with the emission limitations contained herein within sixty (60) days of achieving the maximum production rate, but in no event later than 180 days after initial start-up of the permitted source. The permittee shall notify the permitting authority of the scheduled date of compliance testing at least thirty (30) days in advance of such test. Compliance test results shall be submitted to the permitting authority within forty-five (45) days after the complete testing. The permittee shall provide (1) sampling ports adequate for test methods applicable to such facility, (2) safe sampling platforms, (3) safe access to sampling platforms, and (4) utilities for sampling and testing equipment.
4. The permittee shall retain records of all information resulting from monitoring activities and information indicating operating parameters as specified in the specific conditions of this permit for a minimum of two (2) years from the date of recording.
5. If, for any reason, the permittee does not comply with or will not be able to comply with the emission limitations specified in this permit, the permittee shall provide the permitting authority with the following information in writing within five (5) days of such conditions:
 - (a) description of noncomplying emission(s),
 - (b) cause of noncompliance,
 - (c) anticipated time the noncompliance is expected to continue or, if corrected, the duration of the period of noncompliance,
 - (d) steps taken by the permittee to reduce and eliminate the noncomplying emission,and
 - (e) steps taken by the permittee to prevent recurrence of the noncomplying emission.

Failure to provide the above information when appropriate shall constitute a violation of the terms and conditions of this permit. Submittal of this report does not constitute a waiver of the emission limitations contained within this permit.

6. Any change in the information submitted in the application regarding facility emissions or changes in the quantity or quality of materials processed that will result in new or increased emissions must be reported to the permitting authority. If appropriate, modifications to the permit may then be made by the permitting authority to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause violation of the emission limitations specified herein.
7. In the event of any change in control or ownership of the source described in the permit, the permittee shall notify the succeeding owner of the existence of this permit by letter and forward a copy of such letter to the permitting authority.
8. The permittee shall allow representatives of the State environmental control agency or representatives of the Environmental Protection Agency, upon the presentation of credentials:
 - (a) to enter upon the permittee's premises, or other premises under the control of the permittee, where an air pollutant source is located or in which any records are required to be kept under the terms and conditions of the permit;
 - (b) to have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit, or the Act;
 - (c) to inspect at reasonable times any monitoring equipment or monitoring method required in this permit;
 - (d) to sample at reasonable times any emission of pollutants;and
 - (e) to perform at reasonable times an operation and maintenance inspection of the permitted source.
9. All correspondence required to be submitted by this permit to the permitting agency shall be mailed to the:

Chief, Air Facilities Branch
Air and Hazardous Materials Division
U.S. Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, Georgia 30308
10. The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

The emission of any pollutant more frequently or at a level in excess of that authorized by this permit shall constitute a violation of the terms and conditions of this permit.

Preliminary Determination

I. Applicant

Gardinier, Inc.
Tampa Chemical Plant
Post Office Box 3269
Tampa, Florida 33601

II. Location

The proposed modification is located approximately 8 km south of the city of Tampa at the intersection of U.S. Highway 41 and Riverview Drive. The UTM coordinates are: Zone 17, 362.9 km East and 3082.5 km North.

III. Project Description

The applicant proposes to modify its existing phosphate processing plant to increase production capacity of P_2O_5 approximately 20 percent (600,000 to 720,000 tons per year). Modification of its existing sulfuric acid plant will increase capacity from 1380 tons/day to 1750 tons/day of sulfuric acid.

Further, the applicant proposes to construct a new 50 ton/hour diammonium phosphate production unit.

In addition, conversion of the process from dry rock to wet rock and shut down of some existing facilities will accompany the modification.

These changes are summarized in Table 1.

