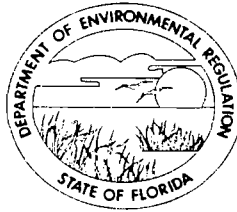


STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

MEMORANDUM

TO: Mr. David S. Sharp, W. R. Grace and Company
Mr. M. J. Martinasek, W. R. Grace and Company
Mr. Dan Williams, DER Southwest District

FROM: C. H. Fancy, Deputy Chief, Bureau of Air
Quality Management *CHF*

DATE: September 17, 1982

SUBJ: W. R. Grace and Company, Polk County
Modification of Condition to Permit No. AC 53-24460

Attached is one copy of the draft revised Final Determination, proposed permit revision and applicant's request for W. R. Grace and Company to eliminate the requirement that two existing GTSP plants cease operation as a condition to constructing the new DAP plant.

Please submit any comments which you wish to have considered concerning this action, in writing, to Bill Thomas of the Bureau of Air Quality Management.

CHF/bjm

Attachment

NOTICE OF PROPOSED AGENCY ACTION

The Department of Environmental Regulation gives notice of its intent to revise permit AC 53-24460, dated July 3, 1980 that was issued to W. R. Grace and Company for the construction of an 800,000 TPY DAP plant at their chemical complex in Polk County near Mulberry, Florida. The revision will eliminate the requirement that two existing GTSP plants cease operation as a condition to constructing the new DAP plant.

A person who is substantially affected by the Department's proposed permit revision may request a hearing in accordance with Section 120.57, Florida Statutes, and Chapter 17-2 and 28-5, Florida Administrative Code. The request for the hearing must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32301, within 14 days of publication of this notice. Failure to file a request for hearing within this time period shall constitute a waiver of any right such person may have to request a hearing under Section 120.57, Florida Statutes.

The Company's request and proposed permit revision are available for public inspection during normal state business hours, 8:00 am to 5:00 pm, Monday through Friday, except on legal holidays at:

Department of Environmental Regulation
7601 Highway 301 North
Tampa, Florida 33610

Final Determination Revision

DRAFT

W. R. Grace and Company

Polk County, Florida

No. 3 Diammonium Phosphate Plant

Construction Permit

AC 53-24460

Florida Department of Environmental Regulation

Bureau of Air Quality Management

Central Air Permitting

September 13, 1982

DRAFT

Revised Final Determination

I. History

The Department of Environmental Regulation received an application for permit to construct a 800,000 TPY diammonium phosphate (DAP) plant from W. R. Grace and Company at their Polk County Chemical Complex on October 9, 1979. Construction permit number AC 53-24460 dated July 3, 1980 was issued for the new No. 3 DAP plant. The applicant stated the new No. 3 DAP plant would replace two existing granular triple superphosphate (GTSP) plants, 300-X and 300-Y. Because of this statement specific condition 14 was included in the permit for the new DAP plant. This condition was:

14. The fertilizer plant 300-X (AO 53-25191) will be shut down before No. 3 DAP plant starts up. Fertilizer plant 300-Y (AO 53-13210) will cease operation within 6 months after the No. 3 DAP plant start-up. Operation permits will be returned to DER within 10 days of the shut down of each plant.

Their expansion plans included converting an existing DAP plant to GTSP (AC 53-42443). Shutting down 300-X and 300-Y GTSP plants was contingent on converting the existing DAP plant.

II. Company Request

On July 21, 1982 the Company requested that specific condition 14, requiring 300-X and 300-Y GTSP plants be shut down when No. 3 DAP plant begins operation, be voided because unfavorable economic conditions have caused the company to change its expansion and operation plans. The Company wants to continue to operate the two GTSP plants and has canceled other plant modifications (conversion of an existing DAP plant to GTSP) at this complex that were part of their expansion plan.

III. Department Recommendation

The Department proposed to revise specific condition 14 in permit AC 53-24460 that requires the two GTSP plants be shut down. The revised condition will be as follows.

14. Fertilizer plants 300-X (AO53-25191) and 300-Y (AO 53-13210) can continue to operate as long as the plants are in compliance with all state and federal regulations and permit conditions.

DRAFT

IV. Justification

The revised specific Condition 14 will allow W. R. Grace and Company to operate the two existing GTSP plants after the new No. 3 DAP plant begins production. The revised specific condition 14 will require the GTSP plants to be in compliance with all applicable air pollution regulations and specific conditions in existing permits for these sources.

Studies on the effect of emission from the new and existing air pollution sources at this plant on the ambient air quality in the vicinity of the complex shows there would be no violation of the standards in the regulations. These studies included the emissions from 300-X and 300-Y GTSP plants. Thus, the emissions from the two GTSP plants will not cause a violation of any state or federal regulations and the Department does not have a legal basis to prohibit the operation of these two plants.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

September 14, 1982

DRAFT

Mr. David S. Sharp
W. R. Grace and Company
P. O. Box 471
Bartow, Florida 33830

Dear Mr. Sharp:

Modification of Conditions
Permit No. AC 53-24460

We are in receipt of your request for a modification of the permit conditions. The conditions are changed as follows:

FROM:

14. The fertilizer plant 300-X (AO 53-25191) will be shut down before No. 3 DAP plant starts up. Fertilizer plant 300-Y (AO 53-13210) will cease operation within 6 months after the No. 3 DAP plant start-up. Operation permits will be returned to DER within 10 days of the shut down of each plant.

