



July 26, 2011

Jac Capp
Chief, Air Protection Branch
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4244 International Parkway, Suite 120
Atlanta, Georgia 30354

**Subject: July 19, 2011 Pre-PSD Application Project Meeting
CARBO Ceramics, Inc. – Millen, Georgia Facility**

Dear Jac:

On behalf of CARBO Ceramics, Inc. (CARBO), I want to thank you for taking time to conduct a pre-PSD application project meeting, held at your offices on July 19, 2011, to discuss our proposed four (4) line proppant manufacturing plant in Millen, Jenkins County, Georgia. CARBO is pleased at the prospect of expanding operations in Georgia, and we appreciate the opportunity to discuss this project with you and your team.

In addition to yourself, those in attendance were Eric Cornwell, Peter Courtney, James Boylan, Hamid Yavari, and Susan Jenkins of the Georgia Environmental Protection Division (EPD); Jason Goodwin and Dan Herlihy of CARBO; and Craig Smith, Matthew Page and Jon Bandzul of Smith Aldridge, Inc. This letter is intended to summarize our discussions and ensure a clear understanding of the issues as we move forward with this important potential project. This summary is not meant to be exhaustive, so if you believe that we have missed an important decision or outcome from the meeting in the summary below, please reply at your earliest convenience.

In our meeting we discussed the following topics:

- Overall project description
- BACT (Rotary Calciners) – feasible control technologies evaluated
- 112(g) – Case-by-case MACT (Rotary Calciners and Spray Dryers)
- Greenhouse Gas (GHG) BACT
- NO_x, SO₂, fluorides, and sulfuric acid mist emission rates
- Air dispersion modeling assumptions, including meteorological data, fence line demarcation, receptor grid spacing, background concentrations and Class II VISCREEN and PVMRM protocols
- Exemption of intermittent sources from the modeling inventory
- PSD Application format and processing checklist

We provided an introduction of the project including a brief description of the facility and the nature of the emissions. An agenda and handouts describing this information was given to the meeting participants. We declared that PSD review will be triggered for NO_x, CO, SO₂, PM₁₀, PM_{2.5}, VOC, and GHG, and we noted that a Section 112(g) review will be triggered due to the acid gas emissions from the calciners (HCl and HF) and methanol emissions from the spray dryers. We described that site-wide fluoride emissions will be less than 3 tons/year and that H₂SO₄ emissions site-wide will be less than 7

tons/year. We also provided an overview of the project outreach program that CARBO is conducting to engage with officials and stakeholders at both the state and local level.

We then provided a brief summary of the preliminary BACT analysis conducted for the new facility. EPD was informed that, similar to what was presented in the November 29, 2010 meeting with EPD to discuss a contemplated expansion of our Toombsboro facility; NOx BACT for calciners will be proposed as low-NOx combustion technology with an emission limit of 121 lb/hr (matching the BACT limit for CARBO's Toombsboro's facility permit). CARBO stated that performance test results indicated that the NOx emissions were close to the permitted limits for the Toombsboro plant with a compliance margin of approximately 10-20%. EPD suggested that additional justification – such as emissions testing data – should be included or referenced in the permit application to justify the proposed NOx BACT limit.

SO₂ BACT was described as the use of a wet scrubber to control emissions from the calciners. It was mentioned that CARBO will propose the same emissions limit as that applicable to Toombsboro (34.25 lb/hr) due to the wide variability of sulfur content in clays and the need to utilize a wider variety of ores. EPD asked to see justification for SO₂ BACT limit in the permit application, and we agreed to provide such justification.

We then discussed GHG BACT, which will be proposed as combustion optimization, efficiency, heat recovery and use of natural gas fuel. EPD mentioned that there are two proposed GHG BACT determinations currently under review (Graphic Packaging and Effingham Power) and that any GHG BACT without a numerical limit would be difficult to approve. CARBO agreed to look into the two pending GHG BACT determinations and to develop an appropriate numerical limit for GHG emissions. EPD had no specific comments on CO, PM₁₀, PM_{2.5}, or VOC BACT overview.