IV. Source Impact Analysis

Table 2 summarizes the total potential to emit (uncontrolled) from the proposed modification. The proposed modification has the potential to emit greater than 100 tons per year of particulates (TSP), sulfur dioxide (SO_2), acid mist, and fluorides (F). Therefore, in accordance with the provisions of Title 40 Code of Federal Regulations Part 52.21 (40 CFR 52.21) promulgated June 19, 1978, a Prevention of Significant Deterioration (PSD) review is required for each of these pollutants. Nitrogen oxides (NO_x) and other regulated pollutants are not subject to PSD review because potential emissions increase

TABLE 1
PROJECT DESCRIPTION
SUMMARY

Facility	Operating Capacity Pounds/Hour
A. New or Reconstructed	
1. No. 4 Phosphoric Acid Plant	120,000 ^a
2. No. 5 Ammonium Phosphate Plant	46,000 ^a
3. New Wet Rock Mill	
B. Modified (After)	
1. No. 3 Phosphoric Acid Plant	93,000 ^a
2. No. 7 Sulfuric Acid Plant	145,833 ^b
3. No. 10 Wet Rock Mill	
4. No. 11 Wet Rock Mill	
5. No. 12 Wet Rock Mill	
6. Gypsum and Cooling Pond	94 acres
C. Modified (Before)	
1. No. 3 Phosphoric Acid Plant	93,000 ^a
2. No. 7 Sulfuric Acid Plant	115,000 ^b
3. No. 10 Dry Rock Mill	87,150 ^c
4. No. 11 Dry Rock Mill	73,000 ^c
5. No. 12 Dry Rock Mill	114,800 ^c
6. Gypsum and Cooling Pond	94 acres
D. Existing (To Be Shut Down)	
1. No. 6, 7, 8 Rock Mill	261,450 ^c
2. 68 PBL Rock Unloading and Storage	568,000 ^c
3. Rock Transfer Airslider	
a. South No. 2	27,420 ^c
b. North No. 2	27,420 ^c
c. South No. 3	9,860 ^c
d. Center No. 3	9,860 ^c
e. North No. 3	9,860 ^c
f. No. 3 Bin	9,860 ^c
4. Normal Superphosphate Plant	30,400 ^c
5. No. 2 Phosphoric Acid Plant	68,421 ^a
6. No. 2 Filter Building	
7. No. 3 Filter Building	

^a Equivalent P_2O_5 feed.

^b 100% H_2SO_4 Product.

^c Input Process Weight.

TABLE 2
APPLICABILITY SUMMARY

<u>Facility</u>	<u>Potential to Emit (Uncontrolled), Tons/Year</u>				
	<u>TSP</u>	<u>SO₂</u>	<u>Acid Mist</u>	<u>NO_x</u>	<u>Fluoride</u>
A. New	920	161	(a)	28.5	912
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(a) Pollutant not emitted

(b) Fugitive TSP emissions from gypsum piles are not quantified. Modification assumed not to effect a change.

(c) Control is integral part of process. Potential assumed equal to allowable under State permit before modification. Potential after modification is increased proportional to capacity increase.

(d) Based on AP42 Table 5.17.2 as 1.7 pounds of acid mist per ton of 100% H₂SO₄.

(e) Includes 73.8 tons/year from gypsum and cooling pond. Based upon an emission factor of 4.3 pounds of fluoride per acre-day (calculated from literature information for an optimum size cooling pond). Applicant proposed a range of estimates based upon 1.6 (best est.) to 10 (upper limit) pounds per acre-day.

(f) Includes 61.5 tons/year from gypsum and cooling pond. Decreased from (e) proportional to capacity change.

(g) Source is subject to PSD review for the subject pollutant if potential increases by 100 tons/year or more. (No credit for reduction elsewhere.)

by less than 100 tons per year. Full PSD review consists of:

- 1) Control Technology Review
- 2) Air Quality Review
 - a) Impact upon Ambient Air Quality
 - b) Impact upon Increment
 - c) Impact upon soils, visibility and vegetation
 - d) Impact upon class I areas
- 3) Growth Analysis.

Table 3 summarizes allowable emissions and the various categories of changes that determine the level of PSD review required under the regulations. Each type of facility and each pollutant is classified.

Line E of Table 3 shows that each pollutant has an increased allowable emissions (without credit for reduction elsewhere at the source) of less than 50 tons per year. With no limits placed upon operating time, 50 tons per year is more restrictive than the additional 100 pounds per hour or 1000 pounds per day criteria. Therefore, consistent with the provisions of 40 CFR 52.21(j) and (k), PSD review is limited to:

- 1) Ensuring compliance with State Implementation Plans (SIP) and Federal Regulations (40 CFR Parts 60 and 61), and
- 2) Impacts upon Class I areas and upon areas of known increment violation.

