

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: 7000 0520 0014 8871 3725

April 27, 2001

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APR 30 2001

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

BUREAU OF AIR REGULATION

Dear Mr. Linero:

Re: Cargill Fertilizer - Riverview Plant Expansion
DEP File No. 0570008-036-AC; PSD-FL-315

This letter serves as a response to the letter from the Department dated April 11, 2001 in reference to the Riverview Plant Expansion project. The following is additional information requested, numbered as appeared in your letter:

1. Cargill Fertilizer (Cargill) proposed BACT limits of 3.5 lb SO₂/ton H₂SO₄ (24-hour average) for the Nos. 8 and 9 Sulfuric Acid Plants and 0.0135 lb F/ton P₂O₅ for the Phosphoric Acid Plants. Cargill can accept the Department's proposed F limit of 0.012 lb F/ton P₂O₅, but has the following concerns regarding the Department's proposed SO₂ limit of 3.5 lb SO₂/ton H₂SO₄ three hour average:
 - ◇ Cargill is not proposing a plant expansion for the Nos. 8 and 9 Sulfuric Acid Plant. The only physical modifications proposed are to ensure that all sulfuric acid plants at the Riverview Facility operate with a 3.5 lb SO₂/ton H₂SO₄ (24-hour average). Removing the combined production limitation will only allow Cargill to operate both plants at their current demonstrated capacities, typically during periods when both plants are at the beginning of their turnaround cycle. Furthermore, there is no measurable emission benefit of operating with a 3.5 lb SO₂/ton H₂SO₄ (3-hour average) limit as opposed to 3.5 lb SO₂/ton H₂SO₄ (24-hour average). In fact, operating with a limit of 3.5 lb SO₂/ton H₂SO₄ (3-hour average) is likely to cause more plant shutdowns due to upsets, thereby possibly increasing actual annual emissions. Operating with an emission limit of 3.5 lb SO₂/ton H₂SO₄ (24-hour average) decreases the number of shutdowns that will be experienced due to plant fluctuations, resulting in plants that operate in an increasingly steady manor, an overall benefit to the environment.
 - ◇ The Department's letter referenced the BACT for SO₂ emissions that was set for the US Agrichem (USAg) facility at 3.5 lb SO₂/ton H₂SO₄ (3-hour average). This BACT was



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apparently achieved with an increased catalyst loading in the plants. The design of these sulfuric acid plants and the equipment sizing in these facilities are not equivalent to the sulfuric acid plants that are operating at Cargill's Riverview facility. Therefore, these are not comparable projects.

- ◇ Cargill's projections for spending and production are based on a limit of 3.5 lb SO₂/ton H₂SO₄ on a 24-hour average basis. Imposition of a 3.5 lb SO₂/ton H₂SO₄ (3-hour average) emission limit would require further modifications and reduced production rates as well as an associated decrease in electrical energy production. The additional modifications were proposed as \$400,000 in a Golder Associates, Inc. letter to the Department dated March 23, 2001. This would increase annual costs by \$44,000/yr. Additional costs in lost opportunities are estimated to be \$1,440,000 per year based on lost energy and production resulting from the increased number of startups (estimated at 1/month). These costs are not expected to decrease the actual annual SO₂ emissions from either plant, therefore the cost per ton cannot be calculated. Additionally, these costs may not be comprehensive to achieve the emission limit of 3.5 lb SO₂/ton H₂SO₄ (3-hour average). It is likely that major equipment in the plants will need to be replaced or modified to compensate for increased pressure drop, adding additional significant costs.
- ◇ The test data submitted for the No. 9 plant was lower than 3.5 lb SO₂/ton H₂SO₄. This test was conducted immediately following a turnaround and is not representative to normal operation throughout a turnaround cycle. Since that time, the No. 9 plant has been operating at higher emission rates as seen in the attached CEM data. This plant is expected to maintain 3.5 lb SO₂/ton H₂SO₄ (24-hour average) until the end of the turnaround cycle, but would require additional modifications and/or reduced sulfuric acid and energy production rates to obtain 3.5 lb SO₂/ton H₂SO₄ (3-hour average).
- ◇ There is also a concern about achieving this lower emission rate during plant startups. Currently, even the No. 9 plant is not able to achieve 3.5 lb SO₂/ton H₂SO₄ within 3 hours of each startup (see attached CEM data). Imposition of the shorter averaging time will result in additional plant start ups in order to comply with the established "Memorandum of Understanding Regarding Best Operational Start-up Practices for Sulfuric Acid Plants" as contained in the facility Title V operating permit. Under these established requirements, the unit is required to be within the permitted emission rate within 3-hours of initiation of a start up. Our extensive experience has shown that compliance with this condition requires very strict adherence to operating guidelines in order to attain the existing 4 lb SO₂/ton H₂SO₄ limit within 3 hours of startup. Reduction of the limit on a 3-hour basis will inevitably have two consequences. Both resulting in additional emissions. First, the unit will be required to burn additional fossil fuel in order to increase catalyst temperatures prior to initiation of a cold start up. Emissions from the fossil fuel combustion will not provide any production value. Second, the likelihood of a start-up not achieving the established emission limit within the 3-hour time limit will increase. In accordance with the Best Practices, this will require

that the operators cease the start-up procedure, make adjustments to the plant and then re-initiate the start-up process from the beginning with a new 3-hour window. Hence, the total start up duration and total start up excess emissions will increase.

