Florida Department of
# Environmental Protection

## Memorandum

**TO:** Sandra F. Veazey 8/4/04
**THROUGH:** Kevin M. White, P.E.
**FROM:** Owen Mancarella
**DATE:** July 13, 2004
**SUBJECT:** Evaluation Summary for Premier Chemicals, LLC, Port St. Joe Facility 0450001-004-AF, Gulf County

We recommend issuing a federally enforceable operating permit (FESOP) to Premier Chemicals, LLC to operate their Port St. Joe Facility. This renewal is a change in status from the previous Title V operating permit.

**Process Description**

Premier Chemicals, LLC, Port St. Joe facility Premier Refractories Inc.'s Port St. Joe Manufacturing Plant (PRI) manufactures magnesia products [products containing MgO and Mg(OH)2]. These magnesia products are manufactured using dolomitic lime, sulfuric acid, seawater, and granular triple superphosphate (GTSP) as raw materials. Dolomitic lime (typically calcium oxide and magnesium oxide) is stored, crushed, and hydrated with recycled process water. The hydrated lime is reacted with sulfuric acidified seawater and magnesium hydroxide seed resulting in a magnesium hydroxide precipitate which is washed, filtered, and stored as sludge for future use.

The magnesium hydroxide sludge is calcined to produce MgO (Magox), or dried to produce powdered Mg(OH)2. Both products are stored, or processed further with grinding, pelletizing, etc. Products include Aquamag [Mg(OH)2 slurry], Aquamag SW (dried, powdered Aquamag), Magox (powdered MgO), Magox HB (dried hard-burned MgO pellets), and Enviroblend (MgO and GTSP).

The facility was constructed in the late 1950s, and the calciners, rotary kiln, and filter building have been continuously permitted since mid-1972. These activities precede the effective date of potentially applicable NSPS requirements (40 CFR 60, Subpart UUU - Calciners and Dryers), which would be applicable if reconstruction or modifications occurred. Activities which process raw materials into products through chemical or physical changes (calciners, rotary kiln, grinding, pelletizing) are subject to the Rule 62-296.320(4)(a), F.A.C. (Process Weight Table).

The facility generates fugitive emissions associated with the following activities (Emissions Unit 013):

- Vehicular Traffic
- Dolomitic Lime Crushing and handling
- Multi-Hearth Furnace product handling
- Ground MgO Bulk Loadout
- Filter building as a result of Operations that Include:
  - Eirich Mixer Loading
  - Enviroblend Material Handling, Grinding, and Bagging
  - HG MgO Material Handling, Grinding, and Bagging
- MgO grinding Building as a result of Operations that include MgO Material Handling and Bagging

Miscellaneous exempt activities are also included in this permit.

**Pollution Control Equipme...**
PM emissions are controlled by baghouses or vent filters. Combustion emissions are vented to the atmosphere.

**Environmental Impact**

| Airborne Contaminant Emitted | FAC Rule | Estimated Emissions lbs/hr | Estimated Emissions T/yr | Allowable Emissions lb/hr | Allowable Emissions T/yr |
|---|---|---|---|---|---|
| PM | N/A | | 12.7* | | 54.6** |
| PM10 | N/A | | 6.5* | | |
| SO2 | N/A | | 0.3** | | |
| VOC | N/A | | 4.2** | | |
| NOx | N/A | | 37.8** | | |
| CO | N/A | | 31.8** | | |
| Objectionable Odors | 62-296.320(2) | None allowed off plant property | | | |
| VE | 62-297.620(4) | Not more than 5% opacity | | | |

(* EU012; ** EU006/7/1)
Note: Compliance with the 5% opacity limit shall be presumptive of compliance with PM emission limits for EU 006, 007, and 010, after initial PM testing verifies the EU's compliance with requested limits.

**Applicable Rules & Regulations**
This source is regulated in accordance with Rules 62-296.320(4), F.A.C. - Process Weight Table, and 62-297.620(4), F.A.C. – PM testing wavier for 5% opacity with a baghouse. The applicant has requested a lower PM limit, with respect to EUs 006, 007, and 010, in order to avoid Title V permitting (Rule 62-210.300(2)(b), F.A.C.).

**Compliance Monitoring**
Annual Method 9 VE testing and recording of the baghouses pressure drop every 8 hours. In addition, initial PM testing has been required to verify compliance with the required PM limits for EUs 006, 007, and 010 (limited to avoid TV permitting).

**Compliance History**
The facility has a good history of being in compliance. A review of the past five years of inspections denoted no compliance issues or any Department recommendations. However, during a recent permitting site visit it was observed that general housekeeping may become an issue in the future (fugitive PM issues).

**Fee Summary**
There is no fee required since the facility holds a Title V permit.

**Additional Notes**
Due to the permittee requesting lower particulate matter (PM) limits for EU 006, 007 (combined in Section III, Subsection A of permit) & 010 in order to reduce emissions below the major source threshold (TV Avoidance) and become a FESOP, initial testing was incorporated into this permit for verifying the lower limits (synthetic minor limits). Typically this verification testing would have been conducted prior to permit issuance, but the Premier Chemicals permit application was submitted late and did not have the testing conducted prior to the current TV's expiration. Therefore, it was the Department's determination to make the application complete prior to the TV permit expiation date and require the initial compliance testing within 30 days after permit issuance. If this testing shows that the EU's emissions are in excess of the requested limits the facility will be out of compliance with this permit and likely subject to retesting and/or permit modification. If the test show that the EU's emissions are very close to the requested limit, it may be necessary to request compliance verification renewal testing per Rule 62-297.310(7)(b), F.A.C. – Special Compliance Tests. Renewal PM testing was not included in this permit due to Rule 62-297.620(4), F.A.C. and the Department's opinion that the facility will have no difficulty meeting the requested PM limits.