It should be noted that the application was reviewed under the Partial Stay of PSD Regulation, published February 5, 1980 and the proposed revisions of the PSD regulations referenced in that partial stay. It was determined that the exemption outlined in the partial stay does not apply and that the proposed modification is subject to review under existing PSD regulations because:

- 1) An existing oil fired standby boiler with a rated capacity of 100,000 pounds of steam per hour (=133 million Btu per hour) establishes the existing source as a major stationary source of nitrogen oxides as defined (greater than 100 tons per year potential to emit) in the September 5, 1979 proposed revised PSD regulations, and
- 2) The proposed modification would significantly (greater than 10 tons/year) increase allowable emissions of nitrogen oxides.

The proposed modification therefore is subject to review under the provisions and requirements of the existing PSD regulations (promulgated 6/19/78).

Table 3

ALLOWABLE EMISSIONS, TONS PER YEAR
(No Limits Upon Hours per Year)

Facilities	TSP	SO ₂	Acid Mist	NO _x	Fluoride
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C. Modified (Before)	321.1 ^a	2519	75.8	(d)	65.4 ^c
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F. Existing (to be shut down)	728.8	(d)	(d)	(d)	12.4
G. Net Change from Proposed Construction (A + B - C - F)	-1006.1	-1196.2	-28.1	28.5	10.0

^aFugitive TSP emissions from gypsum piles are not quantified nor restricted by permit conditions, modification is not expected to cause change.

^bIncludes 73.8 tons/year emitted from gypsum and cooling ponds (see note (e) Table 2).

^cIncludes 61.5 tons/year emitted from gypsum and cooling ponds (see note (f) Table 2).

^dSpecific pollutant not emitted.

A. Control Technology Review

Although these facilities are exempt from a Best Available Control Technology (BACT) review they are required to meet all applicable emission limits and standards of performance under the Florida State Implementation Plan (SIP) and Federal Regulations (40 CFR Parts 60 and 61). Several of the facilities proposed for construction are subject to Federal New Source Performance Standards and/or requirements under the Florida State Implementation Plans. These requirements are referenced in Table 4 which summarizes the allowable emissions limits for the proposed new and modified facilities.

The limitation upon sulfur dioxide emission from No. 5 Ammonium Phosphate Plant was proposed by the applicant and is a condition of this permit to ensure the validity of the exemption from a BACT determination during this PSD review.

To achieve these limits the applicant proposes to use the following controls:

1) No. 5 Ammonium Phosphate Plant

Fluoride emissions are controlled by two stage scrubbers. These scrubbers will also reduce particulate, and ammonia emissions to less than 38 and 8 tons per year, respectively.

Sulfur dioxide emissions from the dryer are controlled by adsorption (70% reduction) onto the materials being dried and by limiting the sulfur content (2% sulfur) of the fuel oil. These assumed values shall be confirmed or adjusted in accordance with tested emission results.

2) Phosphoric Acid Plants

Fluoride emissions are controlled by a packed crossflow scrubber.

3) No. 7 Sulfuric Acid Plant

Sulfur dioxide emissions control will be improved by additional catalyst installed in the existing double absorption converter. Additional mist elimination and a new mist pad are also to be installed to control acid mist (and opacity).

Table 4

Summary of Allowable Emission Limits

Facility Pollutant	Basis for Requirement	Emission Limits Standard	lbs/hr
No. 5 Ammonium Phosphate Plant (23 Tons/hour Maximum Equivalent P_2O_5 Feed)			
Fluorides	NSPS ^c Subpart V and Fla. SIP (AC29-26670)	0.06 ^{a,d}	1.38
Particulates	Fla. SIP (AC29-26670)	0.43 ^a	10
Sulfur dioxides	Proposed by Applicant	0.43 ^a	10
No. 3 Phosphoric Acid Plant (46.5 Tons/hour Maximum Equivalent P_2O_5 Feed)			
Fluorides	Fla. SIP (AC29-21345)	0.02 ^a	0.93
No. 4 Phosphoric Acid Plant (60 Tons/hour Maximum Equivalent P_2O_5 Feed)			
Fluorides	NSPS ^c Subpart T and Fla. SIP (AC29-21343)	0.02 ^{a, e}	1.2
No. 7 Sulfuric Acid Plant (73 Tons/hour Maximum 100% H_2SO_4 Production)			
Sulfur dioxide	Fla. SIP (AC29-21345)	4 ^b	291.7
Acid mist	Fla. SIP (AC29-21345)	0.15 ^b	10.9
Opacity	Fla. SIP (AC29-21345)	<10%	--