TO:

14. Fertilizer plants 300-X (AO53-25191) and 300-Y (AO 53-13210) can continue to operate as long as the plants are in compliance with all state and federal regulations and permit conditions.

This letter must be attached to your permit and become a part of that permit.

Sincerely,

Victoria J. Tschinkel
Secretary

VJT/whm

GRACE

Agricultural Chemicals Group

W. R. Grace & Co.
P.O. Box 471
Bartow, Florida 33830

(813) 533-2171

July 21, 1982

Mr. Steve Smallwood, P. E.
Chief, Bureau of Air Quality
Department of Environmental Regulation
Twin Towers Office Bldg.
2600 Blair Stone Rd.
Tallahassee, Fl 32301

Dear Mr. Smallwood:

Re Reduction of Permitted Emissions of Particulates;
and AC53-24460 Permit for New #3 DAP Plant

With reference to my letter of June 18, I enclose corrected copies of Tables 1, 1-A and 2 to be substituted in Dr. John Koogler's computerized dispersion study dated June 16, 1982. My corrections cover only minor errors which become obvious at a closer inspection of John's study.

We have authorized your Southwest District Office in Tampa to revise our operating permits in conformance with the above study. The total reduction proposed by us represents a decrease of 40.6%, from the presently permitted 635.3 lbs. to the proposed 377.2 lbs./hr. In other words, total particulate emissions from our Bartow Works complex would affect the Non-Attainment area in Hillsborough County by less than the $5\mu/m^3$ allowable increment defined as the level of "Significant Impact" even if all the existing plants, as well as those under construction, were emitting maximum allowable quantities of dust. The PTMTPW dispersion model was programed in this study with the most unfavorable atmospheric conditions experienced one day in 1970.

On June 24, 1982, I asked your District Manager, Bill Hennessey to kindly void our construction permit AC53-42443 to convert No. 2 DAP Plant to GTSP, because the unfavorable economic situation of the phosphate industry makes it impossible to obtain capital for this investment. We are therefore forced to continue operating the old 300-X and 300-Y GTSP trains in the near future,

Mr. Steve Smallwood, P. E.
July 21, 1982
Page 2

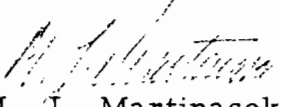
and ask you to kindly void Specific Condition No. 14 of construction permit AC53-24460 requiring that 300-X and 300-Y GTSP trains be shut down when No. 3 DAP plant becomes operative.

For your information, and in further support of this request, I enclose EPA study PSD-FL-68 dated April 1, 1981, which concludes that the proposed modification to DAP manufacturing, (i. e. No. 3 DAP plant) storage and shipping facilities meet all the applicable requirements of the PSD regulations. Shutting down the 300-X and 300-Y GTSP trains was not considered in this EPA determination.

In view of the above facts, and considering that our allowable future emission with No. 3 DAP plant as well as 300-X and 300-Y trains will still be 40.6% lower than the maximum present emissions; we trust you will grant our request to void said Specific Condition No. 14, especially since said construction permit *per se* meets also BACT requirements.

Please call us if you require any further information, or give us an appointment to discuss this urgent matter with you at your convenience.

Sincerely,


M. J. Martinašek
Project Engineer
Environmental Control

MJM:db
Enclosure

cc: W. K. Hennessey, District Manager
D. S. Sharpe/F. L. Applegate
M. J. Altenburger

GRACE

Agricultural Chemicals Group

W. R. Grace & Co.
P.O. Box 471
Bartow, Florida 33830

(813) 533-2171

June 18, 1982

Mr. Steve Smallwood, P. E.
Chief, Bureau of Air Quality
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Rd.
Tallahassee, Fl 32301

Dear Mr. Smallwood:


Re Evaluation of Permits for Particulate Emissions

With reference to your letter of May 17, and further to my letter of May 20, I enclose John Koogler's computerized study dated June 16 evaluating the impact of our proposed particulate emissions upon the Non-Attainment Area in Hillsborough County.

I asked John to include every existing stack as well as those still under construction, and to reduce each permitted emission by a specified amount in order to affect the Hillsborough area by less than $5 \text{ ug}/\text{m}^3$. We have also included DER Operating or Construction Permit number by each source, for easier identification. Said proposed level represents a total reduction of almost 40% and results in $4.96 \text{ ug}/\text{m}^3$ as per EPA diffusion model PTMTP-W under the most unfavorable conditions.

Please let us know if you approve of Dr. Koogler's modeling so that I might ask your Tampa office to modify our permits accordingly.

