



# Florida Department of Environmental Protection

Bob Martinez Center  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Charlie Crist  
Governor

Jeff Kottkamp  
Lt. Governor

Michael W. Sole  
Secretary

February 28, 2007

ELECTRONIC MAIL - RECEIVED RECEIPT REQUESTED

[Tom.Fuchs@mosaico.com](mailto:Tom.Fuchs@mosaico.com)

Mr. Thomas W. Fuchs  
Plant Manager – New Wales  
Mosaic Fertilizer, LLC.  
Post Office Box 2000  
Mulberry, Florida 33860

Re: DEP File No. 1050059-055-AC  
Best Achievable Retrofit Technology Application  
Mosaic – New Wales Plant

Dear Mr. Fuchs:

On February 2, 2007 we received your application for an air construction permit to incorporate Best Achievable Retrofit Technology (BART) requirements for several emissions units at the New Wales Plant in Polk County.

Pursuant to Rules 62.296.340, 62-4.055, and 62-4.070 F.A.C., Permit Processing, the Department requests submittal of additional information prior to processing the application. Should your response to any of the below items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

### **Sulfuric Acid Plants (SAPs) 1, 2 and 3**

1. As indicated in your BART application, Table 5-1 provides previous SO<sub>2</sub> Best Available Control Technology (BACT) determinations for other SAPs. Based on the table, the most stringent SO<sub>2</sub> BACT determination was done for CF Industries in Plant City. An emission limit of 3.5 lb/ton (3-hr rolling average) of 100% sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) was established. The method of compliance was Continuous Emission Monitors (CEMs). Please provide the following information for SAPs 1, 2 and 3 at New Wales:
  - Provide a graphical representation against time of CEMs SO<sub>2</sub> emissions data in lb/ton of 100% H<sub>2</sub>SO<sub>4</sub> for the last year. The averaging time should be 24 hours as well as 3 hours. The two averaging times should be depicted in different colors. In providing this data, please present it in a graphical representation against time. On the same graph indicate the production rates for the plants and indicate the turnaround date, if any, for the SAPs on the time axis. A different graph should be made for each of the three SAPs.

- The application states that the previous production increase for the three SAPs were done by replacing an interpass tower and converter modifications. What exactly was done to the converter? If catalyst was replaced in any of the converter passes, please provide information as to how that was accomplished. Was the same catalyst used or a different catalyst. Was there an increase in the amount of catalyst replaced?
2. The application presents different available SO<sub>2</sub> abatement methods. One of the methods is tail-gas scrubbing in conjunction with double absorption. Hydrogen peroxide scrubbing has been employed at SAPs. In research done by the Department, Outokumpu Technology ([www.outokumputechnology.com](http://www.outokumputechnology.com)) provides a similar process called Peracidox process, which they claim to have low investment costs. Please provide cost analysis in using that system for further abatement of SO<sub>2</sub> emissions.
  3. Submit a copy of the bid specifications and vendor quote used in the cost analysis for ammonia tail-gas scrubbing.
  4. Provide pages of the OAQPS Cost Manual that were used in Table 5-3 and denoted under Footnote 'a'.
  5. Provide sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) stack emissions tests for 2005-2006 for all SAP plants.

**Diammonium Phosphate Plant (DAP) Plant No. 1/ Monoammonium Phosphate Plant (MAP) Plant**

6. For each DAP/MAP plants subject to BART, you are required by Rule 62-296.340, F.A.C., to conduct an analysis of emissions control alternatives. This step includes the identification of available, technically feasible retrofit technologies, and for each technology identified an analysis of the cost of compliance, the energy and non-air quality environmental impacts, and the degree of visibility improvement in affected Class I areas, resulting from the use of the control technology. Please provide this information to the Department for each affected pollutant for the DAP Plant No. 1 and the MAP Plant.
7. The permit for DAP Plant No. 1 has a particulate matter (PM) limit to exempt the plant from RACT regulations. Please submit PM emission data for the last 2 years of operation for the plant. Resubmit a proposed BART PM emission limit (lb/ton P<sub>2</sub>O<sub>5</sub> input) for the plant and specify the control technology chosen based on the top-down technology review as described above.
8. Provide emissions data for the last two years of operation for NO<sub>x</sub> emissions from the DAP Plant No. 1. What emission limit is being proposed for NO<sub>x</sub>?
9. Provide PM emissions data for the MAP Plant for the last two years of operation for the plant.
10. Submit a flow diagram of each plant showing the current control equipments in use.

**AFI Granulation Plant**

11. For each plant subject to BART, you are required by Rule 62-296.340, F.A.C., to conduct an analysis of emissions control alternatives. This step includes the identification of available, technically feasible retrofit technologies, and for each technology identified an analysis of the cost of compliance, the energy and non-air quality environmental impacts, and the degree of visibility improvement in affected Class I areas, resulting from the use of the control technology. Please provide this information to the Department for each affected pollutant for the AFI Granulation Plant.
12. The permit for the AFI Granulation Plant has a PM limit to exempt the plant from RACT regulations. Please submit PM emission data for the last two years of operation for the plant. Resubmit a proposed BART PM emission limit (lb/ton P<sub>2</sub>O<sub>5</sub> input) for the plant and specify the control technology chosen based on the top-down technology review as described above.

