



# CARGILL FERTILIZER, INC.

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

Certified Mail: Z 426 769 217

RECEIVED  
FEB 29 2000  
BUREAU OF AIR REGULATION

February 25, 2000

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

Dear Mr. Linero:

Re: Cargill Fertilizer - Riverview Facility  
AFI Plant; Permit No. 0570008-028-AC (PSD-FL-234A) 234B

0570008-032-AC

This letter serves as a response to your letter dated January 18, 2000, with the responses ordered as the questions were in your letter.

1. Please see attached table.
2. We request that the permit be modified as follows:

***Specific Condition 4:***

*Unless the Department determines that the initial scrubber performance test data justify a higher limit, total fluoride emissions from the AFI plant shall not exceed 0.50 lb/batch-hr and 4.30 TPY based on 281,050 tons AFI/year and 15,768 batch-hours per year (projection based on 90% operating factor) or 7,884 double batch-hours/year while operating with the batch defluorination process and shall not exceed 1.0 lb/hr and 4.30 TPY while operating with the continuous defluorination process. Since the duct configuration is not appropriate for a scrubber inlet test to be done, the fluoride scrubber design requirement shall be that the minimum capability of 8.0 mass transfer units be attested to by the scrubber manufacturer in writing. Compliance with the mass transfer requirement shall be determined by the Bureau of Air Regulation in Tallahassee based on calculations using test data. If the scrubber achieves an average of 8.0 mass transfer units using normal pond water, the Department shall consider the tests as successful and shall adjust the fluoride emission limit as appropriate. [Rule 62-212.400, F.A.C.]*

3. Testing for the purpose of establishing an emissions limitation will need to be conducted over an extended period of time in order to capture all variations of data. During a period of one year there are fluctuations in the weather and production rates of the facility. A test will be conducted once every three-month period of operating continuous defluorination at a minimum. Conducting four tests during a period of one year would give ample opportunity to collect additional data in the case that wide fluctuations of emissions are seen. The following is the requested proposed fluoride test protocol and schedule for a continuous defluorination process. We request that the permit be modified as follows:



**Specific Condition 9:**

*Before this construction permit expires, and annually thereafter, the subject emissions units shall be tested for compliance with the above emission limits. The initial performance tests for the fluoride scrubber during a batch process shall consist of a three-run test during a double-batch beginning within one hour of the start of the second batch. Performance testing of the continuous defluorination process will be conducted for a period of one year beginning within 30 days of completion of construction with a minimum of three tests being conducted. Test reports will be submitted to the Department and the EPC within 45 days of each test date. At the end of the one-year period, if appropriate, a request for a permit modification along with a summary of the test results will be submitted to the Department. For the duration of all tests the emission units shall be operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then the emission unit may be tested at less than permitted capacity (i.e., 90% of the maximum operating rate allowed by the permit). In this case, subsequent emission unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emission unit is so limited, then operation at higher capacities is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to regain the permitted capacity in the permit. [Rule 62-297.310, F.A.C.]*

If you have any questions please call me at (813) 671-6369 or email me at [kathy\\_edgemon@cargill.com](mailto:kathy_edgemon@cargill.com).

Sincerely,



Kathy Edgemon  
Environmental Superintendent

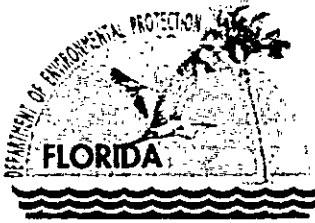
cc: Jellerson  
Rick Kirby, HCEPC  
File P-30-39-1

