



June 21, 1996

Mr. Al Linero, P.E.
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED

JUN 24 1996

BUREAU OF
AIR REGULATION

Re: Cargill Fertilizer, Inc.
Riverview Nos. 3 and 4 Phosphoric Acid Plants
PSD-FL-231 (0570008-004-AC)

Dear Mr. Linero:

Cargill has received the Department's letter dated June 13 regarding the above referenced permit application. In response to this letter, Cargill agrees to install packing in the scrubber for the third filter at Riverview. The packing specifications will be as described in KBN's response letters dated April 15 and May 31.

Please issue the draft permit as soon as possible. Please call if you have any further questions concerning this information.

Sincerely,

David A. Buff, P.E.
Principal Engineer
Florida P.E. #19011

DB/lcb

cc: David Jellerson
Kathy Edgemon
File (2)

SEAL

14361A/03

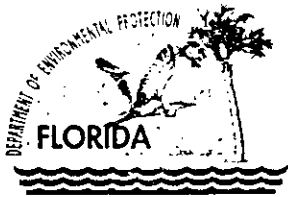
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Department of Environmental Protection

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Virginia B. Wetherell
Secretary

June 13, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Kathy Edgemon
Environmental Engineer
Cargill Fertilizer, Inc.
8813 Highway 41 South
Riverview, Florida 33569

RE: PSD-FL-231/0570008-004-AC

Dear Ms. Edgemon:

This is in response to KBN's April 15 and May 31 letters on behalf of Cargill submitting information that had been requested on packed scrubbing efficiency for the No. 3 filter at the Riverview plant. The Department reviewed the information submitted and determined that packed scrubbing will be required. The following discussion provides the basis for this determination.

The May 31 letter was the result of KBN's calculations not having been done in a conventional manner to represent the percent of actual removal for 8,000 ppm F pond water. The figures had been adjusted by removing the equilibrium concentration from the outlet stream. This made the efficiency appear higher (per cent of 'possible' vs. 'actual'). The calculation of 99.8% removal is actually 82.3% and NTU = 5.79 for the conditions selected (100°F and 8,000 ppm). The 82.3% compares to actual removal efficiencies of 99+% for other BACT installations where as many as 8 NTU's have been achieved with unneutralized pond water.

The Department did not agree with the April 15 letter stating that it is unnecessary to go beyond 4 NTUs because the literature and data show otherwise. There are numerous installations in the phosphate industry that have more NTUs. Dr. A. J. Teller's March 1967 article regarding fluoride removal states:

"Inasmuch as efficiencies on the order of 99+% are required, 4.6 transfer units must be provided by the system if the scrubbing medium exerts no equilibrium partial pressure during its exposure to the gas. Where recycle pond water is used, without neutralization, a greater number of transfer units is required; as many as 8 transfer units have been achieved in several installations."

The Department did not agree with the argument that a 'point of diminishing returns' lies at 4 NTUs. BACT determinations must be

Ms. Kathy Edgemon
June 13, 1996
Page Two

based on what is being achieved at other installations even though the pond water fluoride concentration here may be somewhat higher.

Another problem is the claim that the venturi will achieve at least 3 NTUs itself. At a pressure drop of 0.45 inches H₂O, data available to the Department indicate that the existing venturi would probably not exceed 2.0 NTUs.

During a phone conversation with KBN on May 6, we discussed the above and requested that the efficiency calculations be revised to conform with convention. We also suggested that Cargill present their analysis so as to compare the individual and total emissions from the reactor and "separated" filter with a combined reactor-filter scrubbing system. The logic for this comparison was that the Department might have been able to look at the "separated" system as being equivalent to the combined system if the total emissions were equivalent.

KBN then calculated what the fluoride emissions would be using assumed inlet loadings at varying levels of mass transfer. KBN used 12.0 mg/dcf as their reactor off-gas concentration and 0.4 mg/dcf from the filter to represent the Riverview situation. (We should point out that our data show these concentrations are far weaker than what would be considered as typical for other plants and suggests that Cargill is pulling far too much air across these units. Higher removal efficiencies could be achieved if the air flows were reduced, not to mention power cost savings.) KBN's conclusion was that beyond 6 NTUs, there is no difference in emissions from the reactor alone, and the combined reactor-filter. The combined scrubber system calculations showed that at the 6 NTU level the total emissions from a conventional combined system would be 0.61 lb/hr compared to a total of $0.61 + 0.43 = 1.04$ lb/hr if the reactor and filter are separated with each stream being scrubbed with 6 NTUs.

The actual "separated" emissions would be considerably higher with only a venturi scrubber on the filter (2 NTUs instead of 6 in the above example; i.e., $0.61 + 0.70 = 1.31$ lb/hr). Therefore, it is readily seen that when the reactor and filter are separated as they have been at Cargill, the fluoride emissions are higher than those from a combined system. Using the above example, on an annual basis the separated emissions are higher by 3.1 tons F/yr which is slightly higher than the PSD significance level.

This raises a conceptual issue that the Department cannot ignore in this analysis; that is, the environmental disadvantage that occurs when a source elects to separately control previously combined emission units and then argues that it can't attain the equivalent of the previous combined control system and should not be required to do so. If this becomes an accepted concept, then a precedent would be set for other cases involving such separations.

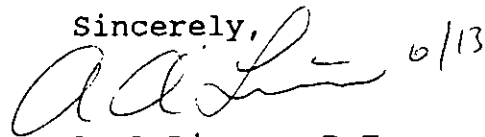
Ms. Kathy Edgemon
June 13, 1996
Page Three

In regard to the great extent Cargill went to concerning the limitations on fluoride scrubbing efficiency, the Department cannot ignore the fact that for BACT determinations, fluoride emissions do not have to be dictated by existing pond water fluoride concentrations; i.e., pond water treatment is a demonstrated technology. Also, the Department cannot ignore that cost effectiveness of fluoride controls will always be very high due to the relative amount of emissions involved.

However, the most overriding issue in the present case is that Cargill has agreed to use packed scrubbing in an identical situation at their Bartow plant while continuing to resist it for the Riverview plant. We would prefer Cargill's concurrence on the packed scrubber, as was provided for the Bartow plant, before issuing the proposed permit.

If there are questions regarding this letter, please contact me or John Reynolds at 904-488-1344.

Sincerely,



A. A. Linero, P.E.
Administrator
New Source Review Section

AAL/JR

c: B. Thomas, SWD
J. Harper, EPA
J. Campbell, EPCHC
J. Bunyak, NPS
D. Buff, P.E.

P 339 251 108

US Postal Service
Receipt for Certified Mail

No Insurance Coverage Provided.

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Sent to <i>Kathy Edgemon</i>	
Street & Number <i>Carsle Fert.</i>	
Post Office, State, & ZIP Code <i>Riverview, FL</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
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PS Form 3800 April 1995

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Kathy Edgemon, Env. Eng.
Carsle Fertiliizer
8813 Hwy 41 South
Riverview, FL 33569

4a. Article Number
P 339 251 108

4b. Service Type
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7. Date of Delivery
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5. Signature (Addressee)
Therese Franklin
 6. Signature (Agent)
for K.E.

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

PS Form 3811, December 1991

*U.S. GPO: 1993-352-714

DOMESTIC RETURN RECEIPT

Thank you for using Return Receipt Service.



May 31, 1996

Mr. Al Linero, P.E.
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

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JUN 10 1996
BUREAU OF
AIR REGULATION

Re: Cargill Fertilizer, Inc.
Riverview Nos. 3 and 4 Phosphoric Acid Plants
PSD-FL-231 (0570008-004-AC)

Dear Mr. Linero:

The purpose of this correspondence is to present additional information to the Department regarding the above referenced permit application. This additional information is based on our telephone discussion of May 6, 1996, during which several concerns were raised by the Department. The information is presented below in regards to each area of concern. Supportive information is provided in the attachments.