Sincerely,


M. J. Martinasev
Sr. Project Engineer
Environmental Control

MJM:bj0

Enclosure

CC: R. Garrett, DER - Tampa
M. J. Altenburger
F. L. Applegate

#44
 ADDITION 6/19/82

TABLE 1-A

PARTICULATE MATTER EMISSION DATA & SOURCE PARAMETERS

W. R. GRACE BARTOW WORKS
 BARTOW, FLORIDA

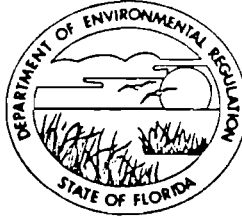
PRESEMI- PERMITTED 185.43	SOURCE NAME	EMM. RATE (lb/hr)	STACK HT. (M)	STACK TEMP. (DEG-K)	EXIT VEL. (M/SEC)	STACK DIA. (M)	VOL. FLOW (M ³ /SEC)	X-COORD. (KM)	Y-COORD. (KM)	
	<u>A053:</u>									
92.8	Dry Mill - Rock Dryers 29004	60.0	15.2	330.0	8.60	2.10	0.	409.610	3085.860	
46.0	Dry Mill - Rock Storage 13378	46.0	16.8	315.0	13.60	1.10	0.	409.600	3085.900	
46.0	Dry Mill - Rock Convey 14740	23.0	15.6	315.0	11.40	0.40	0.	409.620	3085.550	
23.7	Dry Mill - Grind Mill 14739	10.0	15.0	315.0	18.30	0.30	0.	409.600	3085.900	
7.2	Dry Mill - Rock Ship 51464	7.2	15.3	315.0	9.90	0.90	0.	409.800	3086.600	
41.9	Chem PI-Rock Grind 25188	36.0	22.0	315.0	9.60	0.60	0.	409.700	3086.890	
31.5	Chem PI-Ball Mill 26977	12.0	25.3	331.0	10.20	0.40	0.	409.810	3086.890	
31.0	Chem PI-300X GTSP DAP 25191	27.6	32.8	320.0	12.40	2.20	0.	409.980	3086.810	
30.1	Chem PI-300Y GTSP & ROP 13210	25.0	24.4	321.0	12.40	2.20	0.	409.980	3086.830	
33.7	Chem PI-GTSP Storage 25192	5.0	32.8	315.0	11.90	2.10	0.	409.670	3086.900	
31.8	Chem PI-GTSP Shipping 27026	10.0	28.0	315.0	5.30	0.80	0.	409.900	3086.700	
42.0	Chem PI-Fert. Plant DAP 06840	30.0	30.2	333.0	16.00	2.30	0.	409.810	3086.780	
29.9	Chem PI-DAP #3 (NEW) 24460	29.9	40.4	322.0	26.50	2.10	0.	409.290	3086.960	
31.2	Chem PI-ROP Belt 14475	4.0	14.0	315.0	12.90	0.60	0.	409.810	3086.560	
31.2	Chem PI-ROP Storage 14674	6.0	21.3	315.0	12.10	1.20	0.	409.600	3085.900	
31.2	Chem PI-ROP Shipping 13449	5.0	27.0	315.0	6.30	1.00	0.	409.600	3055.900	
38.6	Chem PI-DAP Shipping 32628	25.0	24.4	315.0	9.50	0.70	0.	409.840	3086.630	
15.5	Chem PI-NEW DAP Ship 36672	15.5	30.5	315.0	16.90	1.50	0.	409.410	3086.880	
<u>635.3</u>	<u>Total</u>	<u>377.2</u>								

For your convenience:
 7-18-82 H.J.M.

= 40.6% reduction

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY

June 25, 1982

Mr. M. J. Martinasek
Sr. Project Engineer
W. R. Grace and Company
P.O. Box 471
Bartow, Florida 33830

Re: Evaluation of Refined Modeling Submitted in Support
of Exemption from Rule 17-2.650(2), Florida Admini-
strative Code (FAC).

Dear Mr. Martinasek:

The Department has reviewed the dispersion modeling submitted to show compliance with the exemption criteria of Section 17-2.650(2)b.2., FAC, i.e. to demonstrate an insignificant impact on the Tampa particulate matter non-attainment area. The modeling was found to be complete and run within the guidelines set forth by the Department. Since the maximum highest, second-highest 24-hour concentration predicted to occur on the nonattainment area was less than 5.0 ug/m³ over a five year period and the maximum annual concentration was less than 1.0 ug/m³, the Department finds that W. R. Grace meets the exemption criteria set forth in the rule given the emission characteristics defined in the modeling.

Sincerely,

Steve Smallwood, P.E.
Chief
Bureau of Air Quality
Management

SS:TR:ras

cc: Dan Williams
Anthony Jones

TABLE 1

PARTICULATE MATTER EMISSION DATA & SOURCE PARAMETERS

W. R. GRACE BARTOW WORKS
BARTOW, FLORIDA

SOURCE NAME	EMM. RATE (lb/hr) g/sec	STACK HT. (M)	STACK TEMP. (DEG-K)	EXIT VEL. (M/SEC)	STACK DIA. (M)	VOL. FLOW (M ³ /SEC)	X-COORD. (KM)	Y-COORD. (KM)	
<i>RIDGEWOOD</i> Dry Mill - Rock Dryers 29004	7.56 ✓	15.2	330.0	8.60	2.10	0.	409.610	3085.860	R-116-2
Dry Mill - Rock Storage 13378	5.80 ✓	16.8	315.0	13.60	1.10	0.	409.600	3085.900	No change R-4,5,6
Dry Mill - Rock Convey 14740	2.90 ✓	15.6	315.0	11.40	0.40	0.	409.620	3085.550	R-8,9, R10-12
Dry Mill - Grind Mill 14739	1.26 ✓	15.0	315.0	18.30	0.30	0.	409.600	3085.900	R-7
Dry Mill - Rock Ship 51464	0.91 ✓	15.3	315.0	9.90	0.90	0.	409.800	3086.600	R13,14
Chem PI-Rock Grind 25188	4.54 ✓	22.0	315.0	9.60	0.60	0.	409.700	3086.890	
Chem PI-Ball Mill 26977	1.51 ✓	25.3	331.0	10.20	0.40	0.	409.810	3086.890	
Chem PI-300X GTSP DAP 25191	3.48 ✓	32.8	320.0	12.40	2.20	0.	409.980	3086.810	
Chem PI-300Y GTSP & ROP 13210	3.15 ✓	24.4	321.0	12.40	2.20	0.	409.980	3086.830	
Chem PI-GTSP Storage 25192	0.63 ✓	32.8	315.0	11.90	2.10	0.	409.670	3086.900	
Chem PI-GTSP Shipping 27026	1.26 ✓	28.0	315.0	5.30	0.80	0.	409.900	3086.700	
Chem PI-Fert. Plant DAP06840	3.78 ✓	30.2	333.0	16.00	2.30	0.	409.810	3086.780	
Chem PI-DAP #3 24460	3.77 ✓	40.4	322.0	26.50	2.10	0.	409.290	3086.960	
Chem PI-ROP Belt 14475	0.50 ✓	14.0	315.0	12.90	0.60	0.	409.810	3086.560	
Chem PI-ROP Storage 14674	0.76 ✓	21.3	315.0	12.10	1.20	0.	409.600	3085.900	
Chem PI-ROP Shipping 13449	0.63 ✓	27.0	315.0	6.30	1.00	0.	409.600	3055.900	
Chem PI-DAP Shipping 32628	3.15 ✓	24.4	315.0	9.50	0.70	0.	409.840	3086.630	
Chem PI-NEW DAP Ship 36672	1.95 ✓	30.5	315.0	16.90	1.50	0.	409.410	3086.880	
<u>Total</u>		<u>47.54 g/sec.</u>							

