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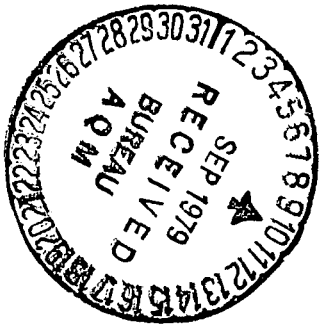
INTERNATIONAL MINERALS & CHEMICAL CORPORATION



September 6, 1979

Mr. Steve Smallwood, P.E.
Bureau of Air Quality Management
State of Florida
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Smallwood:

Thank you for your prompt response to our construction permit application #22822 for the Animal Feed Ingredient storage and transfer system at IMC's Port Sutton Terminal. We apologize for filing the application on an obsolete application form. We received this form from your west Central region approximately three weeks prior to our submittal and were under the assumption that it was current.

To avoid duplication and provide you with the additional information requested in the most concise form possible, we have chosen not to submit the updated form but to respond to the applicable questions in letter form.

IMC's Port Sutton facility in Hillsborough County last year shipped approximately 5 million tons of phosphate rock and finished fertilizer and Animal Feed Ingredient products. The vast majority of this, approximately 4.5 million tons, was unground phosphate rock. Over 400,000 tons was granulated Diammonium Phosphate (DAP) or triple superphosphate (GTSP). The remainder of approximately 70,000 tons was Animal Feed Ingredient products. The construction of the "source" Animal Feed Ingredient storage and transfer system is not intended to increase the throughput of Animal Feed Ingredient material, only the logistics and ease of handling vessel loading which is irregular in nature.

With the exception of the three new silos and the truck unloading station, all other transfer and loading will be accomplished through existing permitted conveying and dust control systems. Additional dust

control equipment specified in our construction permit application should more than adequately handle the fugitive particulate emissions generated by the new transfer and storage system.

On the basis that the facility includes a phosphate rock dryer, rail car unloading stations, as well as other significant controlled point sources, I do not believe there is any doubt that we would qualify as a major emitting facility. We have agreed, through telephone communications, that the planned pulse type bag collector is both standard industry practice and indicative of BACT for this type of installation. It is also understood that the source modelling requirements have been waived on the basis that good engineering judgment is sufficient to quantify the expected insignificant impact on ambient air quality from a source that is calculated to emit less than 0.2 of a ton per year of particulate.

I would like to point out that the calculation of total allowable emissions from a facility may, in instances such as this, give a totally erroneous picture. For instance, we have bag collectors controlling transfer points on a conveyor which has a process capacity of over 2000 tons per hour. The emissions from the bag collectors routinely are less than 1 lb. per hour, while interpretation of the Process Weight Rate Table would assign over 50 lbs. per hour allowable emissions.

TECHNICAL DISCREPANCIES

1. Latitude: $27^{o}52'9"$
   Longitude: $82^{o}25'13"$

2. The source will be utilized immediately following completion of construction estimated at four months after receipt of FDER permit.

3. Current plans over the next year to eighteen months indicate a gradual increase in Animal Feed Ingredient material shipments from 70,000 up to approximately 100,000 tons per year. It is conceivable in future years that shipments up to a maximum of 300,000 tons per year might be realized. This would equate to actual operation of the source approximately 2500 hours per year. This operation would be irregular with perhaps two days of 24-hour a day operation followed by a week of no operation at all. All calculations involving potential emissions are based on this 300,000 tons per year number.

4. As discussed over the phone with you and your staff, we know of no justified emission factor which can be applied to the transfer and handling of a granulated and screened Animal Feed Ingredient product. We have thus assumed a worst case condition and assigned an emission

factor of 3.3 grains per cubic foot in a vented situation (without artificially induced draft). This number was based on sampling of a ground phosphate rock rail car loading system with dust control. This system handles an extremely dusty product and, because of the dust control, the emission and collected material are exactly quantifiable for the calculation of an emission factor. We apply this emission factor to the volume displaced in a filling operation such as a silo since that volume would be the only cause of "potential emission." Movement of 300,000 tons per year of product with the density of 55 lbs. per cubic foot would create a displacement of 10,910,000 cubic feet of air from the silos.

$$\frac{10{,}910{,}000 \text{ cu.ft.} \times 3.3 \text{ gr/cu.ft.}}{7{,}000 \text{ gr/lb} \times 300{,}000 \text{ TPY}} = 0.0171 \text{ lb/ton displacement equal to } 2.57 \text{ tons/year emission.}$$

5. Apparent bag collector efficiency required.

Basis: Vendor guarantee - emissions not to exceed 0.02 gr/cu.ft.
Volume equivalency: Bag collector vented volume/displacement volume
2500 hrs. x 60 min/hr. x 3000 cfm/10910,000 cf = 41.2

Apparent efficiency required: $1 - \frac{0.02}{(3.3/41.2 + 0.02)} = 80\%$

6. The discharge hopper under the trucks will be covered with hatches to be opened only under specific truck discharge doors. Assuming total displacement which ignores the continuous removal of material from the hopper by the conveyor system during unloading, the "potential emission" could be as much as calculated in Item 4 or 2.57 tons per year.

7. A choked discharge will be used from the truck hopper to a covered conveyor feeding the bucket elevator. The bucket elevator and all three silos will be vented through silo interconnections to the bag collector installed on the center silo.

8. Particulate collected by the bag house will be discharged directly back to the center silo. The unit will be mounted, without the standard hopper, over an opening with the same dimensions as the bag collector housing in the center silo.

9. The height of the bag collector fan discharge is 97 feet above existing grade, 104 feet above mean sea level and approximately 2 feet above the top of the silo, discharging horizontally.

10. The emissions generated during the transfer from storage to ship loading were not quantified because, as mentioned earlier, these systems

are controlled with additional bag collectors covered under FDER operating permits AO29-6716 and AO29-4548. IMC has expended considerable funds and effort at Port Sutton over the last three years to insure compliance with all Hillsborough County and State fugitive dust regulations.

11. As stated in the original application, the control unit is to be a Micro-Pulsaire bag collector, Style B, Model 49S-8-20, or equivalent. The flow rate of 3000 cubic feet per minute with 462 square feet of filter area (49 bags) gives this unit an air to cloth radio of 6.49. The bags will be 14 ounce polyester felt. The unit is 111 inches high and 54 inches square.

12. Phosphate rock directly from a rock dryer or short term storage in insulated silos is approximately 180^{o} Fahrenheit and contains about 2.5% moisture. Venting of the steam and fugitive emissions from this material into a bag house has created the adverse conditions you described of plugging and blinding. Fugitive dust controls under these conditions have given the industry headaches not only with bag collectors but with the duct work associated even with high energy wet scrubbers. Careful design, frequent cleanout ports, insulation and even water sprays in the ducts have been used to keep buildup from occurring and plugging duct work leading to the collection devices.

    In the case of mixed fertilizer products and Animal Feed Ingredients, temperatures are generally much lower and product moisture below 1%. This plus, in the case of Animal Feed Ingredients, the necessity to seal them from outside contamination and moisture makes the utilization of bag collectors the most logical choice.

I hope this addendum to the construction permit application is sufficient to meet your needs and fulfill the requirements of your Completeness Report. Please let me know if you need any additional information or further explanation on the points covered. Thank you very much for the cooperation that I have received from you and your staff.

Very truly yours,

Robert S. Hearon

Robert S. Hearon
Environmental Services
Supervisor

RSH/cm