ADDITIONAL INFORMATION ON PACKING

The Department requested that additional information be provided concerning the packing to be added to the venturi scrubber. In our previous submittal, a sketch of the scrubber and the packing configuration was provided. Based on the scrubber design and the location that the packing will be placed, the cross sectional area of the packing will be approximately 12 feet x 13 feet. Cargill is currently considering two types of packing: Kimre mesh pads and polypropylene saddles. If mesh pads are used, the depth of one stage of packing will be 2" to 3". If saddles are used, the packing depth will be approximately 2 feet.

CALCULATION OF FLUORIDE REMOVAL EFFICIENCY

The Department expressed concern that the method of fluoride removal efficiency calculation presented in the April 15 letter was not based on the conventional method of calculation, i.e., $[(F_{in} - F_{out})/F_{in}] \times 100$. The calculations presented were based on the fact that the outlet fluoride loading could not be less than the pond water fluoride equilibrium concentration (0.070 mg/pcf), no matter how many transfer units were employed. This fact has a significant effect upon the efficiency as calculated in the traditional manner, due to the very low inlet fluoride concentrations to the scrubber (i.e., on the order of 0.4 mg/pcf).

The attached Table 1 presents the efficiency calculations based on the traditional methodology. The representative situation for the Riverview 3rd filter is an inlet fluoride concentration of 0.400 mg/pcf. As shown, the scrubber could never achieve a fluoride removal efficiency greater than 82.5%, no matter how many transfer units were employed. This does not mean that the scrubber is incapable of achieving higher efficiencies, it is merely a reflection of the relatively low inlet concentration, and the outlet concentration being limited by the pond water contribution.

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However, it was also acknowledged that the third filter at Riverview will not be controlled in the traditional manner. The traditional manner of control is to have the phosphoric acid reactor and filter both vented to a single scrubber. Under these conditions, the inlet fluoride concentration to the scrubber is much higher, and therefore the fluoride removal efficiency is much greater for a given number of transfer units.

Two additional situations are portrayed in Table 1. The first situation is a loading to the scrubber equal to that of a phosphoric acid plant reactor. Based on the EPA guideline document for control of fluoride emissions from existing phosphate fertilizer plants, the typical loading from a reactor is 12 mg/pcf. As shown, the fluoride removal efficiency for 6 NTUs (as proposed for the No. 3 Filter scrubber) is 99.2%. Increasing the NTUs to 8 increases the removal efficiency to only 99.4%, with an associated reduction in F emissions of only 0.16 lb/hr (0.61 - 0.45). An insignificant reduction in fluoride emissions results from increasing the NTUs beyond 8.

The last scenario portrayed in Table 1 is that of a loading to the scrubber equal to the combination of a reactor and a filter. As shown, at 6 NTUs there is no difference from the case of the reactor only. The total fluoride reduction due to increasing the NTUs from 6 to 8 is 0.16 lb/hr. Since the filter represents only 3% of the total fluoride loading to the scrubber (0.40 / 12.4) under this scheme, the reduction in fluoride emissions from the filter is only 0.005 lb/hr.

COST OF ADDITIONAL PACKING IN SCRUBBER

The Department requested that a cost analysis be performed for additional packing for the No. 3 Filter scrubber. For this purpose, cost estimates were developed for both capital and annual operating costs associated with the installation and operations of the scrubber with additional packing. For this analysis, the baseline emission case was the scrubber with no packing, with a total NTU of 3.

Cargill is proposing to install one stage of packing to result in a total NTU of 6. Based on Table 1, this will result in a reduction in fluoride emissions of 0.10 lb/hr (0.53 lb/hr - 0.43 lb/hr). Installation of an additional stage of packing will result in a total NTU of at least 8. This will result in a further reduction in fluoride emissions of 0.005 lb/hr.

The estimated capital and annual operating costs for the packing for the scrubber are presented in Table 2. The total capital cost of one stage of packing is estimated at \$28,000, while the annual cost is \$35,000/yr. For two stages of packing, the capital cost is \$50,000, while the annual cost is \$54,000/yr.

Based on the cost analysis, the cost effectiveness of each control option is shown in Table 2. The cost effectiveness of one stage of packing, which Cargill proposes to install, is \$80,000/ton of fluoride removed. For the additional stage of packing, the cost effectiveness is \$118,000/ton removed. The incremental cost of increasing the packing from one stage to two stages is \$875,000/ton removed. These cost effectiveness figures are extremely high, particularly considering that fluoride is not a criteria pollutant, and no ambient or health related standards exist.



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CONCLUSIONS

In conclusion, the above analysis demonstrates that the installation of one stage of packing in the No. 3 Filter scrubber has minimal effects on fluoride emissions (0.1 lb/hr or 0.4 tons/year). An additional stage of packing results in further reductions of only 0.005 lb/hr or 0.2 tons/year. The cost effectiveness of the packing is extremely high and unreasonable. Therefore, Cargill requests that packing not be required for this installation. Since this results in a unique case of BACT in that the scrubber is controlling emissions from a filter only, and not a reactor, this should not set a precedent for any other BACT determinations.

I sincerely hope this information provides the Department with the necessary information in order to issue the draft construction permit in an expeditious manner. Please call if you have any further questions concerning this information.

Sincerely,

David A. Buff, P.E.
Principal Engineer
Florida P.E. #19011

SEAL

DB/mk

cc: David Jellerson
Kathy Edgemon
File (2)

cc: J. Reynolds, BAR
B. Thomas, SWD
J. Campbell, EPCHC
C. Holladay, BAR
EPA
NPS

Table 1. Calculation of FI Removal Efficiency Versus NTUs for
No. 3 Filter Wet Scrubbing System, Cargill Riverview

NTUs	Inlet FI Loading (mg/dcf)	Outlet FI Loading (mg/dcf)	FI Removal Efficiency ^a	FI Emissions (lb/hr)	
0	0.400	0.400	0.0%	2.43	
2	0.400	0.115	71.3%	0.70	
3	0.400	0.086	78.4%	0.53	
4	0.400	0.076	81.0%	0.46	
5	0.400	0.072	81.9%	0.44	
6 *	0.400	0.071	82.3%	0.431	No. 3 Filter only
7	0.400	0.070	82.4%	0.427	
8	0.400	0.070	82.5%	0.426	
9	0.400	0.070	82.5%	0.426	
10	0.400	0.070	82.5%	0.426	
100	0.400	0.070	82.5%	0.426	
0	12.000	12.000	0.0%	72.95	
2	12.000	1.685	86.0%	10.24	
3	12.000	0.664	94.5%	4.04	
4	12.000	0.289	97.6%	1.75	
5	12.000	0.150	98.7%	0.91	
6 *	12.000	0.100	99.2%	0.61	Reactor only
7	12.000	0.081	99.3%	0.49	
8	12.000	0.074	99.4%	0.45	
9	12.000	0.071	99.4%	0.435	
10	12.000	0.071	99.4%	0.429	
100	12.000	0.070	99.4%	0.426	
0	12.400	12.400	0.0%	75.38	
2	12.400	1.739	86.0%	10.57	
3	12.400	0.684	94.5%	4.16	
4	12.400	0.296	97.6%	1.80	
5	12.400	0.153	98.8%	0.93	
6 *	12.400	0.101	99.2%	0.61	No. 3 Filter plus Reactor
7	12.400	0.081	99.3%	0.49	
8	12.400	0.074	99.4%	0.45	
9	12.400	0.072	99.4%	0.435	
10	12.400	0.071	99.4%	0.429	
100	12.400	0.070	99.4%	0.426	

* NTUs for Cargill's venturi/packed bed scrubber.