#/42
 ADDITION 6/19/02

TABLE 1-A

PARTICULATE MATTER EMISSION DATA & SOURCE PARAMETERS

W. R. GRACE BARTOW WORKS
 BARTOW, FLORIDA

SOURCE NAME	EMM. RATE (lb/hr)	STACK HT. (M)	STACK TEMP. (DEG-K)	EXIT VEL. (M/SEC)	STACK DIA. (M)	VOL. FLOW (M ³ /SEC)	X-COORD. (KM)	Y-COORD. (KM)
<u>AOS3:</u>								
Dry Mill - Rock Dryers 29004	60.0	15.2	330.0	8.60	2.10	0.	409.610	3085.860
Dry Mill - Rock Storage 13378	46.0	16.8	315.0	13.60	1.10	0.	409.600	3085.900
Dry Mill - Rock Convey 14740	23.0	15.6	315.0	11.40	0.40	0.	409.620	3085.550
Dry Mill - Grind Mill 14739	10.0	15.0	315.0	18.30	0.30	0.	409.600	3085.900
Dry Mill - Rock Ship 51464	7.2	15.3	315.0	9.90	0.90	0.	409.800	3086.600
Chem PI-Rock Grind 25188	36.0	22.0	315.0	9.60	0.60	0.	409.700	3086.890
Chem PI-Ball Mill 26977	12.0	25.3	331.0	10.20	0.40	0.	409.810	3086.890
Chem PI-300X GTSP DAP 25191	27.6	32.8	320.0	12.40	2.20	0.	409.980	3086.810
Chem PI-300Y GTSP & ROP 13210	25.0	24.4	321.0	12.40	2.20	0.	409.980	3086.830
Chem PI-GTSP Storage 25192	5.0	32.8	315.0	11.90	2.10	0.	409.670	3086.900
Chem PI-GTSP Shipping 27026	10.0	28.0	315.0	5.30	0.80	0.	409.900	3086.700
Chem PI-Fert. Plant DAP 06840	30.0	30.2	333.0	16.00	2.30	0.	409.810	3086.780
Chem PI-DAP #3 24460	29.9	40.4	322.0	26.50	2.10	0.	409.290	3086.960
Chem PI-ROP Belt 14475	4.0	14.0	315.0	12.90	0.60	0.	409.810	3086.560
Chem PI-ROP Storage 14674	6.0	21.3	315.0	12.10	1.20	0.	409.600	3085.900
Chem PI-ROP Shipping 13449	5.0	27.0	315.0	6.30	1.00	0.	409.600	3055.900
Chem PI-DAP Shipping 32626	25.0 ✓	24.4	315.0	9.50	0.70	0.	409.840	3086.630
Chem PI-NEW DAP Ship 36672	15.5 ✓	30.5	315.0	16.90	1.50	0.	409.410	3086.380
<u>Total 377.2 ✓</u>								

△ CORRECTION 6/19/82
(TYPOGRAPHICAL ERROR)

TABLE 2

SUMMARY OF PARTICULATE MATTER IMPACTS AT THE
BOUNDARY OF THE HILLSBOROUGH COUNTY PARTICULATE MATTER
NON-ATTAINMENT AREA

W. R. GRACE BARTOW WORKS
BARTOW, FLORIDA

Year	Annual	Impact (micrograms per cubic meter)	
		24-Hour	
		CRSTER	PTMTPW
1970	0.5	5.5 (day 345 @ 270°)	4.96 [△] (day 345 @ 270°)
1971	0.4	4.9	
1972	0.7	5.0 (day 347 @ 270°)	4.79 [△] (day 347 @ 270°)
1973	0.4	4.6	
1974	0.5	3.6	
Significant Impact Level	1.0	5.0	5.0



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

APP 1 1981

REF: 4AH-AF

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

D.S. SHARPE

Mr. ~~A. F. Vondrasek~~, General Manager
W. R. Grace and Company
Bartow Works Chemical Complex
P. O. Box 471
Bartow, Florida 33830

Re: Modification to Diammonium Phosphate Plant
and Storage and Shipping Facilities
PSD-FL-068

Dear Mr. ~~Vondrasek~~ *Sharpe*:

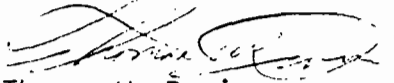
Review of your July 21, 1980 application to modify your phosphate chemical complex located 4 miles west of Bartow in Polk County, Florida has been completed. The construction is subject to the rules for the Prevention of Significant Air Quality Deterioration (PSD), contained in 40 CFR §52.21.