- ◇ The limit of 3.5 lb SO₂/ton H₂SO₄ (3-hour average) vs. a limit of 3.5 lb SO₂/ton H₂SO₄ (24-hour average) will not result in a significant reduction in SO₂ emissions from the facility. In fact, neither the emission estimates nor the ambient air quality impact analysis will change with the imposition of the shorter averaging time.
 - ◇ The No. 7 Sulfuric Acid Plant currently has a 3.5 lb SO₂/ton H₂SO₄ (24-hour average) limit for the past year. A lead operator working in a central control room is responsible for controlling all three sulfuric acid plants. This task becomes increasingly more difficult with multiple emission limits and increases the workload and stress on the operating crew.
2. The project to decrease emissions at the No. 8 Sulfuric Acid Plant consists of adding an approximate volume of 60,000 liters of conventional catalyst. The project to decrease No. 9 Sulfuric Acid Plant emissions consists of replacing an approximate volume of 80,000 liter of conventional catalyst with Cesium promoted catalyst. To obtain the limit of 3.5 lb SO₂/ton H₂SO₄ (3-hour average) would require the addition of over 30,000 liters of Cesium promoted catalyst along with other possible physical modifications which will result in reduced production of the facilities due to increased pressure drop. Alternatively, the plant will have to be operated at lower production rates to prevent routine fluctuations from affecting the short-term average emissions. In either case, the reduced production on an ongoing basis will likely negate the modest production gains achieved from elimination of the combined production cap of 5,700 tons per day for the two units.
 3. Nos. 8 and 9 Sulfuric Acid Plants are currently operating at their maximum production capabilities. This project will not allow them to operate at a higher process rate, rather will allow the two plants to operate at their current demonstrated maximum production capabilities simultaneously. Therefore, there will be no effect the efficiency of the absorbers or the mist eliminators.
 4. See attached production information. Note the number of days that the facility operated at maximum production rate is also included.
 5. The baghouse serving the GTSP Truck Loading station is designed with an air-to-cloth ratio of 5:1. This should be adequate to achieve an outlet dust grain loading of 0.012 gr/dscf or less, which is the BACT limit for similar sources with baghouses.
 6. NSPS requirements in Subpart W include the daily measurement of P₂O₅ input, monitoring of pressure drop across the scrubbers continuously, and meeting a F limit of 0.20 lb/ton P₂O₅ input. All of these requirements are currently being met with the exception of the daily

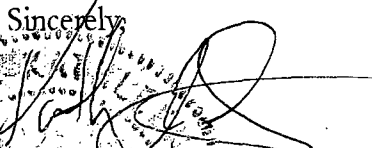
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measurement of P2O5 input, which will be accomplished with this project.

7. The project to modify the existing No. 5 DAP Plant is not a production increase, but rather an energy efficiency project. Accepting a BACT limit of 0.041 lb F/ton P2O5 input (3.1 lb/hr) in lieu of the proposed 3.3 lb F/hr would require modifications to the scrubbing system for a minor emissions reduction. These modifications are estimated at \$200,000 or \$68,000/ton F removed.

If you have any questions, please call me at (813) 671-6369 or email me at kathy_edgemon@cargill.com.

Sincerely,


Kathy Edgemon, P.E.
Environmental Superintendent
Florida P.E. # 55975

cc: Jellerson

EPCHC, Alice Harman, P.E. (CERTIFIED MAIL: 7000 0520 0014 8871 3725)