Notes:

Fluoride air concentration due to pond water @ 100 deg. F and 8,000 ppm FI =
0.070 mg/dcf

Stack exit conditions = 46,000 cfm, dry @ 100 deg. F

mg/dcf = milligrams per dry cubic feet

NTUs = number of transfer units = $\ln [(F_{in} - PW) / (F_{out} - PW)]$

where, PW = pond water vapor pressure

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Table 2. Economic Analysis for Alternative Fluoride Control Systems for No. 3 Filter Scrubber at Cargill Fertilizer, Riverview

Cost Item	Cost Factor	One Stage of Packing (\$)	Two Stages of Packing (\$)
DIRECT CAPITAL COSTS (DCC):			
1. Purchased Equipment Costs			
a. Basic Equipment (a)	Vendor Quote	8,500	17,000
b. Instrumentation (b)	10% x (1a)	850	1,700
c. Sales Tax (Florida)	6% x (1a)	510	1,020
d. Freight (b)	5% x (1a)	425	850
e. Total purchased equipment cost	(1a .. 1d)	10,285	20,570
2. Direct Installation (b)			
a. Foundations & supports	12% x (1e)	1,234	2,468
b. Handling & erection	40% x (1e)	4,114	8,228
c. Electrical	1% x (1e)	103	206
d. Piping	30% x (1e)	3,086	6,171
e. Insulation	1% x (1e)	103	206
f. Painting	1% x (1e)	103	206
g. Total direct installation costs	(2a .. 2f)	8,742	17,485
3. Site Preparation	As required	0	0
4. Buildings	As required	0	0
5. Total DCC:	(1) + (2) + (3) + (4)	19,027	38,055
INDIRECT CAPITAL COSTS (ICC): (b)			
a. Engineering	10% x (1e)	1,029	2,057
b. Construction & Field Expenses	10% x (1e)	1,029	2,057
c. Contractor Fees	10% x (1e)	1,029	2,057
d. Startup	1% x (1e)	103	206
e. Performance test (c)		6,000	6,000
f. Contingencies (d)	30% x (1e)	3,086	6,171
g. Total ICC:		9,188	12,377
TOTAL CAPITAL INVESTMENT (TCI)	DCC + ICC	28,216	50,431
DIRECT OPERATING COSTS (DOC): (b)			
1. Operating Labor			
a. Operator	22 \$/hr, 0.25 hrs/shift	6,023	6,023
b. Supervisor	15% of operator cost	903	903
2. Operating materials	0	0	0
3. Wastewater disposal	0	0	0
4. Maintenance:			
a. Labor	22 \$/hr, (0.25, 0.5) hrs/shift	6,023	12,045
b. Material	100% of maintenance labor	6,023	12,045
5. Electricity :			
a. Fan	85 \$/MW-hr; (5, 10) kilowatts	3,723	7,446
b. Pump	85 \$/MW-hr	0	0
Total DOC		22,694	38,462
INDIRECT OPERATING COSTS (IOC): (b)			
a. Overhead	60% of labor & materials costs	7,227	14,454
b. Administration	2% of total capital investment	564	1,009
c. Property Taxes	1% of total capital investment	282	504
d. Insurance	1% of total capital investment	282	504
e. Capital recovery cost	0.1315 times total capital investment (e)	3,710	3,710
Total IOC		12,066	15,463
ANNUALIZED COSTS (AC):	DOC + IOC	34,760	53,924
Fluoride emissions with only venturi scrubber (no packing) - 0.53 lb/hr (TPY)		2,321	2,321
Fluoride emissions after installing packing (TPY) 1 stage = 0.431 lb/hr; 2 stages = 0.426 lb/hr		1,888	1,866
TOTAL FLUORIDE REMOVED (TPY)		0,434	0,456
TOTAL COST OF FLUORIDE REMOVED (\$/TON)		80,162	118,380
INCREMENTAL FLUORIDE REMOVED (TPY)		--	0,022
INCREMENTAL COST OF FLUORIDE REMOVED (\$/TON)		--	875,098

(a) The basic equipment costs for each stage of packing based on pricing from Kimre, Inc.

(b) Based on gas absorber systems from OAQPS Control Cost Manual, Fourth Edition (EPA 450/3-90-006).

(c) Estimated cost of performing fluoride testing.

(d) Based on potential complexities associated with retrofitting existing scrubber system.

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May 9, 1996

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Mr. Al Linero, P.E.
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Cargill Fertilizer, Inc.
Riverview Nos. 3 and 4 Phosphoric Acid Plants
PSD-FL-231 (0570008-004-AC)

Dear Mr. Linero:

Based on our telephone conversation of May 6, 1996, Cargill will be providing additional information to the Department concerning the above referenced permit application. This additional information will be provided no later than May 17, 1996.

Please call if you have any further questions concerning this notification.

Sincerely,

David A. Buff

David A. Buff, P.E.
Principal Engineer

cc: David Jellerson
Kathy Edgemon

cc: J. Reynolds, BAR

DB/mlb

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April 15, 1996

Mr. Al Linero, P.E.
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

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APR 16 1996
BUREAU OF
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Re: Cargill Fertilizer, Inc.
Riverview Nos. 3 and 4 Phosphoric Acid Plants
PSD-FL-231 (0570008-004-AC)

Dear Mr. Linero:

This letter is in response to the Department's letter dated January 11, 1996, to Kathy Edgemon of Cargill, regarding the above-referenced permit application. Responses are provided below in the same order as presented in the Department's letter.

1. Cargill is considering installing packing by Kimre, Inc., on the existing scrubber. A sketch of the modified scrubber is attached. In this arrangement, there will be one stage of packing, with six layers of packing per stage. Kimre states that one stage of packing results in 3 NTUs (number of transfer units).

As a result of adding the packing, the modified No. 3 filter scrubber will now consist of a venturi section followed by a packed bed section. The scrubber will then resemble closely the existing scrubber on the Dorrco (No. 4) phosphoric acid reactor. The primary difference between the two scrubbers will be the distance between the packed bed section and the demister section: in the No. 3 Filter scrubber, the length of this section will shorter than in the No. 4 Reactor scrubber.

Based on calculations by Cargill using actual conditions, the No. 4 Reactor scrubber, with venturi and packed bed sections, achieves approximately 7 NTUs (determined using relationship between NTUs and fluoride inlet and outlet concentrations, as described below). Therefore, it is expected that the No. 3 Filter scrubber, with venturi and packed bed sections will achieve an NTU of at least 6. The fluoride removal efficiency of the scrubber is calculated to be 99.8 percent as described below.

The number of NTUs a scrubbing system achieves is dependent on several factors. For example, a specific scrubber, if made to serve a gas stream with a lower inlet FI concentration, will result in a lower NTU. The reasons for this are described below.

The overall fluoride removal efficiency will be dependent upon the NTUs employed, the inlet fluoride loading to the scrubber, and the fluoride content of the scrubbing liquid (pond water). The pond water concentration is important since it determines the minimum outlet FI concentration obtainable. NTUs are expressed by the following formula:

15289/02

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$$NTU = \ln [(Y1 - Yp)/(Y2 - Yp)]$$

where: Y1 = inlet concentration
Y2 = outlet concentration
Yp = equilibrium concentration of fluoride in scrubbing water

This equation can be rearranged as follows:

$$e^{NTU} = (Y1 - Yp)/(Y2 - Yp)$$

$$Y2 - Yp = (Y1 - Yp)/ e^{NTU}$$

$$Y2 = [(Y1 - Yp)/ e^{NTU}] - Yp$$

KBN has developed a spread sheet and graph based on this equation which shows the relationship between scrubber inlet fluoride concentration, scrubbing water fluoride concentration, NTUs, and fluoride removal efficiency. These are attached as Table 1 and Figure 1.