We have determined that the construction, as described in the application, meets all applicable requirements of the PSD regulations, subject to the conditions in the Conclusions section to the Final Determination (enclosed). EPA has performed the preliminary determination concerning the proposed construction, and published a request for public comment on February 25, 1981. No comments were received. Authority to Construct a Stationary Source is hereby issued for the facility described above, subject to the conditions in the Conclusions section to the Final Determination. This Authority to Construct is based solely on the requirements of 40 CFR §52.21, the Federal regulations governing significant deterioration of air quality. It does not apply to NPDES or other permits issued by this agency or permits issued by other agencies. Information regarding EPA permitting requirements can be provided if you contact Mr. Joe Franzmathes, Director, Office of Program Integration and Operations, at 404/881-3476. Additionally, construction covered by this Authority to Construct must be initiated within 18 months from the date of this letter. ✓

Please be advised that a violation of any condition issued as part of this approval, as well as any construction which proceeds in material variance with information submitted in your application, will be subject to enforcement action.

Authority to Construct will take effect on the date of this letter. The complete analysis which justifies this approval has been fully documented for future reference, if necessary. Any questions concerning this approval may be directed to Dr. Kent Williams, Chief, New Source Review Section.

Sincerely yours,



Thomas W. Devine
Director
Air and Hazardous Materials Division

Enclosure

cc: FL DER

Final Determination
W. R. Grace and Company
PSD-FL-068

I. Applicant

W. R. Grace and Company
Bartow Works Chemical Complex
P. O. Box 471
Bartow, Florida 33830

II. Project Location

The proposed modification is located north of State Road 60, 4 miles west of Bartow in Polk County, Florida. The UTM coordinates are Zone 17, 409.29 kilometers east and 3086.96 kilometers north.

III. Project Description

The applicant proposes to increase production of phosphate fertilizer by the construction of a diammonium phosphate (DAP) plant (No. 3) and DAP storage and shipping facilities. The rated capacity of the DAP plant is 115 tons per hour. It is scheduled to operate 7000 hours per year to produce 805,000 tons per year. Some existing fertilizer production capacity will be shut down about 6 months after the proposed construction is completed and in operation. This capacity reduction is not a concurrent reduction in emissions.

IV. Source Impact Analysis

The existing plant has the potential to emit greater than 100 tons per year of particulate matter (PM), sulfur dioxide (SO₂), nitrogen oxides (NO_x), and fluorides (F). The existing source therefore is a major stationary source. The proposed modification significantly increases emissions of pollutants regulated under the Clean Air Act (Act) amended August 7, 1977. Thus, in accordance with Title 40, Code of Federal Regulations, Part 52.21 (40 CFR 52.21) as promulgated August 7, 1980 (45FR52676), the proposed modification is subject to Prevention of Significant Deterioration (PSD) review.

The PSD review applies to each pollutant for which the modification would result in a significant net increase. Table 1 summarizes emission changes of all pollutants regulated under the Act affected by the proposed modification. This shows the proposed net emissions increase of PM, SO₂, and F are significant as defined in the PSD regulations. The emissions increase of NO_x and CO are not significant and therefore are not subject to further PSD review.

The PSD review analyzes the following:

- A. Best Available Control Technology (BACT);
- B. National Ambient Air Quality Standards (NAAQS) Impacts;
- C. PSD Increment Impacts;
- D. Class I Area Impacts;
- E. Growth Impacts; and
- F. Visibility, Soils, and Vegetation Impacts.

A. BACT Analysis

The applicant has submitted an application which was determined to be complete before August 7, 1980. This application shows the modification was subject to 40 CFR 52.21 as in effect on June 19, 1978. Therefore, in accordance with 40 CFR 52.21(i)(9) the requirements for BACT specified in the 1980 PSD regulations, 40 CFR 52.21(j), shall not apply. Instead the requirements of 40 CFR 52.21(j) as in effect on June 19, 1978 shall be applied. The latter does not require a BACT review for facilities emitting fluorides because the controlled emissions increase is less than 50 tons per year. However, all applicable emission limitations under the State Implementation Plan (SIP) and under the standards of performance 40 CFR 60 (NSPS) and 40 CFR 61 (NESHAPS) must be met. Thus, Table 2 shows fluoride emissions limited by NSPS requirements. There are no applicable NESHAPS requirements nor are there any general SIP requirements more restrictive than NSPS. The table contains certain standards set by case-by-case control technology review required by the State of Florida.