cc: J. Reynolds, BAE  
SWD  
EPA  
NPS  
Buff, Halder assoc



**Cargill Defluorination Scrubber**  
**PN 1320**  
**17-Feb-00**

Table 1 Calculated F emissions		Hour	Batch								Total lb/day	Continuous		
			1	2	3	4	5	6	7	8		9+	Hourly	Total lb/day
Air out		acfm	20000	20000	20000	20000	20000	20000	20000	20000	20000		20000	
Air density		lb/ft <sup>3</sup>	0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.063		0.063	
Air flow		lb mol / min	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4		43.4	
Inlet fluorine		lb/h	2568	2054	1712	1369	1027	1027	1027	1027	332	17117	713	17117
		lb mol / min	2.25	1.80	1.50	1.20	0.90	0.90	0.90	0.90	0.29		0.63	
Pond water		gpm	500	500	500	500	500	500	500	500	500		500	
	F content	ppm F	0.90%	0.90%	0.90%	0.90%	0.90%	0.90%	0.90%	0.90%	0.90%		0.90%	
	Temp	°F	95	95	95	95	95	95	95	95	95		95	
NOG			8	8	8	8	8	8	8	8	8		8	
Fluorine in	Y1	lb mol / lb mol air	0.051838	0.041471	0.034559	0.027647	0.020735	0.020735	0.020735	0.020735	0.006696		0.01440	
Equilibrium	Ye	lb mol / lb mol air	3.31E-06	3.31E-06	3.31E-06	3.31E-06	3.31E-06	3.31E-06	3.31E-06	3.31E-06	3.31E-06		3.31E-06	
	Ye	mg /acfm	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062		0.062	
Fluorine out	Y2	lb mol / lb mol air	2.07E-05	1.72E-05	1.49E-05	1.26E-05	1.03E-05	1.03E-05	1.03E-05	1.03E-05	5.56E-06		8.1E-06	
Entrainment		lb	1.03	0.85	0.74	0.62	0.51	0.51	0.51	0.51	0.28		0.40	
Total F out		lb	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23		0.23	
		lb	1.25	1.08	0.96	0.85	0.73	0.73	0.73	0.73	0.50	15.1	0.63	15.1
Efficiency			99.96%	99.96%	99.96%	99.95%	99.95%	99.95%	99.95%	99.95%	99.92%	99.91%	99.94%	99.91%



Jeb Bush  
Governor

# Department of Environmental Protection

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

David B. Struhs  
Secretary

February 16, 2000

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

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

Re: DEP File No. 0570008-032-AC (PSD-FL-234B)  
Riverview Animal Feed Plant (AFI) - Modification from Batch to Continuous Process

Dear Ms. Edgemon:

The Bureau of Air Regulation reviewed the incompleteness information received on February 14 and found that further information is required. The new incompleteness items are listed below:

1. Cargill's letter dated February 11 refers to an attachment that was not included with the letter. Please submit the attachment for review. (Rule 62-4.070, F.A.C.)
2. Cargill's proposed language for Specific Condition No. 4 does not include the existing batch fluoride emission limit of 0.50 lb./batch-hour. Permits must contain hourly limits in addition to annual emission limits. The current batch-hours should be revised to reflect the newly projected hours of batch operation and the annual hours for non-batch (continuous) operation. (Rule 62-4.070, F.A.C.)
3. The proposed fluoride test protocol/schedule for the continuous process should state the rationale for the requested one-year test period and explain how the three tests will be spread out over this period and what criteria will be used for determining when to test. Also, the Bureau of Air Regulation will need to review the complete test reports rather than just a summary of test results. (Rule 62-4.070, F.A.C.)

If there are any questions regarding the above, please call John Reynolds at 850/921-9536.

Sincerely,

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

AAL/JR

cc: Bill Thomas, SWD  
Rick Kirby, EPCHC  
Gregg Worley, EPA  
John Bunyak, NPS

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<p><b>SENDER:</b></p> <ul style="list-style-type: none"> <li>■ Complete items 1 and/or 2 for additional services.</li> <li>■ Complete items 3, 4a, and 4b.</li> <li>■ Print your name and address on the reverse of this form so that we can return this card to you.</li> <li>■ Attach this form to the front of the mailpiece, or on the back if space does not permit.</li> <li>■ Write "Return Receipt Requested" on the mailpiece below the article number.</li> <li>■ The Return Receipt will show to whom the article was delivered and the date delivered.</li> </ul>	<p>I also wish to receive the following services (for an extra fee):</p> <p>1. <input type="checkbox"/> Addressee's Address</p> <p>2. <input type="checkbox"/> Restricted Delivery</p> <p>Consult postmaster for fee.</p>
<p>3. Article Addressed to:</p> <p>Ms. Kathy Edgemon, ES  Carroll Fertilizer  8813 Hwy 41 South  Riverview, FL  33569</p>	<p>4a. Article Number</p> <p>2031 391 863</p> <p>4b. Service Type</p> <p><input type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified</p> <p><input type="checkbox"/> Express Mail <input type="checkbox"/> Insured</p> <p><input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> COD</p>
<p>5. Received By: (Print Name)</p> <p>KATHY E. SMITH</p>	<p>7. Date of Delivery</p> <p>2/17/00</p>
<p>6. Signature: (Addressee or Agent)</p> <p><i>Kathy E. Smith</i></p>	<p>8. Addressee's Address (Only if requested and fee is paid)</p>

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<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>		
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<i>0570008-032-AC 2-15-00</i>			
<i>PSD-FL-234B</i>			

PS Form 3800, April 1995



**CARGILL  
FERTILIZER, INC.**

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FEB 14 2000

**BUREAU OF AIR REGULATION**

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

Certified Mail: Z 426 769 211

February 11, 2000

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

Dear Mr. Linero:

032

Re: Cargill Fertilizer - Riverview Facility  
AFI Plant; Permit No. 0570008-028-AC (PSD-FL-234A) 2340

This letter serves as a response to your letter dated January 18, 2000, with the responses ordered as the questions were in your letter.