13. Submit a flow diagram of the AFI Granulation Plant showing the current control equipments in use.

**Multifos Kilns "A" and "B", Dryer, and Blending Operations**

14. Provide detailed information on the current caustic scrubber being used on the "C" kiln for SO<sub>2</sub> control. The information should include the following:

- Manufacturer's name and address.
- The exact cost of installing the caustic scrubber. Provide documentation to verify the cost of purchase and installation.
- Using the exact cost and converting to 2006 dollars, determine the cost effectiveness of installing the same scrubber for "A" and "B" kilns.
- Provide information on how the "C" kiln is complying with the permit requirement of not disposing the effluent from the caustic scrubbing to the existing pond water system or any other acidic waste water that can be recirculated to another scrubber. Is there a dedicated pond established for the caustic scrubber effluent?

15. In Table 5-4, footnote 'a' refers to factors and cost estimates using OAQPS Cost Manual, 4<sup>th</sup> Edition, Chapter 6. Provide the pages used in arriving at the cost estimates. What were the reasons for using the 4<sup>th</sup> Edition instead of the current 6<sup>th</sup> Edition? If the factors are different, redo the table using the current factors and cost estimates.

16. The Department considers \$1,800 per ton of SO<sub>2</sub> removed using the two caustic scrubbing systems for "A" and "B" kilns as reasonable for a BART determination. Provide the cost effectiveness for the next best alternative in controlling SO<sub>2</sub> emissions from the "A" and "B" kilns.

17. Provide NO<sub>x</sub> emissions data for the "A" and "B" kilns and conduct an analysis of emissions control alternatives. The emissions control alternatives shall include the identification of available, technically feasible retrofit technologies, and for each technology identified an analysis of the cost of compliance, the energy and non-air quality environmental impacts, and the degree of visibility improvement in affected Class I areas, resulting from the use of the control technology. Please provide this information to the Department for NO<sub>x</sub> for the "A" and "B" kilns.

18. Submit a flow diagram of the Multifos "A" and "B" kilns showing the current control equipments in use. Please submit the same for the "C" kiln.

**BART for Other BART Eligible Units (EUs 15, 23-28, 29-35, 38, 52, 55, 63 & 66-68)**

19. The permit for these BART-eligible emission units has a PM limit to exempt the emission units from RACT regulations. Please provide the permitted emission limits and the actual emissions for each one of the emission units for the last two years of operation. Resubmit a proposed BART PM emission limit (lb/ton P<sub>2</sub>O<sub>5</sub> input) for each of the emission units and specify the control technology chosen based on the top-down technology review as described above. Additionally, provide the same information for SO<sub>2</sub> emissions for each BART-eligible emission units identified above.

**Other**

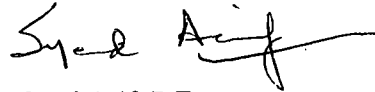
20. Please provide all the necessary application forms for all the BART-eligible emission units.

We will forward any comments received from other agencies as soon as we receive them. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department

requests for additional information of an engineering nature. Permit applicants are advised that Rule 62-4.055(1), F.A.C. requires applicants to respond to requests for information within 90 days.

We will be happy to meet and discuss the details with you and your staff. I may be contacted at 850/921-9528. You may discuss the modeling requirements with Mr. Cleve Holladay at 850/921-8986.

Sincerely,



Syed Arif, P.E.  
North Permitting Section

/sa

cc: G. Worley, EPA ([worley.gregg@epa.gov](mailto:worley.gregg@epa.gov))  
D. Morse, NPS ([dee\\_morse@nps.gov](mailto:dee_morse@nps.gov))  
D. Turley, Mosaic Fertilizer ([david.turley@mosaicco.com](mailto:david.turley@mosaicco.com))  
C. Zhang-Torres, DEP-SWD ([cindy.zhang-torres@dep.state.fl.us](mailto:cindy.zhang-torres@dep.state.fl.us))  
D. Buff, P.E., Golder Associates Inc. ([dbuff@golder.com](mailto:dbuff@golder.com))

**Adams, Patty**

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**From:** Harvey, Mary  
**Sent:** Thursday, March 01, 2007 9:21 AM  
**To:** Adams, Patty  
**Subject:** FW: Mosaic Fertilizer, LLC - Project #1050059-055-AC

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**From:** Buff, Dave [<mailto:DBuff@GOLDER.com>]  
**Sent:** Wednesday, February 28, 2007 11:55 AM  
**To:** undisclosed-recipients  
**Subject:** Read: Mosaic Fertilizer, LLC - Project #1050059-055-AC

Your message

To: [DBuff@GOLDER.com](mailto:DBuff@GOLDER.com)  
Subject:

was read on 2/28/2007 11:55 AM.