The applicant proposes to control particulates from the DAP plant with three dry cyclones followed by three coaxial venturi wet scrubbers. The scrubber liquid is phosphoric acid which recycles to the DAP reactors. This

Table 1
SUMMARY OF EMISSIONS
(tons per year)

<u>Facility</u>	<u>PM</u>	<u>SO_x</u>	<u>NO_x</u>	<u>F</u>	<u>CO</u>
DAP Plant	98	137	15	12	4
DAP Storage and Shipping	11	0	0	0	0
<hr/>					
Total	109 ✓	137 ✓	15 ✓	12 ✓	4 ✓
Significant ^a Emission Increase	25	40	40	3	100
Subject to PSD Review	Yes	Yes	No	Yes	No

^aReference 40 CFR 52.21(b)(23): Promulgated August 7, 1980.

serves to control ammonia losses as well as particulates. The gases are then scrubbed in two packed scrubbers using pond water as scrubbing liquid. The function of the packed scrubbers is primarily to remove gaseous fluorides; however, they are designed with spray chambers preceding the packed section to control silicon oxide gel which is formed by the reaction of silicon-tetrafluoride and water. This gel could hinder the scrubbing of fluorides or yield silicon dioxide particulates if not cleared by the spray chambers. The applicant proposes this combination of control equipment as BACT for control of PM and further proposes an emission limit of 0.5 pounds of PM per ton of equivalent P_2O_5 feed to the DAP plant. This corresponds to a BACT limit determined under the Florida SIP. A PM limit for DAP plants is not included in the NSPS.

The applicant proposes to control PM emissions from the DAP storage and shipping facility with a venturi scrubber or bag collector to a controlled concentration of 0.015 grains per dry standard cubic foot (7.8 pounds per hour).

The applicant proposes to control SO_2 emissions from the DAP plant by restricting the sulfur content of fuel oil used to heat the dryer to less than 2.4 percent sulfur. Further, the free ammonia and DAP product in the dryer is expected to absorb ^{at least} 50 percent of the SO_2 since the dryer combustion gases come in direct contact with DAP product. The applicant proposes this technology and an emission limit of 0.7 pounds of SO_2 per ton of equivalent P_2O_5 feed to the DAP plant as BACT. This corresponds to a BACT limit determined under the Florida SIP.

EPA has reviewed the proposed technology for the control of PM and SO_2 from the DAP plant and the DAP storage and shipping and concurs that this technology and emissions limits constitute BACT for these cases. These limits are listed in Table 2. The proposed use of two packed scrubbers is determined to be adequate technology to meet the NSPS requirements for control of fluoride emissions from the DAP plant (0.06 lb/ton equivalent P_2O_5 feed).

Table 2
ALLOWABLE EMISSION LIMITS

Facility Pollutant	Pounds Per Hour	Standard lbs/Operating Unit	Basis
DAP Plant			
PM	28	0.5 ^a	BACT ^b
SO ₂	39	0.7 ^a	BACT ^b
Fluoride	3.4	0.06 ^{a,c}	NSPS
DAP Storage and Shipping			
PM	7.8	0.015 gr/dscf	BACT ^d
Visible Emissions	-	<5% opacity	BACT ^e

^aPounds of pollutant per ton of equivalent P₂O₅ feed.

^bProposed by applicant based upon State of Florida BACT determination.

^cContinuous monitoring of feed rate and scrubber pressure drop.

^dProposed by applicant.

^eImposed by EPA consistent with mass standard, proposed by applicant; this opacity standard is subject to conditions of 40 CFR 60.11.

B. National Ambient Air Quality Standards (NAAQS) Impacts

The ambient air standards for PM and SO₂ for various averaging times are listed in Table 3. No NAAQS has been established for fluorides. Paragraph k(1) of the PSD regulations requires an air quality analysis to ensure these standards will not be violated. The applicant has submitted such an analysis.

The applicant's analysis proposed the background PM concentration will be represented by monitor measurements made by the Florida Department of Environmental Regulation (DER) at a site less than 2 kilometers south of the proposed construction. The applicant's analysis used the second highest 24-hour monitored value of 119 ug/m³ because the standard allows one exceedance per year. The EPA review determines the more conservative use of the highest 24-hour value of 126 ug/m³ is more appropriate for use in the analysis as discussed below. The use of this monitored data as background is a conservative assumption since it presumably contains a contribution from the existing sources at W. R. Grace, but it is to be used in the analysis without allowance for such a contribution.

Initial screening PM air quality impact modeling was carried out using the CRSTER model and particulate emissions from the proposed DAP plant and DAP storage and shipping. Meteorological data from Tampa for the years 1970 to 1974 were input to these model runs. These runs yield maximum annual concentrations from W. R. Grace facilities. Also from these runs the meteorological data resulting in the highest second-high 24-hour impact were selected for further modeling runs using the PTMTPW model and the emissions from all existing W. R. Grace facilities as well as the proposed new facilities. The model results from PTMTPW runs were collected in a 0.4 X 0.5 km receptor grid with 0.1 km spacing located at the east property line. These runs yield the 24-hour highest second-high PM ambient concentrations due to the proposed construction and the existing W. R. Grace facilities. An analysis of the impact areas of the proposed project and of new facilities at two neighboring sources (New Wales, PSD-FL-034, and Agrico, PSD-FL-061) shows no overlap, therefore interaction between sources was not evaluated.

Table 3
ANALYSIS OF NAAQS IMPACTS

<u>Pollutant</u>	<u>Averaging Time</u>	<u>Modeled Impacts^{a,b}</u>		<u>Background</u>	<u>Total</u>	<u>NAAQS^{b,c}</u>
		<u>New & Proposed</u>	<u>Existing</u>			
Particulates	Annual	.8 ^d	2 ^d	53.6 ^{e,f}	56.4	60 ^e
	24-Hour	6 ^g	13 ^g	126 ^f	147	150 ^h
SO ₂	Annual	4 ^d	42 ^d	20	66	80 ⁱ
	24-Hour	34 ^g	128 ^g	20	182	365 ^h
	3-Hour	108 ^g	236 ^g	20	364	1300 ^h

^aModeled maximum ambient concentration increases.