Several important observations can be made from these data. First, scrubber fluoride removal is limited by the pond water fluoride concentration. Theoretically, an outlet fluoride concentration lower than the vapor pressure exerted by the pond water cannot be achieved. In the data shown in Table 1, a pond water fluoride concentration of 8,000 ppm is assumed (based on Riverview pond water). At 100 deg. F temperature, the equilibrium fluoride concentration in air is 0.070 mg/dcf. Thus, the outlet fluoride concentration can never be less than 0.070 mg/dcf. Therefore, to adequately represent the true Fl removal capability of the system, an "adjusted removal efficiency" is presented in Table 1. This efficiency was calculated considering that the minimum achievable outlet concentration is 0.070 mg/dcf, as follows:

$$Fl \text{ removal efficiency} = [C_{in} - (C_{out} - 0.070)] / C_{in}] \times 100$$

The limitation on fluoride outlet concentration limits the fluoride removal efficiency achievable by the scrubber, regardless of the number of NTUs. This is shown in the table and graph, which clearly shows that the outlet fluoride loading asymptotically approaches 0.070 mg/dcf as the number of NTUs increases. Thus, there is no benefit in increasing the number of NTUs in the scrubbing system beyond a certain point (i.e., where little or no reduction in fluoride emissions occurs).

Test data from Cargill on phosphoric acid plant filters have reflected fluoride concentrations entering the scrubber in the range of 0.4 mg/acf. The scrubber water (pond water) at Riverview contains approximately 8,000 ppm fluorides at 100°F. The equilibrium concentration of fluorides at this concentration is 0.070 mg/acf (see attached graph). Therefore, the fluoride removal of the system can be calculated as shown in the second set of data in Table 1 (i.e., inlet fluoride loading of 0.400 mg/dcf). The calculations show that increasing the NTUs up to about 4 provides some benefit, but no benefit is obtained beyond 4 NTUs. Increasing the NTUs from 4 to 6 results in outlet fluoride



emissions being reduced from 0.46 lb/hr to only 0.43 lb/hr, and the removal efficiency increasing from 98.5 to 99.8 percent. As described above, the No. 3 Filter scrubber is designed to achieve approximately 6 NTUs and therefore a FI removal efficiency of 99.8 percent.

This analysis demonstrates that a packed bed section installed on the No. 3 Filter scrubber will have virtually no effect on fluoride emissions and is unnecessary (existing venturi scrubber provides at least 3 NTUs itself). However, Cargill will proceed with installing the packing in this scrubber, as described above and shown in the attached drawing, if the Department requires it.

2. The following is our response to the Hillsborough County Environmental Protection Commission (HCEPC) comments of November 2, 1995.

The EPA is currently in the process of developing MACT standards that would regulate hydrogen fluoride (HF) emissions from phosphoric acid plants. As part of this process, EPA is planning to regulate HF emissions by establishing a surrogate limit based on total fluoride emissions. Cargill expects that, when promulgated, the standards will apply to the phosphoric acid plants.

However, at this time, we have no data regarding HF emissions from the phosphoric acid plants. Further, we are not aware of any test data from any phosphoric acid plant that demonstrates the presence of HF. Cargill has investigated the possibility of testing various point sources for fluoride emissions for HF but has been unsuccessful in identifying an appropriate test method. Therefore, for purposes of the subject application, we have not identified any HAP emissions from the source. This is why, at present, we do not identify Cargill as a major source of HAPs. This aspect will be continued to be researched and clarified in the Title V application.

In regards to the comment regarding 40 CFR 61, Subpart R, it is pointed out that the Part 61 standards do not depend on HAP emissions; the standards regulate all sources described in the subpart (i.e., all phosphogypsum stacks located at phosphate fertilizer plants).

Thank you for consideration of these comments. Please call if you have any further questions concerning this requested permit change.

Sincerely,

David A. Buff

David A. Buff, P.E.
Principal Engineer
Florida P.E. #19011
DB/vjp

cc: B. Thomas, SWD
EPA
NPS
J. Campbell, EPAHC
C. Holladay, BAR
J. Reynolds, BAR

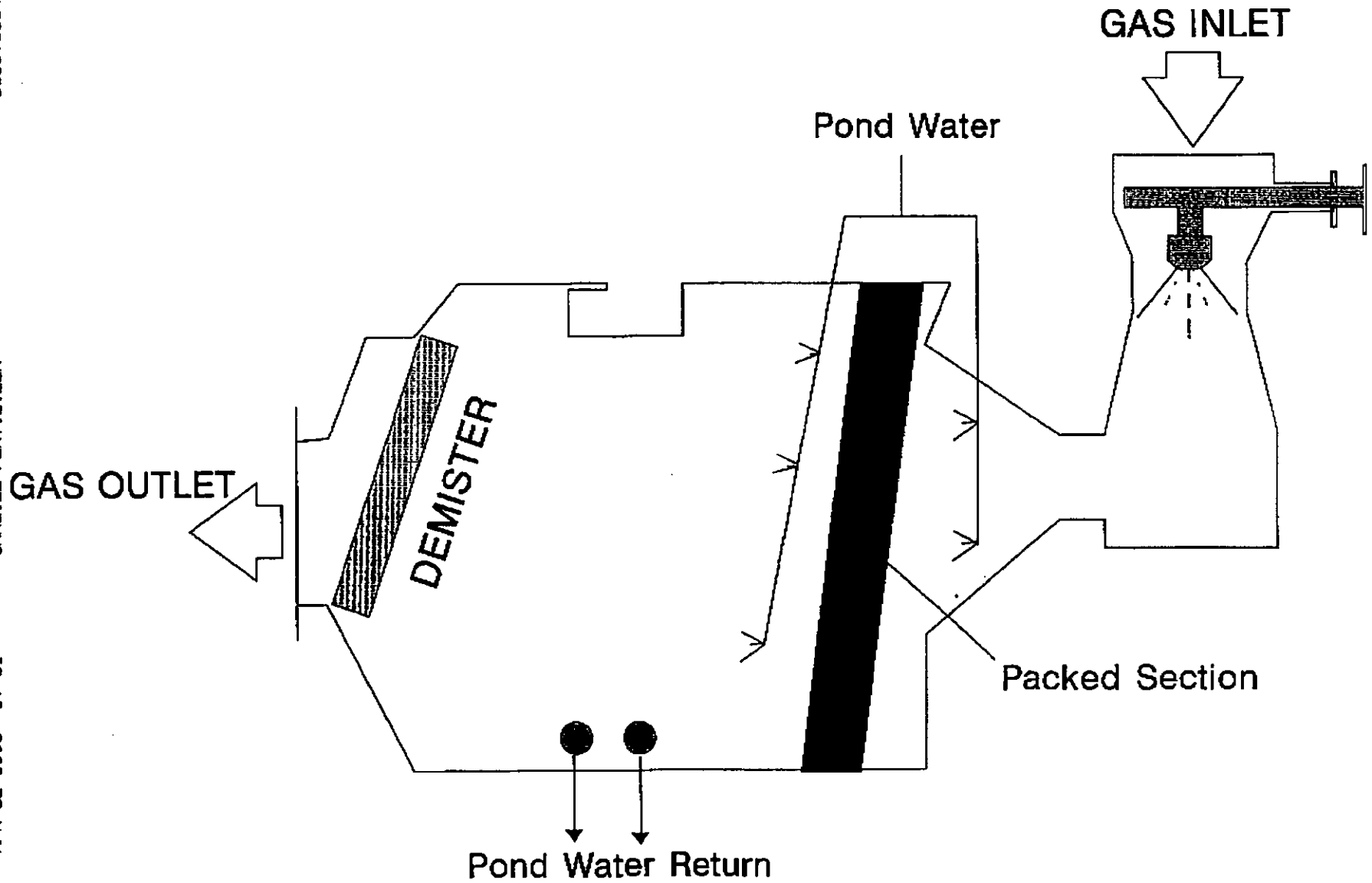
SEAL

cc: David Jellerson
Kathy Edgemon
File (2)