^aPounds of pollutant per ton of equivalent P_2O_5 Feed.

^bPounds of pollutant per ton of 100% H_2SO_4 produced.

^cStandards of Performance for New Stationary Sources (40 CFR Part 60).

^dContinuous monitoring of feed rate and scrubber pressure drop.

^eContinuous monitoring of SO_2 .

B. Class I Area Impact

The nearest Class I area is the Chassahowitzka National Wildlife Area located 90 km to the north. The impact upon this area is below significance with the emission of all PSD reviewed pollutants decreasing except the increase of 10 tons per year for fluorides. The majority of of this 10 tons will be emitted from the gypsum and cooling pond which is a ground level source. Dispersion over 90 kilometers from a ground level source emitting 10 tons per year clearly will yield only insignificant impacts from this modification on the Class I area.

C. Impact Upon Areas of Known Increment Violation

No areas of known increment violation for TSP for SO₂ are known to be in the vicinity of the proposed modification. A portion of Hillsborough County is designated non-attainment for TSP; however the modification will not adversely impact this area as it results in a net reduction of allowable TSP emissions (1006.1 Tons/year).

V. Conclusions

EPA Region IV proposes a preliminary determination of approval for construction of the modification to the Gardinier, Inc.'s Tampa Chemical Plant proposed in their application dated November 26, 1979 as amended by letter dated February 7, 1980. The conditions set forth in the permit are as follows:

- 1) The modification and the facilities constructed shall be in accordance with the capacities and specifications stated in the application. Specifically included are the operating capacities listed in Table 1 for new and modified facilities.
- 2) Emissions of fluorides from the #5 Ammonium Phosphate plant shall not exceed 1.38 pounds per hour at the maximum allowable operating rate of 23 tons per hour of equivalent P₂O₅ feed. At lesser operating rates the emissions of fluorides shall not exceed 0.06 pounds per ton of equivalent P₂O₅ feed.
- 3) Emissions of particulate from the #5 Ammonium Phosphate plant shall not exceed 10 pounds per hour at the maximum allowable operating rate of 23 tons per hour of equivalent P₂O₅ feed. At lesser operating rates the emission of particulates should not exceed 0.43 pounds per ton of equivalent P₂O₅ feed.

- 4) Emissions of sulfur dioxide from the #5 Ammonium Phosphate plant shall not exceed 10 pounds per hour at the maximum allowable operating rate of 23 tons per hour of equivalent P_2O_5 feed. At lesser operating rates the emission of sulfur dioxide shall not exceed 0.43 pounds per ton of equivalent P_2O_5 feed. The sulfur content of the oil used during compliance testing shall be recorded and the maximum allowable fuel sulfur content shall be calculated based upon the test results and the allowable sulfur dioxide limit above.
- 5) Emissions of fluorides from the No. 3 Phosphoric Acid Plant shall not exceed 0.93 pounds per hour at the maximum allowable operating rate of 46.5 tons per hour of equivalent P_2O_5 feed. At lesser operating rates the emissions of fluorides shall not exceed 0.02 pounds per ton of equivalent P_2O_5 feed.
- 6) Emissions of fluorides from the No. 4 Phosphoric Acid Plant shall not exceed 1.2 pounds per hour at the maximum allowable operating rate of 60 tons per hour of equivalent P_2O_5 feed. At lesser operating rates the emissions of fluorides shall not exceed 0.02 pounds per ton of equivalent P_2O_5 feed.
- 7) Emissions of sulfur dioxide, and acid mist from the No. 7 Sulfuric Acid Plant shall not exceed 291.6 and 10.9 pounds per hour respectively at the maximum allowable operating rate of 72.9 tons per hour of 100% sulfuric acid produced. At lesser operating rates the emissions of sulfur dioxide and acid mist shall not exceed 4 and 0.15 pounds respectively per ton of 100% sulfuric acid produced.
- 8) Visible emissions from No. 7 Sulfuric Acid Plant shall be less than 10% opacity as measured by EPA standard method 9.
- 9) The mass flow rate of daily equivalent P_2O_5 feed and the total pressure drop across the scrubbing systems shall be monitored for the No. 5 Diammonium Phosphate Plant, and No. 3 and 4 Phosphoric Acid Plants in accordance with the provisions of 40 CFR 60 subparts V and T (Standards of Performance for Phosphate Fertilizer Industry), respectively.