An overview of the Section 112(g) case-by-case MACT analysis was provided including the use of pollution prevention for controlling acid gas emissions from the calciners. EPD said that since a wet scrubber is being proposed as SO₂ BACT for the calciner, CARBO would realize collateral control of the acid gases thereby making the use of a wet scrubber cost-effective for purpose of the 112(g) MACT analysis. EPD advised us that we would need to provide justification for the proposed HCl/HF emission limits if they do not specify the wet scrubber as MACT. The 112(g) MACT analysis for the spray dryers also was discussed briefly with EPD having no comments.

After the discussions of BACT and 112(g) MACT review, we gave a detailed discussion of the preliminary modeling associated with siting the facility and assumptions used in the draft protocol. The site location was discussed, and EPD stated that we should clearly mark the fence line in the modeling section of the application. CARBO agreed that access would be controlled at the ambient air boundary shown in the aerial photography. The emission units to be constructed and the modeling of paved roads were then discussed.

Next, we discussed our position that the facility's emergency generators would not be modeled with respect to the 1-hour NO₂ and SO₂ standards per USEPA guidance (USEPA March 1, 2010, Fox memo). EPD agreed with the above logic but requested additional justification to exclude the emergency generators for other pollutants and averaging periods. We then discussed the use of Macon/Peachtree City meteorological data; EPD expressed a preference for the Augusta meteorological data (Daniel Field) to be used, and CARBO agreed to this approach. We then discussed the use of ozone data for PVMRM obtained by taking the maximum ozone concentrations of each hour obtained from a collection of seven different ozone monitors located in Georgia and South Carolina. EPD expressed no objection to this approach.

CARBO then described its plan to use a receptor grid spacing of 100m out to 5km from the site, 250m spacing from 5 km to 10 km from the site, and 1,000m spacing from 10 km to 50 km from the site. EPD asked CARBO to modify this approach to use 100m spacing out to 2.5km from the site, 250m spacing from 2.5 km to 5km from the site, and 500m spacing from 5km to 50 km from the site. EPD also stated that given the constraints of AERMOD, we could proceed by modeling up to 50 km from the source and simply declare 50km as the SIA without determining its precise value through modeling. CARBO agreed to these requests and will proceed accordingly.

Background concentrations for PM_{2.5}, PM₁₀, SO₂, and NO₂ were discussed, and EPD stated that they would send CARBO the values that should be used. CARBO also proposed to exclude four sources from the Modeling Emissions Inventory; of these sources, only the emergency generators at Georgia Power Company's Plant Vogtle generated additional discussion. EPD suggested that the emergency generators at Plant Vogtle could likely be left out of the model as these units likely would be declared as exclusively emergency units – this determination was confirmed by EPD shortly after the meeting and communicated via email from Pete Courtney of EPD to Jon Bandzul of Smith Aldridge. A draft modeling protocol was left with EPD for review and comment, and CARBO requested that EPD provide feedback on the draft as soon as possible.

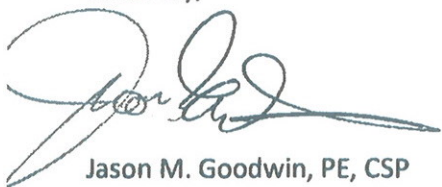
After the discussions of modeling, we discussed the PSD application's Table of Contents and format. Susan Jenkins of EPD, who had previously requested the development of an application checklist document to assist application processing, stated that the preliminary order, content, and structure of the permit application was sufficient.

Finally, CARBO described the path-forward timeline including our intent to submit the permit application by mid-August and our desire to receive a completeness determination by mid-October. EPD indicated that the schedule was realistic to accommodate project demands and that if a completeness determination could not be achieved by mid-October, it was reasonable to expect that any significant "roadblocks" would be identified by that point. EPD also suggested that preliminary modeling results based upon the meeting comments should be submitted as draft for discussion and approval to expedite the permitting process.

On behalf of our colleagues at Smith Aldridge, we at CARBO look forward to working with EPD on the development of this important new facility in Millen, Georgia.

If you have any questions or concerns with the enclosed summary, please do not hesitate to contact me by phone at (281) 921-6472 or by e-mail at jason.goodwin@carboceramics.com.

Sincerely,



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Director – Environmental, Health & Safety
CARBO Ceramics, Inc.

c: Eric Cornwell – GA EPD
Jim Ussery – GA EPD
James Boylan – GA EPD
Peter Courtney – GA EPD
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Dan Herlihy – CARBO Ceramics, Inc.
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