^bMicrograms per cubic meter, (ug/m³).

^cThe lower concentration of either the primary or secondary standard.

^dHighest high.

^eGeometric mean.

^fHighest monitored concentration measured within 2 km of site over 20 months (includes contribution from existing sources as well as true background).

^gHighest second-high.

^hNot to be exceeded more than once per year.

ⁱArithmetic mean.

Table 3 lists the monitored background concentration, the modeled increase in concentration, due to existing and proposed facilities and the summation of these for comparison with the NAAQS. EPA concurs with the applicant's conclusion that the proposed project shall not threaten any NAAQS for PM.

For analysis of impact on the SO₂ NAAQS, no monitored data for the vicinity of the proposed project was available, therefore, the applicant's analysis first established the area of impact of the proposed project plus two sulfuric acid plants located at the W. R. Grace plant site that have been constructed since January 6, 1975. These impact areas were determined to have a radii of 20, 36, and 40 kilometers for the annual, 24-hour, and 3-hour significance levels of 1, 5, and 25 ug/m³, respectively (reference 45FR26398). To determine the baseline maximum ambient air concentration of SO₂ in the vicinity of the W. R. Grace plant, an inventory was made of all major SO₂ sources within 50 kilometers, which were constructed prior to January 6, 1975. The allowed SO₂ emissions from these inventoried sources were input to the AQDM model with meteorological data from Tampa representing the 5-year period, 1970 through 1974. The applicant's analysis submitted the maximum concentrations of this run as the baseline maximum annual ambient SO₂ concentration. Background from distant sources or non man-made sources was considered zero, but in the absence of monitored measurements, EPA must assume uninventoried background to be 20 ug/m³; therefore, the applicant's proposed baseline shall be increased by 20 for all averaging times. The applicant's analysis further modeled all new sources (constructed since January 6, 1975) within 50 kilometers of the W. R. Grace site (including the new and proposed W. R. Grace facilities). The individual components of this analysis and the summation for comparison with the annual SO₂ NAAQS are shown in Table 3.

The short-term analysis to determine the impacts on the 24-hour and 3-hour NAAQS were carried out with the same inventories of new and existing sources. To analyze the interactions between W. R. Grace and the neighboring sources four worst case meteorological conditions were selected with different wind directions. The selections were based upon the results of CRSTER screening runs which had used 5 years of meteorological data. These runs had been made upon the proposed sources and showed that for W. R. Grace sources alone with a

westerly wind direction yielded maximum impact. This was selected as case 1 even though no neighboring sources lay west of W. R. Grace. The nearest major neighboring source (New Wales Chemicals) was southwest, with several sources south and a large utility to the north. Therefore, these wind directions were used to select the meteorological worst days from the previous CRSTER runs. The short term interaction concentrations were estimated with the PTMPW air quality model. The results of the eight possible interaction cases are summarized in Table 4. The worst-case for each averaging time is shown in Table 3 and summed with a background concentration of 20 ug/m³ for comparison with the NAAQS. EPA concurs, based on the analysis presented, that this project does not threaten any NAAQS for SO₂.

C. PSD Increment Impact

Paragraph (k)(2) of the PSD regulations requires an analysis to ensure that no PSD increment will be violated. The PM and SO₂ increments applicable to this analysis are shown in Table 5. The SO₂ modeling results developed in the NAAQS analysis which represent maximum concentrations from new and proposed sources include all increment consuming sources within the impact area and major sources within 50 kilometers. EPA concurs based on the analysis presented that this project does not threaten violation of any PSD Class II increments.

D. Class I Area Impacts

The nearest Class I area to this proposed modification is Chassahowitzka National Wildlife Refuge, located approximately 104 kilometers northwest of the W. R. Grace Chemical Complex. The applicant concludes no significant impacts will occur in the Class I area. EPA concurs that since the Class I area is greater than 100 kilometers away, and models cannot reasonably predict impacts beyond 100 kilometers, no further analysis of Class I area impacts is required, and it is determined that the proposed modification will not affect any Class I area.

E. Growth Impacts

The increased employment due to the proposed project will be about six persons. The increased production will be shipped from the area and is not expected to significantly influence local commercial or industrial growth. The increased transportation of raw materials and product will be handled with existing facilities with a negligible increase in secondary emissions.

Table 4
 Maximum Short-term SO₂ Impacts (Modeled)
 (8 Cases)

Number and Location of Facilities

<u>Wind Direction</u>	<u>New and Proposed</u>	<u>Existing</u>	<u>Total</u>	<u>Maximum Concentration Location</u>
West	3 - W. R. Grace (no significant new or existing sources west of W. R. Grace)	5 - W. R. Grace		
Max. 24-hour Concen.	34 ug/m ³	128 ug/m ³	162 ug/m ³	1.7km
Max. 3-hour Concen.	78 ug/m ³	138 ug/m ³	216 ug/m ³	1.7km East of W. R. Grace
South	3 - W. R. Grace 1 - Farmland 2 - CF Industries 2 - Agrico	5 - W. R. Grace 1 - Farmland 4 - CF Industries 4 - Agrico		
Max. 24-hour Concen.	26 ug/m ³	89 ug/m ³	115 ug/m ³	1.3km
Max. 3-hour Concen.	108 ug/m ³	236 ug/m ³	344 ug/m ³	1.2km North of W. R. Grace