#3 FILTER SCRUBBER

8136716149 P.02/02

TOTAL P.02



RECEIVED 04/02 16:49 1996 AT 9043366603 PAGE 2 (PRINTED PAGE 2) J
CARGILL FERTILIZER APR-02-1996 17:01

Table 1. Calculation of FI Removal Efficiency Versus NTUs for Wet Scrubbing System

NTUs	Inlet Loading (mg/dcf)	Outlet FI Loading (mg/dcf)	Adjusted FI Removal Efficiency ^a	FI Emissions (lb/hr)
2	0.150	0.081	92.8%	0.49
3	0.150	0.074	97.3%	0.45
4	0.150	0.071	99.0%	0.43
6	0.150	0.070	99.9%	0.43
8	0.150	0.070	100.0%	0.43
10	0.150	0.070	100.0%	0.43
100	0.150	0.070	100.0%	0.43
2	0.400	0.115	88.8%	0.70
3	0.400	0.086	95.9%	0.53
4	0.400	0.076	98.5%	0.46
6	0.400	0.071	99.8%	0.43
8	0.400	0.070	100.0%	0.43
10	0.400	0.070	100.0%	0.43
100	0.400	0.070	100.0%	0.43
2	0.75	0.162	87.7%	0.99
3	0.75	0.104	95.5%	0.63
4	0.75	0.082	98.3%	0.50
6	0.75	0.072	99.8%	0.44
8	0.75	0.070	100.0%	0.43
10	0.75	0.070	100.0%	0.43
100	0.75	0.070	100.0%	0.43
2	1.000	0.196	87.4%	1.19
3	1.000	0.116	95.4%	0.71
4	1.000	0.087	98.3%	0.53
6	1.000	0.072	99.8%	0.44
8	1.000	0.070	100.0%	0.43
10	1.000	0.070	100.0%	0.43
100	1.000	0.070	100.0%	0.43
2	5.000	0.737	86.7%	4.48
3	5.000	0.315	95.1%	1.92
4	5.000	0.160	98.2%	0.97
6	5.000	0.082	99.8%	0.50
8	5.000	0.072	100.0%	0.44
10	5.000	0.070	100.0%	0.43
100	5.000	0.070	100.0%	0.43
2	10.000	1.414	86.6%	8.60
3	10.000	0.564	95.1%	3.43
4	10.000	0.252	98.2%	1.53
6	10.000	0.095	99.8%	0.58
8	10.000	0.073	100.0%	0.45
10	10.000	0.070	100.0%	0.43
100	10.000	0.070	100.0%	0.43

(representative of No. 3 Filter at Riverview)

^a Efficiency based on minimum achievable outlet loading equal to equilibrium air concentration of pond water.

Notes:

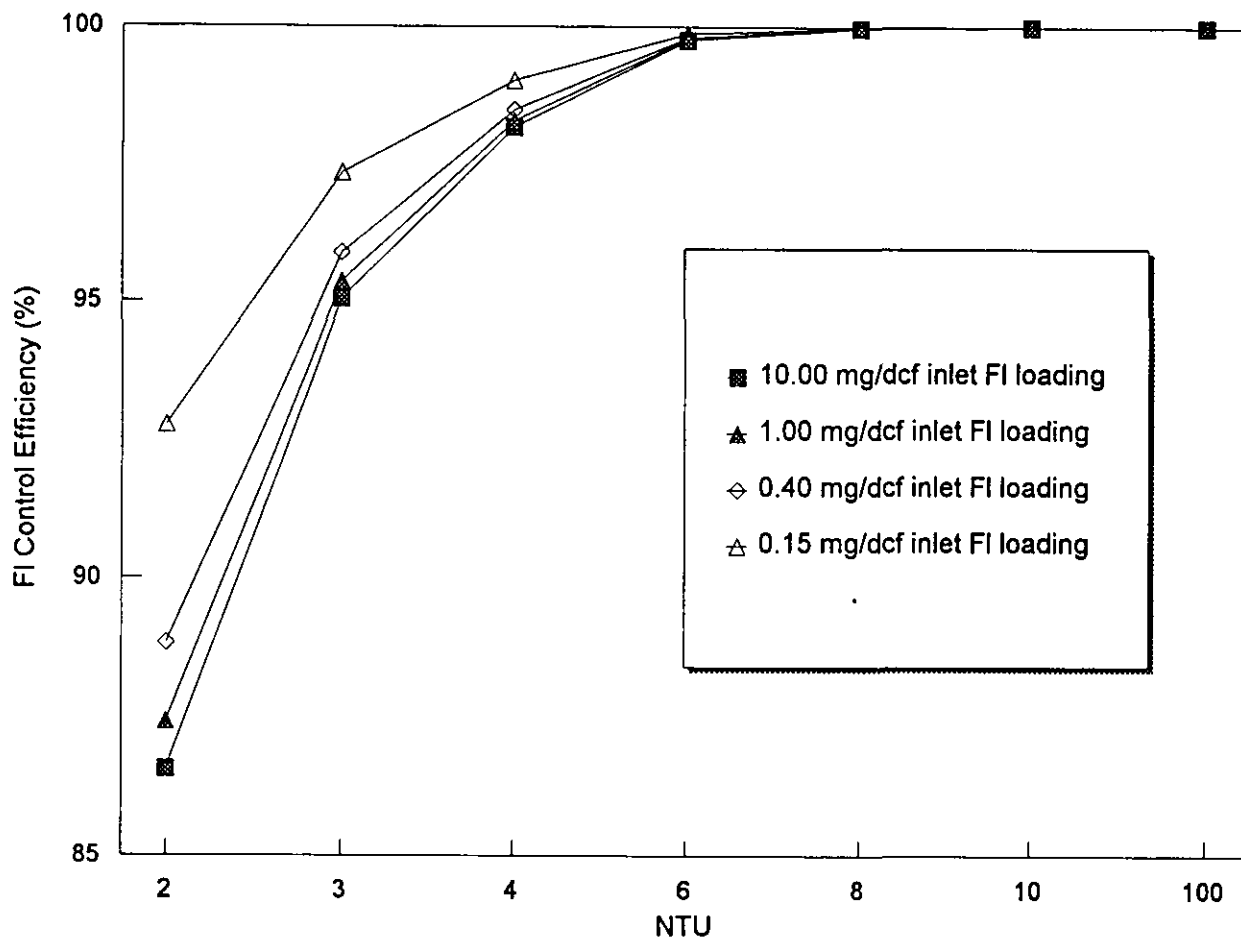
Equilibrium fluoride air concentration due to pond water @ 100 deg. F and 8,000 ppm FI = 0.070 mg/dcf

