UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

September 22, 2011

Mr. James A. Capp, Chief
Air Protection Branch
Georgia Department of Natural Resources
4244 International Parkway, Suite 120
Atlanta, Georgia 30324

Dear Mr. Capp:

Thank you for sending the Prevention of Significant Deterioration (PSD) permit application for a proposed project at CARBO Ceramics in Millen GA. The facility consists of a new kaolin clay processing facility for producing proppants. We focused our review primarily on the four proposed calciners since they produce the bulk of the emissions.

The Region 4 office of the U.S. Environmental Protection Agency has reviewed the permit application, and has the following comments:

NO_x – Each of the four proposed calciners emits 530 tons/year of nitrogen oxide (NO_x) for a total of 2120 tons from the calciners. Given the concerns in Georgia with the ozone standard, these emissions increases are significant. The facility proposes only combustion control as Best Available Control Technology.

The applicant has concluded that SNCR is technically infeasible. There are techniques for adding ammonia or ammonia salts for NOx control or expanding the temperature range which are cited in the Cement Kiln ACT referenced by Smith Aldridge (EPA Document EPA-453/R-94-004 "Alternative Control Document Update - NOx Emissions from New Cement Kilns", November 2007) that have not been explored. These techniques are generic and not limited to cement kilns and could be more applicable to shorter kilns. We believe further investigation is necessary before SNCR can be considered technically infeasible.

The application dismisses this option of a catalytic baghouse primarily on cost effectiveness grounds. We note that a recently submitted PSD application from PyraMax has proposed to install this technology in a similar facility near to this site for sulfur dioxide (SO_2) and NO_x control. In reviewing the cost analysis for the catalytic baghouse we are concerned that the cost analysis may not be reliable since it is based on a bid that is 12 years old and for a unit that is 70% larger. Adjustments for changes of this magnitude are highly unreliable. Also the cost analysis does not recognize that there are already costs required for a baghouse for PM. We recommend the costs for a catalytic baghouse be based on more site specific data.

Also, the other NO_x cost analyses appear to have unsupported factors such as 30% and 40% contingency cost adjustments, unsupported lost production costs for a greenfield facility, and RSCR has reduced the useful life to 10 years. These modifications do not appear consistent with the EPA cost manual and appear to inflate the costs for the NO_x technologies substantially.

Overall, we do not believe a credible effort has been made to identify and seriously evaluate the most viable means of controlling NO_x from this facility.

SO_2 – The emission rate seems to be identical to that for the CARBO Toomsboro facility which was permitted without an SO_2 wet scrubber. The CARBO Toomsboro analysis was based on 0.5 lbs sulfur per hour while this unit expects to have clay with as much as 0.82% sulfur. However a wet scrubber should control emissions 90-95%. Hence we would expect a much lower value. Please explain why the SO_2 limit is so high in this permit and what the experience has been at the CARBO facility in Toomsboro.

Since sulfur in the clay is highly variable depending on which seam is being mined and since the scrubber is also being relied upon for control of toxics as well as SO_2, we recommend that minimum operating and performance standards for the scrubber be included beyond an hourly SO_2 emission rate. Otherwise the scrubber could be turned off or operated at reduced efficiency when the sulfur content in the clay is low.

If you have any questions about these comments or require additional information, please contact Heather Ceron at (404) 562-9185 or John Calcagni at (919) 541-9775.

Sincerely,

Gregg M. Worley

Gregg M. Worley
Chief
Air Permits Section