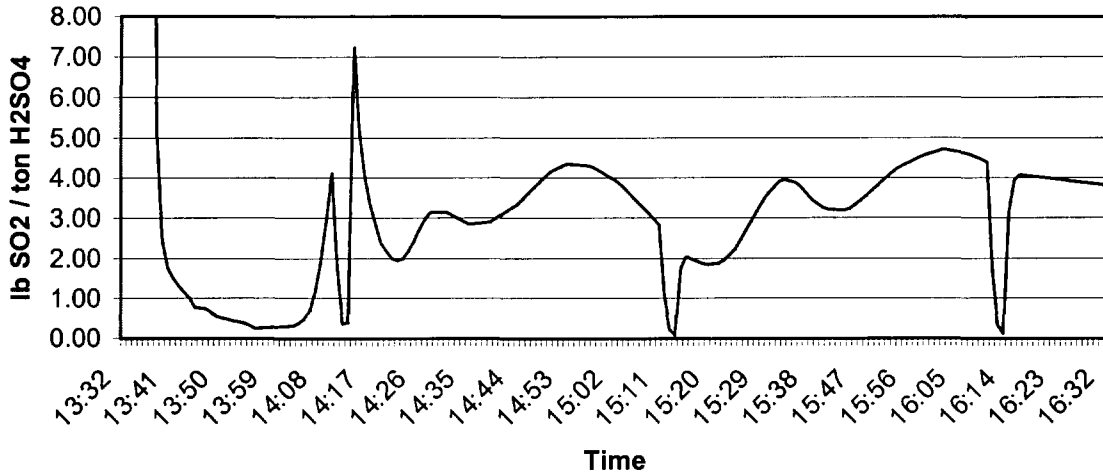
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S. Arif
C. Holladay
J. Campbell, EPCHC
B. Shuman, SWD
B. Waley, EPA
J. Bunch, NPS

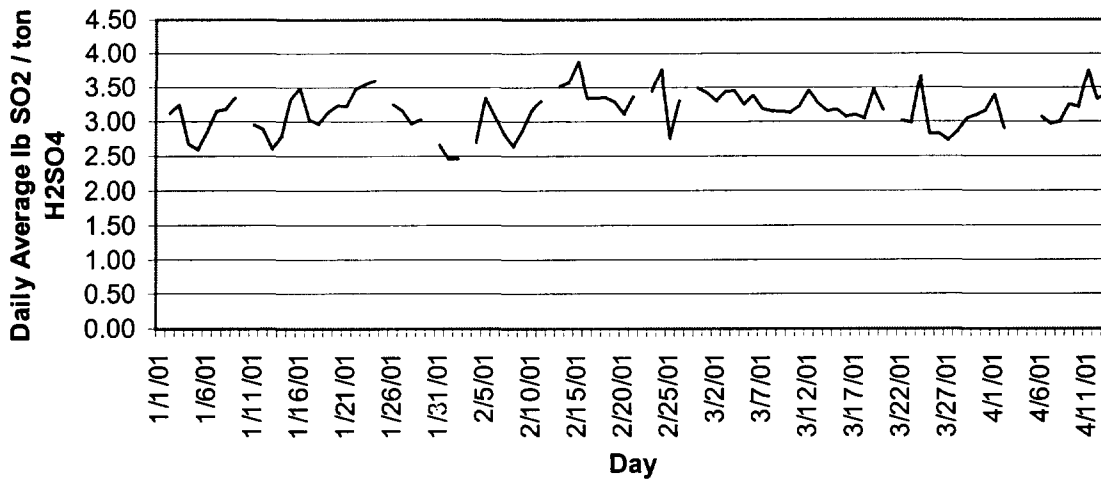


Response No. 1

No. 9 Sulfuric Acid Plant April 5, 2001 3-hr Startup



No. 9 Sulfuric Acid Plant SO2 Emissions



Response No. 4

| Year | No. 8 Sulfuric Acid Plant | | No. 9 Sulfuric Acid Plant | |
|------|-------------------------------|----------------------------------|-------------------------------|----------------------------------|
| | Average Annual Production TPD | Days at Maximum Production Rates | Average Annual Production TPD | Days at Maximum Production Rates |
| 1996 | 2,379 | 88 | 2,573 | 0 |
| 1997 | 2,271 | 100 | 2,607 | 17 |
| 1998 | 2,209 | 3 | 3,050 | 156 |
| 1999 | 2,328 | 76 | 2,850 | 75 |
| 2000 | 2,268 | 121 | 2,649 | 59 |

Maximum production rates defined as 90-100% of permitted production rates

| SENDER: COMPLETE THIS SECTION | COMPLETE THIS SECTION ON DELIVERY | |
|--|---|---------------------|
| <ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. | A. Received by (Please Print Clearly) | B. Date of Delivery |
| <p>1. Article Addressed to:</p> <p>Mr. E. O. Morris Vice President of Environment, Health and Safety Cargill Fertilizer, Inc. 8813 Highway 41 South Riverview, FL 33569</p> | <p>C. Signature <input type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee</p> <p><i>E. O. Morris</i></p> | |
| <p>2. Article Number (Copy from service label) 7099 3400 0000 1450 2583</p> | <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p> <p>3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p> | |

PS Form 3811, July 1999

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Mr. E. O. Morris

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| Return Receipt Fee (Endorsement Required) | 1.90 |
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| Total Postage & Fees | \$ 3.74 |

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Name (Please Print Clearly) (to be completed by mailer)
Mr. E. O. Morris
Street, Apt. No., or PO Box No.
8813 Highway 41 South
City, State, ZIP+4
Riverview, FL 33569

PS Form 3800, July 1999

See Reverse for Instructions

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