Stack exit conditions = 46,000 cfm, dry @ 100 deg. F

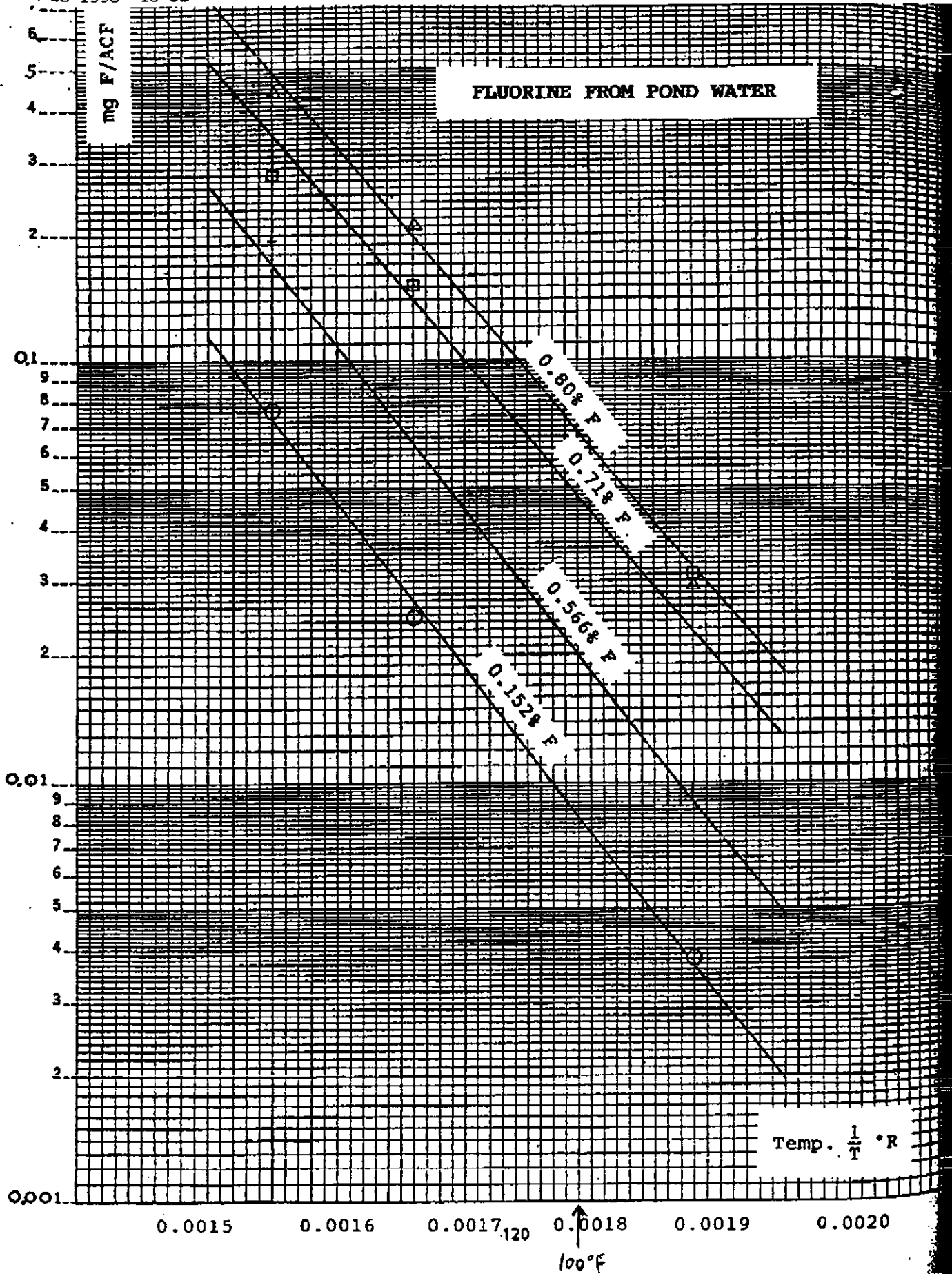
mg/dcf = milligrams per dry cubic feet

NTUs = number of transfer units = $\ln [(F_{in} - PW) / (F_{out} - PW)]$

Figure 1. Plot of Fluoride Removal Efficiency vs. NTUs
for a Wet Scrubbing System with Various Inlet Loadings



Assumes pond water fluoride concentration of 8,000 ppm





Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

January 11, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Kathy Edgemon
Environmental Engineer
Cargill Fertilizer, Inc.
8813 Highway 41 South
Riverview, Florida 33569

RE: Air Construction Permit Application PSD-FL-231/0570008-004-AC

Dear Ms. Edgemon:

The Department received your January 3 letter stating that it is Cargill's intention to install packing in the existing venturi scrubber for the No. 3 filter at the Riverview plant as a means of meeting BACT requirements for the subject permit application.

The news that Cargill plans to modify the existing scrubber to meet BACT requirements is well received. However, the Department must have an indication of exactly what the modification will entail and the design efficiency of the scrubber after the packing modification. This can be done by providing a sketch of the modified system and the scrubber vendor's performance guarantee or design calculations showing the fluoride removal efficiency.

Also needed is a response to the November 2 comments by the Environmental Protection Commission of Hillsborough County. This was requested in our November 28 letter. If there are any questions regarding the above, please contact me or John Reynolds at 904-488-1344.

Sincerely,

A. A. Linero, P.E.
Administrator
New Source Review Section
Bureau of Air Regulation

AAL/JR/t

cc: W. Thomas, SWD
J. Harper, EPA
J. Campbell, EPCHC
J. Bunyak, NPS
D. Buff, P.E., KBN

Z 127 633 143



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Kathy Edgemon	
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Riverview, FL	
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Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	
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PSD-FI-231	
057000E-004-AC	

PS Form 3800, March 1993

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Kathy Edgemon, EE
Cansil Fertilizer
8613 Hwy 41 South
Riverview, FL 33569

4a. Article Number
Z 127 633 143

4b. Service Type
 Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery
1-13-96 JH

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

5. Signature (Addressee)
Kathy Edgemon

6. Signature (Agent)
Ray Burr

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CARGILL FERTILIZER, INC.

8813 Highway 41 South - Riverview, Florida 33569 - Telephone 813-677-9111 - TWX 810-876-0648 - Telex 52666 - FAX 813-671-6146

Certified Mail: P 204 944 953

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JAN 09 1996

**BUREAU OF
AIR REGULATION**

January 3, 1996

Mr. Al Linero, P.E.
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Mr. Linero:

Re: Cargill Fertilizer, Inc. - Riverview Facility
Nos. 3 and 4 Phosphoric Acid Plants
PSD-FL-231 (0570008-004-AC)
E.S.A. 3.1

This letter is in response to the Department's letter dated November 28, 1995, regarding the above referenced permit application. The existing venturi scrubber installed for the No. 3 filter is capable of accommodating packing. It is Cargill's intention to install packing in this scrubber to meet BACT requirements upon receipt of the construction permit. If you have any questions please contact me at (813) 671-6369.

Sincerely,

Kathy Edgemon
Environmental Engineer

cc: Jellerson
Morris
Narrow
File P-204



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Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

November 28, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Karen Byram
Environmental Supervisor
Cargill Fertilizer, Inc.
8813 Highway 41 South
Riverview, Florida 33569

Dear Ms. Byram:

The Department received Cargill's response to our October 12 preliminary incompleteness letter on November 14 (PSD-FL-231). We cannot agree with Cargill's contention that the existing venturi scrubber installed for the No. 3 filter under a previous non-PSD permit should qualify alone as BACT technology without adding a packed secondary scrubber. This is not consistent with the BACT determination for the Bartow project, which states that either a packed scrubber or a venturi followed by a packed scrubber is required to meet BACT requirements.

The claimed 99.1% efficiency of the venturi scrubber must be discounted unless valid data from actual tests, conducted simultaneously on the scrubber inlet and outlet and witnessed by Department staff, can be presented to prove the claim. If you decide not to conduct such tests, please indicate how Cargill proposes to achieve the BACT efficiency range of 99.7 - 99.9% for filter emissions. Also, please address the enclosed comments submitted by the Environmental Protection Commission of Hillsborough County dated November 2.

If there are questions regarding the above, please contact me or John Reynolds at 904-488-1344.