- 10) Sulfur dioxide emissions of the No. 7 Sulfuric Acid Plant shall be continuously monitored to show compliance with condition 7.
- 11) The No. 5 Ammonium Phosphate Plant and the No. 4 Phosphoric Acid Plant shall comply with all specific provisions of the NSPS subparts cited (Table 4) and also all applicable general provisions of that regulation set forth in 40 CFR 60 subpart A.
- 12) Compliance with all emissions limits shall be determined by performance tests. Performance tests shall be conducted in accordance with the provisions of 40 CFR 60.8 and as such shall use appropriate EPA standard methods outlined in 40 CFR 60 Appendix A. The processes shall operate within 10 percent of maximum capacity during sampling.
- 13) As the new facilities are started up for test or continued operation the total emission for the total source shall be controlled by shutdown or reductions in process rates, such that present permitted or ultimate allowable limits are not exceeded.
- 14) All facilities planned for shutdown (in accordance with the application and listed in Table 1), shall cease operation as soon as feasible. Final shutdown of these facilities shall be completed within 90 days of startup of individual replacement facilities. Shutdown of these facilities shall be verified by voiding or deletion from appropriate Florida State permits. Notification of such compliance shall be made to EPA Region IV.
- 15) The source will comply with the requirements of the attached General Conditions.

GENERAL CONDITIONS

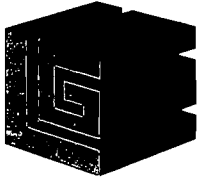
1. The permittee shall notify the permitting authority in writing of the beginning of construction of the permitted source within 30 days of such action and the estimated date of start-up of operation.
2. The permittee shall notify the permitting authority in writing of the actual start-up of the permitted source within 30 days of such action and the estimated date of demonstration of compliance as required in the specific conditions.
3. Each emission point for which an emission test method is established in this permit shall be tested in order to determine compliance with the emission limitations contained herein within sixty (60) days of achieving the maximum production rate, but in no event later than 180 days after initial start-up of the permitted source. The permittee shall notify the permitting authority of the scheduled date of compliance testing at least thirty (30) days in advance of such test. Compliance test results shall be submitted to the permitting authority within forty-five (45) days after the complete testing. The permittee shall provide (1) sampling ports adequate for test methods applicable to such facility, (2) safe sampling platforms, (3) safe access to sampling platforms, and (4) utilities for sampling and testing equipment.
4. The permittee shall retain records of all information resulting from monitoring activities and information indicating operating parameters as specified in the specific conditions of this permit for a minimum of two (2) years from the date of recording.
5. If, for any reason, the permittee does not comply with or will not be able to comply with the emission limitations specified in this permit, the permittee shall provide the permitting authority with the following information in writing within five (5) days of such conditions:
 - (a) description of noncomplying emission(s),
 - (b) cause of noncompliance,
 - (c) anticipated time the noncompliance is expected to continue or, if corrected, the duration of the period of noncompliance,
 - (d) steps taken by the permittee to reduce and eliminate the noncomplying emission,and
 - (e) steps taken by the permittee to prevent recurrence of the noncomplying emission.

Failure to provide the above information when appropriate shall constitute a violation of the terms and conditions of this permit. Submittal of this report does not constitute a waiver of the emission limitations contained within this permit.