1. The amount of fluoride in the phosphoric acid that is available for removal will not be affected by the process used for defluorination. Continuous defluorination will evolve fluoride steadily rather than sporadically as in the batch process. Attached please find a calculation comparing emissions from the batch process to emissions from the continuous process. These calculations show that total F emissions will not increase. As was found during testing of the existing system, actual emissions can be expected to vary from calculated emissions. We request that the permit be modified as follows:

**Specific Condition 4:**

*Unless the Department determines that the initial scrubber performance test data justify a higher limit, total fluoride emissions from the AFI plant shall not exceed 4.30 TPY based on 281,050 tons AFI/year and 15,768 batch-hours per year (projection based on 90% operating factor) or 7,884 double batch-hours/year while operating with the batch defluorination process. The emissions limit while operating with the continuous defluorination process will be determined according to the testing protocol in Specific Condition 9. Since the duct configuration is not appropriate for a scrubber inlet test to be done, the fluoride scrubber design requirement shall be that the minimum capability of 8.0 mass transfer units be attested to by the scrubber manufacturer in writing. Compliance with the mass transfer requirement shall be determined by the Bureau of Air Regulation in Tallahassee based on calculations using test data. If the scrubber achieves an average of 8.0 mass transfer units using normal pond water, the Department shall consider the tests as successful and shall adjust the fluoride emission limit as appropriate. [Rule 62-212.400, F.A.C.]*

2. The following is the requested proposed fluoride test protocol and schedule for a continuous defluorination process. We request that the permit be modified as follows:



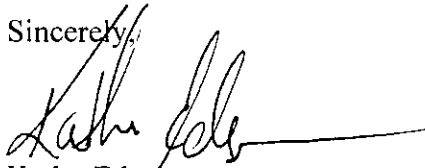
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**Specific Condition 9:**

*Before this construction permit expires, and annually thereafter, the subject emissions units shall be tested for compliance with the above emission limits. The initial performance tests for the fluoride scrubber during a batch process shall consist of a three-run test during a double-batch beginning within one hour of the start of the second batch. Performance testing of the continuous defluorination process will be conducted for a period of one year beginning within 30 days of completion of construction with a minimum of three tests being conducted. Test reports will be submitted to the EPC within 45 days of each test date. At the end of the one-year period, a request for a permit modification along with a summary of the test results will be submitted to the Department. For the duration of all tests the emission units shall be operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then the emission unit may be tested at less than permitted capacity (i.e., 90% of the maximum operating rate allowed by the permit). In this case, subsequent emission unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emission unit is so limited, then operation at higher capacities is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to regain the permitted capacity in the permit. [Rule 62-297.310, F.A.C.]*

If you have any questions please call me at (813) 671-6369 or email me at [kathy\\_edgemon@cargill.com](mailto:kathy_edgemon@cargill.com).

Sincerely,



Kathy Edgemon  
Environmental Superintendent

cc: Jellerson  
Rick Kirby, HCEPC  
File ~~P-10-7~~ P-30-39-1

cc: J. Reynolds, BTR  
JWD  
EPA  
NPS  
Buff, Golden Assoc.





Jeb Bush  
Governor

# Department of Environmental Protection

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

David B. Struhs  
Secretary

January 18, 2000

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. David B. Jellerson, P.E.  
Environmental Manager  
Cargill Fertilizer, Inc.  
8813 Highway 41 South  
Riverview, Florida 33569

Re: DEP File No. 0570008-032-AC (PSD-FL-234B)  
Riverview Animal Feed Plant (AFI) - Modification from Batch to Continuous Process

Dear Mr. Jellerson:

The Bureau of Air Regulation reviewed the referenced application received on December 20 and found that additional information is required. The completeness items are listed below.

1. Since the conversion of the process from batch to continuous will involve different reaction rate constants and therefore potentially different instantaneous emission rates, testing should be conducted to establish the average fluoride emission rates following the conversion, with final emission limits established based on those results. The test data for the batch process showed considerable variation in fluoride emission rates with time. Therefore the Department requires more information on how instantaneous emissions will be affected before issuing a final permit modification. Please advise if Cargill would agree to do special testing following the conversion so that the new hourly fluoride emission profile can be established (Rule 62-4.070, F.A.C.).
2. Please submit a proposed fluoride test protocol and schedule pursuant to Item 1 above (Rule 62-4.070, F.A.C.).