Table 4 (cont.)
 Maximum Short-term SO₂ Impacts (Modeled)
 (8 Cases)

Number and Location of Facilities

<u>Wind Direction</u>	<u>New and Proposed</u>	<u>Existing</u>	<u>Total</u>	<u>Maximum Concentration Location</u>
Northwest	3 - W. R. Grace 5 - New Wales	5 - W. R. Grace 6 - New Wales 2 - Conserve 1 - Royster 3 - Mobil		
Max. 24-hour Concen.	13 ug/m ³	24 ug/m ³	37 ug/m ³	1.6km
Max. 3-hour Concen.	63 ug/m ³	106 ug/m ³	169 ug/m ³	1.5km
				Southeast of W. R. Grace
North	3 - W. R. Grace 2 - Lakeland Utilities	5 - W. R. Grace 5 - Lakeland Utilities		
Max. 24-hour Concen.	16 ug/m ³	31 ug/m ³	47 ug/m ³	1.6km
Max. 3-hour Concen.	76 ug/m ³	155 ug/m ³	231 ug/m ³	1.5km
				South of W. R. Grace

Table 5
CLASS II AREA INCREMENT ANALYSIS

<u>Pollutant/ Averaging Time</u>	<u>Maximum Increment Consumption</u> ($\mu\text{g}/\text{m}^3$)	<u>PSD Allowed Increment</u> ($\mu\text{g}/\text{m}^3$)
SO ₂		
3-hour	108	512
24-hour	34	91
Annual	4	20
PM		
24-hour	8	37
Annual	<1	19

3. The applicant shall install, calibrate, maintain, and operate continuous monitoring systems for measuring in accordance with the provisions of 40 CFR 60 Subpart V, Paragraph 60.223 - Standards of Performance for Phosphate Fertilizer Industry: Diammonium Phosphate Plants:
 - a. The mass flow rate of equivalent P_2O_5 feed to the DAP plant; and
 - b. The total pressure drop across the scrubbing systems of the DAP plant.
4. In addition to Specific Conditions 2 and 3, the applicant shall comply with all applicable New Source Performance Standards requirements of (40 CFR 60 Subpart V). NSPS
5. The oil used to fuel the DAP dryer shall not contain more than 2.4 percent sulfur. The sulfur content of the fuel used during the compliance stack test for SO_2 emissions shall be recorded and that level of fuel oil sulfur content shall not be exceeded without another SO_2 emissions compliance test being performed. A record of all SO_2 test results and sulfur content of all fuel oil received shall be maintained. In lieu of the above evidence of continuing compliance, the source may install continuous SO_2 monitoring/recording equipment subject to the requirements of 40 CFR 60.13 which meets the appropriate Performance Specifications of 40 CFR 60 Appendix B.
6. The PM emissions from the DAP storage and shipping shall not exceed 7.8 pounds per hour or 0.015 grains per dry standard cubic foot while operating at the maximum product handling capacity of 115 tons per hour input and simultaneously 300 tons per hour output. Visible emissions shall not exceed 5 percent opacity.
7. Compliance with the emissions limits (Conditions 2 and 6) shall be determined by performance tests scheduled in accordance with the attached General Conditions and conducted in accordance with the provisions of reference methods in Appendix A of 40 CFR 60, except as provided under 40 CFR 60.8(b) as follows:

F. Soils, Visibility, and Vegetation Impacts

The applicant has concluded that impacts of SO_2 and PM upon soils, visibility, and vegetation will not be detrimental since the ambient concentrations are well below secondary NAAQS which have been established considering these welfare related criteria. No NAAQS have been established for fluorides, but since the emissions of fluorides are controlled to a low level by NSPS requirements, it is concluded that no detrimental effects will occur. EPA concurs with these conclusions.

V. Conclusions

EPA Region IV proposes a preliminary determination of approval with conditions for the construction of the modification to the W. R. Grace and Company Bartow Works Chemical Complex proposed in its application submitted July 21, 1980. The determination is made on the basis of information contained in the application and in additional information dated August 15, 1980 and January 26, 1981 received from the applicant. The specific conditions set forth in the permit are as follows:

1. The new facilities shall be constructed in accordance with the capacities and specifications stated in the application including a DAP plant capacity of 115 tons per hour (56 tons per hour of equivalent P_2O_5 feed), a DAP storage capacity of approximately 45,650 tons, a DAP plant to DAP storage transfer equipment capacity of 115 tons per hour, and a DAP loadout facility capacity of 300 tons per hour.
- ② Emissions of PM, SO_2 , and fluorides from the DAP plant shall not exceed 28, 39, and 3.4 pounds per hour, respectively, while operating at the maximum operating rate of 56 tons per hour of equivalent P_2O_5 feed. At lesser operating rates the emissions of PM, SO_2 , and fluorides shall not exceed 0.5, 0.7, and 0.06 pounds, respectively, per ton of equivalent P_2O_5 feed.

- a. Method 1 for sample and velocity traverses;
- b. Method 2 for velocity and volumetric flow rate;
- c. Method 3 for gas analyzing;
- d. Method 5 for concentration of PM and associated moisture content;
- e. Method 9 for visible emissions; and
- f. Method 13A or 18B for the concentration of total fluorides and the associated moisture content.

Each facility shall operate within 10 percent of the maximum operating rate during sampling. The parameters of operating rate, control equipment variables and all continuous monitoring results shall be recorded during compliance testing and made a part of the reported results.

8. The source shall 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 and/or representatives of the Environmental Protection Agency, upon the 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 30365
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.