6. Any change in the information submitted in the application regarding facility emissions or changes in the quantity or quality of materials processed that will result in new or increased emissions must be reported to the permitting authority. If appropriate, modifications to the permit may then be made by the permitting authority to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause violation of the emission limitations specified herein.
7. In the event of any change in control or ownership of the source described in the permit, the permittee shall notify the succeeding owner of the existence of this permit by letter and forward a copy of such letter to the permitting authority.
8. The permittee shall allow representatives of the State environmental control agency or representatives of the Environmental Protection Agency, upon the presentation of credentials:
 - (a) to enter upon the permittee's premises, or other premises under the control of the permittee, where an air pollutant source is located or in which any records are required to be kept under the terms and conditions of the permit;
 - (b) to have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit, or the Act;
 - (c) to inspect at reasonable times any monitoring equipment or monitoring method required in this permit;
 - (d) to sample at reasonable times any emission of pollutants;and
 - (e) to perform at reasonable times an operation and maintenance inspection of the permitted source.
9. All correspondence required to be submitted by this permit to the permitting agency shall be mailed to the:

Chief, Air Facilities Branch
Air and Hazardous Materials Division
U.S. Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, Georgia 30308
10. The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

The emission of any pollutant more frequently or at a level in excess of that authorized by this permit shall constitute a violation of the terms and conditions of this permit.



GARDINIER INC.

Post Office Box 3269 • Tampa, Florida 33601 • Telephone 813-677-9111 • TWX 810-876-0648 • Telex-52666 • Cable-Gardinphos

June 23, 1983

Mr. Clair Fancy
Deputy Chief, Air Quality Management
Florida Dept. of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

DER
JUN 27 1983
BAQM

Re: Gardinier Request for Permit Modification of No. 7 Contact Sulfuric Acid Plant

Dear Mr. Fancy:

As discussed with Bill Thomas, Larry George, and Willard Hanks, June 14, 1983, I am presenting the reasons I feel Gardinier should be allowed to increase the production and resultant emission increases for the No. 7 Sulfuric Acid Plant.

In 1980 Gardinier received a PSD permit (PSD-FL-026) from the EPA to make several changes in the phosphate processing complex in Tampa. One of these changes was to the No. 7 Sulfuric Acid Plant. Gardinier requested and received from the EPA and the DER permission to modify the No. 7 Sulfuric Acid Plant to increase production to 1750 tons H_2SO_4 /day and accepted new source standards of 4 lbs. SO_2 /ton H_2SO_4 or 7000 lbs. SO_2 and the 0.15 lbs. sulfuric acid mist/ton H_2SO_4 .

Since that time, Gardinier has increased production at times but stayed under the 7000 lbs. SO_2 and appropriate mist. At present the production of all phosphate materials is reduced and we have one of our phosphoric acid units down. However, if demand returns for next spring, we anticipate the need for increased sulfuric acid production and would like to increase the capabilities of the No. 7 Sulfuric Acid Plant to 2200 tons/day. This could be accomplished by modifying the drying tower acid drain system, the second catalyst mass performance and the final absorbing tower cooling system. This would mean an increase of permitted SO_2 emissions from 7000 lbs./day to 8800 lbs./day or nearly a 382 ton/year increase. The 1980 PSD permit for the entire plant (see attached permit, Table 3) shows allowable emissions of 1196 tons net decrease in SO_2 . While this was "allowable" it was a decrease at the time, and Gardinier could have requested and received the production and emissions limits now desired.

Gardinier has always and will continue to operate the plant as efficiently as possible. It is possible that the increase in production could be accomplished

6/23/83

without exceeding the 7000 lbs. SO₂/day capacity; however, to avoid the possibility of being in violation it is requested that the permits be modified to allow the increase previously mentioned.

This is not a formal request for permit modification. This would follow if all parties agree. Otherwise, it will be necessary to go through the full PSD review, which is both costly and time-consuming.

Please advise as to what procedure Gardinier should take.

Very truly yours,

GARDINIER, INC.



A. E. Morrison
Manager, Environmental Services

AEM:db
Enclosure

x/c: Mr. R. J. Cabina) w/o enclosure
Mr. R. Rhodes)