Sincerely,

A. A. Linero, P.E.
Administrator
New Source Review Section
Bureau of Air Regulation

Enclosure
AAL/JR/t

cc: W. Thomas, SWD
J. Harper, EPA
D. Buff, P.E., KBN
J. Campbell, EPCHC
J. Bunyak, NPS

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3. Article Addressed to:
 Karen Bryan, Env. Sup.
 Casile Fertilizer, Inc
 8813 Hwy 41 South
 Riverview, FL 33569

4a. Article Number: **2 127 632 584**

4b. Service Type
 Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

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5. Signature (Addressee)
[Signature]

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6. Signature (Agent)

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2 127 632 584



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To: <i>Karen Bryan</i>	
Street: <i>Casile Fertilizer</i>	
P.O. State and Zip: <i>Riverview FL</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date of Delivery	
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TOTAL Postage & Fees	\$
Postmark or Date	<i>11-24-95</i>
<i>PSD-FI-231</i>	

PS Form 3800, March 1993



November 13, 1995

Mr. Al Linero, P.E.
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

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BUREAU OF
AIR REGULATION

Re: Cargill Fertilizer, Inc.
Riverview Nos. 3 and 4 Phosphoric Acid Plants
PSD-FL-231 (0570008-004-AC)

Dear Mr. Linero:

This letter is in response to the Department's letter dated October 12, 1995, regarding the above referenced permit application. Responses are provided below in the same order as presented in the Department's letter.

1. It is correct that the No. 3 Filter scrubber was not installed under a PSD construction permit. As a result, the scrubber was not required to meet BACT criteria. However, BACT determinations are case-by-case, and for modifications, consider the existing control technology and level of emissions achieved by the existing technology. The fact that a control device was installed under a non-PSD permit does not mean that the control technology cannot qualify as BACT for a subsequent modification.

It should also be considered that the Department recently issued a PSD permit for a new phosphoric acid filter at the Cargill Bartow facility which allows the installation of a scrubber identical to the No. 3 Filter scrubber at Riverview. Further, the Bartow BACT analysis resulted in a BACT fluoride emission limit for existing plant sections of 0.016 lb/ton P2O5. Cargill is proposing a maximum fluoride emission rate of 2.72 lb/hr, which is equivalent to 0.016 lb/ton P2O5 at the maximum production rate of 170.0 ton/hr P2O5. Thus, the Cargill proposal is consistent with the recently issued PSD permit and BACT determination for Bartow.

The design fluoride removal efficiency for each of the scrubbers associated with the Riverview phosphoric acid plant are as follows:

Teller packed bed scrubber: 99.7%

VESCOR Model 2155RL: 99.9%

Micro-Fab: 95%

Croll Reynolds Model 66-24V: 95%

VESCOR Replica: 99.1%

15289-0200

KBN ENGINEERING AND APPLIED SCIENCES, INC.

6241 Northwest 23rd Street,
Suite 500
Gainesville, Florida 32653-1500
904-336-5600 FAX 904-336-6603

5405 West Cypress Street,
Suite 215
Tampa, Florida 33607
813-287-1717 FAX 813-287-1716

1801 Clint Moore Road, Suite 105
Boca Raton, Florida 33487
407-994-9910
FAX 407-994-9393

7785 Baymeadows Way,
Suite 105
Jacksonville, Florida 32256
904-739-5600 FAX 904-739-7777

1616 'P' Street N.W., Suite 350
Washington, D.C. 20036
202-462-1100
FAX 202-462-2270



This information was presented in the original permit application for the third filter at Riverview in 1989.

The rationale behind the design of the VESCOR Replica scrubber and its lower efficiency was based on the lower inlet fluoride loading expected to the scrubber from the No. 3 Filter. The loading to the existing VESCOR scrubber was estimated at 63 mg/dry acf, while the loading to the new No. 3 Filter scrubber was estimated to be only 10 mg/dry acf. Therefore, the same level of control was not deemed necessary. Based on the estimated inlet concentrations and design efficiencies, the outlet fluoride concentration from both scrubbers was estimated to be the same, i.e., 0.09 mg/dry acf.

2. The current permit limit and NSPS limit is 0.02 lb/ton P₂O₅. This limit will not change with the proposed modification. However, maximum fluoride emissions will also not exceed 2.72 lb/hr, which equates to an effective limit of 0.016 lb/ton at the maximum P₂O₅ input rate of 170.0 TPH.
3. The additional phosphoric acid will be utilized to achieve the production rates reflected in the construction permits for the identified emission units. Since the identified emission units are under construction permits, they have already undergone regulatory review for the higher production rates. Therefore, these other emission units will not be affected by the proposed modification.
4. The Micro-Fab scrubber controls the phosphoric acid clarifier, and the Croll-Reynolds scrubber control the 300,000 gal acid tank. Both of these scrubbers exhibit extremely low fluoride emissions- less than 0.02 lb/hr for the clarifier and less than 0.001 lb/hr for the 300,000 gal tank, based on the most recent source tests. The very low fluoride emissions associated with these scrubbers do not warrant the costly source testing that would be required if the scrubbers had fluoride emission limits. Based on the extremely low emissions, these sources could be deemed to be insignificant by the Department, and exempt from permitting.

Thank you for consideration of these comments. Please call if you have any further questions concerning this requested permit change.

Sincerely,

David A. Buff

David A. Buff, P.E.
Principal Engineer
Florida P.E. #19011

DB/ejh

cc: David Jellerson
Kathy Edgemon
File (2)

cc: B. Thomas, SWD
J. Campbell, EPCHC
J. Harper EPA
J. Bunyak, NPS
J. Reynolds, BAR
C. Holladay, BAR

- S E A L

COMMISSION

DOTTIE BERGER
PHYLLIS BUSANSKY
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SANDRA WILSON

EXECUTIVE DIRECTOR

ROGER P. STEWART



ADMINISTRATIVE OFFICES, LEGAL &
WATER MANAGEMENT DIVISION
1900 - 9TH AVENUE
TAMPA, FLORIDA 33605
TELEPHONE (813) 272-5960
FAX (813) 272-5157

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TELEPHONE (813) 272-5788

WETLANDS MANAGEMENT DIVISION
TELEPHONE (813) 272-7104

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BUREAU OF
AIR REGULATION

November 2, 1995

Mr. John Reynolds
Division of Air Resources Management
Florida Department of Environmental
Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Cargill Fertilizer Phosphoric Acid Production Rate Increase
Application and Letter of Incompletion by Al Linero of October
12, 1995 (PSD-FL231/0570008-004-AC)

Dear Mr. Reynolds:

This operation was inspected recently and the phosphoric acid production was lower than currently permitted in A029-234447. The plant is also in compliance with the current permit. We have reviewed the above referenced letter and have no additional information to request.

We wish that you review the proposed NESHAP applicability for phosphoric acid manufacturing and include it in the permit, if appropriate. I have enclosed a copy of Liz Deken's memorandum regarding this subject. Also enclosed in a copy of Jewell A. Harper's (EPA) letter to Clair Fancy suggesting that the clarifiers, phosphoric acid tanks, and evaporator feed tanks at Cargill (formerly, Gardinier) not be subject to Subpart T (NSPS) requirements.

If you have any questions, please feel free to contact Carlos Gonzalez at (813) 272-5530 or Suncom 543-5530.