## Adams, Patty

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**From:** Harvey, Mary  
**Sent:** Thursday, March 01, 2007 9:21 AM  
**To:** Adams, Patty  
**Subject:** FW: Read: Mosaic Fertilizer, LLC - Project #1050059-055-AC

**Attachments:** ATT102189.txt



ATT102189.txt  
(233 B)

-----Original Message-----

**From:** Turley, Charles D - New Wales [mailto:David.Turley@mosaicco.com]  
**Sent:** Wednesday, February 28, 2007 11:57 AM  
**To:** undisclosed-recipients  
**Subject:** Read: Mosaic Fertilizer, LLC - Project #1050059-055-AC

Your message

**To:** Turley, Charles D - New Wales  
**Cc:**  
**Subject:** FW: Mosaic Fertilizer, LLC - Project #1050059-055-AC  
**Sent:** Wed, 28 Feb 2007 11:37:59 -0500

was read on Wed, 28 Feb 2007 11:57:22 -0500

## Adams, Patty

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**From:** Harvey, Mary  
**Sent:** Thursday, March 01, 2007 10:31 AM  
**To:** Adams, Patty  
**Subject:** FW: Mosaic Fertilizer, LLC - Project #1050059-055-AC

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**From:** Zhang-Torres  
**Sent:** Thursday, March 01, 2007 10:28 AM  
**To:** Harvey, Mary  
**Subject:** Read: Mosaic Fertilizer, LLC - Project #1050059-055-AC

Your message

**To:** 'tom.fuchs@mosaicco.com'; 'worley.gregg@epa.gov'; 'dee\_morse@nps.gov'; 'david.turley@mosaicco.co'; Zhang-Torres; 'dbuff@golder.com'  
**Cc:** Arif, Syed; Adams, Patty; Gibson, Victoria  
**Subject:** Mosaic Fertilizer, LLC - Project #1050059-055-AC  
**Sent:** 2/28/2007 11:33 AM

was read on 3/1/2007 10:27 AM.

**Adams, Patty**

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**From:** Harvey, Mary  
**Sent:** Thursday, March 01, 2007 9:19 AM  
**To:** Adams, Patty; Holtom, Jonathan  
**Subject:** FW: Ltr- Progress Energy Florida, Inc.

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**From:** Meyer, Dave [mailto:Dave.Meyer@pgnmail.com]  
**Sent:** Thursday, March 01, 2007 9:11 AM  
**To:** Harvey, Mary  
**Subject:** RE: Ltr- Progress Energy Florida, Inc.

Hi Mary,

I got the email. Thanks - Dave

-----Original Message-----

**From:** Harvey, Mary [mailto:Mary.Harvey@dep.state.fl.us]  
**Sent:** Tuesday, February 27, 2007 11:22 AM  
**To:** Meyer, Dave; scott\_osbourn@golder.com; Zhang-Torres; worley.gregg@epa.gov; dee\_morse@nps.gov  
**Cc:** Holtom, Jonathan; Adams, Patty; Gibson, Victoria  
**Subject:** Ltr- Progress Energy Florida, Inc.

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: <http://www.adobe.com/products/acrobat/readstep.html>.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

DEP, Bureau of Air Regulation



**Adams, Patty**

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**From:** Harvey, Mary  
**Sent:** Wednesday, February 28, 2007 11:43 AM  
**To:** Arif, Syed; Adams, Patty  
**Subject:** FW: Mosaic Fertilizer, LLC - Project #1050059-055-AC

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**From:** Fuchs, Tom W - New Wales [mailto:Tom.Fuchs@mosaicco.com]  
**Sent:** Wednesday, February 28, 2007 11:41 AM  
**To:** Harvey, Mary  
**Cc:** Ahrens, Dean - New Wales  
**Subject:** RE: Mosaic Fertilizer, LLC - Project #1050059-055-AC

I am responding to let you know I have received the email below.

Please let me know if you have additional questions or request.

Thanks,  
Tom Fuchs  
New Wales Plant Manager  
Phone 863-428-7102  
Cell 863-860-1177

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**From:** Harvey, Mary [mailto:Mary.Harvey@dep.state.fl.us]  
**Sent:** Wednesday, February 28, 2007 11:33 AM  
**To:** Fuchs, Tom W - New Wales; worley.gregg@epa.gov; dee\_morse@nps.gov; david.turley@mosaicco.co; Zhang-Torres; dbuff@golder.com  
**Cc:** Arif, Syed; Adams, Patty; Gibson, Victoria  
**Subject:** Mosaic Fertilizer, LLC - Project #1050059-055-AC

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The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: <http://www.adobe.com/products/acrobat/readstep.html>.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

DEP, Bureau of Air Regulation

3/2/2007