If there are any questions regarding the above, please call John Reynolds at 850/921-9536.

Sincerely,

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

AAL/JR

cc: Gregg Worley, EPA  
John Bunyak, NPS  
Bill Thomas, SWD  
Rick Kirby, EPCHC  
David Buff, Golder Assoc.



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3. Article Addressed to:  
 David B. Jellerson, PE  
 Environmental Mgr  
 Cargill Fertilizer, Inc  
 8813 Hwy 41 South  
 Riverview, FL 33569

4a. Article Number  
 Z 031 391 919

4b. Service Type  
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1 Receipt

Z 031 391 919

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**Receipt for Certified Mail**  
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TOTAL Postage & Fees	\$
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	0570008-032-AC
	PSD-FI-334B

PS Form 3800, April 1995



**CARGILL  
FERTILIZER, INC.**

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DEC 20 1999

BUREAU OF AIR REGULATION

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

December 17, 1999

**Certified Mail: Z 426 769 165**

Mr. Al Linero, PE  
New Source Review Section  
Florida Department of Environmental Protection  
2600 Blair Stone Road  
Tallahassee, FL 32399-2400

RE: Cargill Fertilizer, Inc.  
Animal Feed Ingredient Plant Modification  
Permit No. 0570008-028-AC/PSD-FL-234A

0570008-028-AC  
PSD-FL-234B

Dear Al,

This letter is to request a modification to the above-referenced construction permit issued by your office on June 8, 1999.

As currently operated, the defluorination process for this AFI plant is a batch process with the capability of running two simultaneous batches. As part of the current modifications to the plant, we wish to revise the construction permit to allow the defluorination process to be operated in a continuous mode.

With the existing batch process arrangement, fluoride emissions are restricted to 0.50 lb/batch-hr and 4.30 TPY. With a continuous defluorination mode, emissions would be continue to be restricted to 4.30 TPY with a limit of 0.03 lb/ton AFI to reflect that the continuous rate is equivalent to the two simultaneous batches currently allowed. This 0.03 pounds fluoride per ton AFI produced is based on an emission rate of 1 pound per hour (equivalent to two batches) and a maximum production of 281,050 tons AFI per year.

This proposed change only requires a simple change to the piping configuration. This can be accomplished during the ongoing construction activities being conducted in accordance with the existing construction permit. This arrangement will enable the process to be operated in either continuous or batch mode to allow for operational flexibility.

In order to accommodate the proposed change, we request that the permit be modified as follows (changes are underlined for your convenience):

***Specific Condition 4:***

*Unless the Department determines that the initial scrubber performance test data justify a higher*



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*limit, total fluoride emissions from the AFI plant shall not exceed 0.50 lb./batch-hr or 0.03 lb/ton AFI (during continuous defluorination) and 4.30 TPY based on 281,050 tons AFI/year and 15,768 batch-hours per year (projection based on 90% operating factor) or 7,884 double batch-hours/year. Since the duct configuration is not appropriate for a scrubber inlet test to be done, the fluoride scrubber design requirement shall be that the minimum capability of 8.0 mass transfer units be attested to by the scrubber manufacturer in writing. Compliance with the mass transfer requirement shall be determined by the Bureau of Air Regulation in Tallahassee based on calculations using test data. If the scrubber achieves an average of 8.0 mass transfer units using normal pond water, the Department shall consider the tests as successful and shall adjust the fluoride emission limit as appropriate. [Rule 62-212.400, F.A.C.]*

**Specific Condition 9:**

*Before this construction permit expires, and annually thereafter, the subject emissions units shall be tested for compliance with the above emission limits. The initial performance tests for the fluoride scrubber shall be conducted during both batch and continuous defluorination modes of operation. The test conducted during the batch mode shall consist of a three-run test during a double-batch beginning within one hour of the start of the second batch. For the duration of all tests the emission units shall be operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then the emission unit may be tested at less than permitted capacity (i.e., 90% of the maximum operating rate allowed by the permit). In this case, subsequent emission unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emission unit is so limited, then operation at higher capacities is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to regain the permitted capacity in the permit. [Rule 62-297.310, F.A.C.]*

As indicated above, this change to the project description will not result in any additional emissions. The permitting review and BACT analysis conducted by the Department in developing the permit will assure effective control of process emissions. Therefore, we request that the permit be modified to reflect the revised project scope.

Should you have any questions or require additional information, please feel free to contact me.

Sincerely,



David B. Jellerson, P.E.  
Environmental Manager

CC: J. Reynolds, BAR