Sincerely,

Richard C. Kirby IV

Richard C. Kirby, IV, P.E.
Chief, Air Permitting Section

cc: Jerry Kissel, DEP-SW District

Enclosures

COMMISSION

DOTTIE BERGER
PHYLLIS BUSANSKY
JOE CHILLURA
CHRIS HART
JIM NORMAN
ED TURANCHIK
SANDRA WILSON

EXECUTIVE DIRECTOR

ROGER P. STEWART



ADMINISTRATIVE OFFICES, LEGAL &
WATER MANAGEMENT DIVISION
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TAMPA, FLORIDA 33605
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TELEPHONE (813) 272-5788

WETLANDS MANAGEMENT DIVISION
TELEPHONE (813) 272-7104

M E M O R A N D U M

DATE: October 13, 1995

TO: Carlos Gonzalez

FROM: Liz Deken 

SUBJECT: Cargill Fertilizer, Inc. - NESHAP Applicability Determination

PHOS ACID

I have reviewed the attached application for the above named facility. Phosphoric acid manufacturing is going to be covered by a MACT. The pollutant of concern is hydrogen fluoride and fluorides (particulate) may be used as a surrogate for emission limiting purposes. Since the application indicates they emit more than 10 tpy of fluorides, they do emit some hydrogen fluoride. There are no calculations for any HAP emissions in the application. The MACT for Phosphoric Acid Manufacturing category will cover wet process phosphoric acid plants, calciners, superphosphoric acid plants and purified phosphoric acid plants. The pollutant of concern is hydrogen fluoride for all sources except for purified acid plants and MIBK is the HAP for that source. Tanks and clarifiers are going to be included in the acid plant definition. The fertilizer rule will also cover GTSP and rock dryers. The rule has not been proposed yet but we should at least be requiring the facilities to quantify their HAP emissions especially if they have already triggered PSD review.

After reviewing the application there are some confusing rule cites. On page 10 of the application they cited the NESHAP in 40 CFR 61 subpart R which is for the phosphogypsum stack but they didn't acknowledge any HAP emissions. They also indicated that the facility is minor for HAPs but didn't provide any information (ie what sources are covered, what pollutants, emission estimates, etc). This should probably be addressed before issuing a permit.

Should you have any questions or need additional information just let me know.

COMMISSION

DOTTIE BERGER
PHYLLIS BUSANSKY
JOE CHILLURA
CHRIS HART
JIM NORMAN
ED TURANCHIK
SANDRA WILSON



ADMINISTRATIVE OFFICES, LEGAL &
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EXECUTIVE DIRECTOR

ROGER P. STEWART

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BUREAU OF
AIR REGULATION

November 2, 1995

Mr. John Reynolds
Division of Air Resources Management
Florida Department of Environmental
Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Cargill Fertilizer Phosphoric Acid Production Rate Increase
Application and Letter of Incompletion by Al Linero of October
12, 1995 (PSD-FL231/0570008-004-AC)

Dear Mr. Reynolds:

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We wish that you review the proposed NESHAP applicability for phosphoric acid manufacturing and include it in the permit, if appropriate. I have enclosed a copy of Liz Deken's memorandum regarding this subject. Also enclosed in a copy of Jewell A. Harper's (EPA) letter to Clair Fancy suggesting that the clarifiers, phosphoric acid tanks, and evaporator feed tanks at Cargill (formerly, Gardinier) not be subject to Subpart T (NSPS) requirements.

If you have any questions, please feel free to contact Carlos Gonzalez at (813) 272-5530 or Suncom 543-5530.

Sincerely,

Richard C. Kirby IV

Richard C. Kirby, IV, P.E.
Chief, Air Permitting Section

cc: Jerry Kissel, DEP-SW District

Enclosures



COMMISSION

DOTTIE BERGER
PHYLLIS BUSANSKY
JOE CHILLURA
CHRIS HART
JIM NORMAN
ED TURANCHIK
SANDRA WILSON



ADMINISTRATIVE OFFICES, LEGAL &
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TELEPHONE (813) 272-5530

WASTE MANAGEMENT DIVISION
TELEPHONE (813) 272-5788

WETLANDS MANAGEMENT DIVISION
TELEPHONE (813) 272-7104

EXECUTIVE DIRECTOR

ROGER P. STEWART

M E M O R A N D U M

DATE: October 13, 1995

TO: Carlos Gonzalez

FROM: Liz Deken *D*

PHOS ACID

SUBJECT: Cargill Fertilizer, Inc. - NESHAP Applicability Determination

I have reviewed the attached application for the above named facility. Phosphoric acid manufacturing is going to be covered by a MACT. The pollutant of concern is hydrogen fluoride and fluorides (particulate) may be used as a surrogate for emission limiting purposes. Since the application indicates they emit more than 10 tpy of fluorides, they do emit some hydrogen fluoride. There are no calculations for any HAP emissions in the application. The MACT for Phosphoric Acid Manufacturing category will cover wet process phosphoric acid plants, calciners, superphosphoric acid plants and purified phosphoric acid plants. The pollutant of concern is hydrogen fluoride for all sources except for purified acid plants and MIBK is the HAP for that source. Tanks and clarifiers are going to be included in the acid plant definition. The fertilizer rule will also cover GTSP and rock dryers. The rule has not been proposed yet but we should at least be requiring the facilities to quantify their HAP emissions especially if they have already triggered PSD review.

After reviewing the application there are some confusing rule cites. On page 10 of the application they cited the NESHAP in 40 CFR 61 subpart R which is for the phosphogypsum stack but they didn't acknowledge any HAP emissions. They also indicated that the facility is minor for HAPs but didn't provide any information (ie what sources are covered, what pollutants, emission estimates, etc). This should probably be addressed before issuing a permit.

Should you have any questions or need additional information just let me know.



7d

Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

October 12, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Karen Byram
Environmental Supervisor
Cargill Fertilizer, Inc.
8813 Highway 41 South
Riverview, Florida 33569

RE: PSD-FL-231 (0570008-004-AC)/Production Rate Increase for
Phosphoric Acid Plants 3 & 4 from 139 to 170 TPH P205

Dear Ms. Byram:

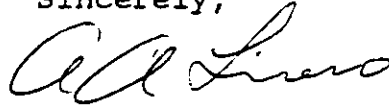
This is a request for additional information concerning your application received on September 26, 1995. Due to our permitting workload, the air quality impact section of the application (modeling) will not be reviewed until later this month, so, in order to allow you additional time to develop your responses, we are forwarding this request in advance of our modeling analysis. Therefore, the following is a preliminary list of items needed:

1. No changes are proposed for the existing scrubbers. This poses a problem for a PSD-BACT application since your existing control system for the No. 3 filter consists of a low energy venturi that is not integrated with or followed by a packed bed scrubber. It appears that the Vescor Replica scrubber was installed under a previous non-PSD construction permit. It would not be considered as best available control technology for a phosphoric acid filter due to its very limited mass transfer capability. A low energy venturi would be acceptable for those relatively insignificant fluoride sources such as tanks and hotwells, however. Please revise the application accordingly and indicate the fluoride removal efficiency for each scrubber listed in Tables 3-1 and 3-2.
2. Please explain the inconsistency between the requested allowable fluoride emission rate of 0.02 lb/ton P205 cited on page 28 and the 0.016 lb/ton P205 listed on page A-14.
3. Please explain how the facility has already been able to "reflect this increase in phosphoric acid production" in its other permits (statement on page A-6).
4. Please explain Cargill's contention that the Micro-Fab and Croll-Reynolds scrubbers should not be included in the permit in view of the fact that BACT requirements may supersede the NSPS (Subpart T) applicability restrictions.

Ms. Karen Byram
October 12, 1995
Page Two

If there are any questions concerning these preliminary incompleteness items, please contact me or John Reynolds at 904-488-1344.

Sincerely,



A. A. Linero, P.E.
Administrator
New Source Review Section
Bureau of Air Regulation

AAL/JR/t

c: W. Thomas, SWD
J. Campbell, EPCHC
J. Harper, EPA
J. Bunyak, NPS

Z 127 632 543



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PS Form 3800, March 1993

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Cargill Fertilizer, Inc.	
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Roverview, Florida 33569	
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Ms. Karen Byram
Environmental Supervisor
Cargill Fertilizer, Inc.
8813 Highway 41 South
Roverview, Florida 33569

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Z127 632 543

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Karen Byram

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