

# **“Commercial Demonstration of the Manufactured Aggregate Processing Technology Utilizing Spray Dryer Ash”**

## **Quarterly Technical Progress Report**

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## Abstract

This quarterly report covers the period from October 1<sup>st</sup>, 2003 through December 31<sup>st</sup>, 2003. It covers: technical development, permitting status, engineering status, construction status, operations summary and marketing support activities for this period.

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## Executive Summary

The construction phase is approximately one month behind schedule and the plant construction budget is under. Construction on the main process building and site work are nearly complete. Closure of the curing vessel structure is underway. Plans for hiring operating personnel and plant startup are being prepared.

I) Experimental – This section is not applicable to this project.

II) Results and Discussions

This section is broken down into the following subsections: Technical Support, Permitting, Engineering, Construction, Marketing Support, Operations Summary and DOE activities. These subsections describe the activities that have taken place during this quarter as they pertain to this project.

**A) Technical Support**

A manual was drafted for the QA/QC program. The program includes monitoring of aggregate product, spray dryer ash and lime qualities and process control during aggregate production. Most of equipment required for the program was purchased. A QA/QC Laboratory is being set up near the aggregate production plant at Birchwood.

About 500 lb of crushed aggregates with adequate size gradation were produced with addition of an alternative additive in the mix for use in block production evaluation at National Concrete Masonry Association (NCMA).

**B) Permitting**

The Virginia DEQ permit for storm water discharge for the operations phase was received. The final Storm Water Pollution Prevention Plan (SWPPP) was received from our Environmental Consultant.

**C) Engineering**

Ongoing engineering consists of: the preparation of the project punch list, development of the ACCESS program for data collection on the plant process computer, and installation and testing of the PLC program.

**D) Construction**

A subcontract was issued for the site fence work. J. C. Steele representatives were in to align the extruder, pug sealer, and pug mill. Installation of roof sheeting, and exhaust fans is complete as is the building sides and ventilation louvers for the process building. Work continues on the piping and electrical installation as well as setting of the L-410 and L-510 conveyors. All the major pieces of equipment for the plant have been delivered and installed. The storm water pond is complete as well as the fore bay collection field. The insulation contractor mobilized at the end of October. Kerry Johanson of J. R. Johanson, Inc. made a site visit for the curing vessel inspection and a report was submitted. The curing vessel is complete. The drilling subcontractor completed the potable water well to a depth of 310 ft. The site excavation contractor has remobilized and has set the final grade and asphalt placement is complete. Equipment start up and check out is underway, including to date; air system, steam system, process water system, SDA transport system, SDA silo and screw conveyor, 4 gravimetric feeders, pug mill, pug sealer, extruder, L-310, L-410, and L-510 conveyors. The asphalt contractor has demobilized for the season.

#### **E) Marketing Support**

Testing at the National Concrete Masonry Association (NCMA) in Herndon, Virginia continues with various concrete masonry producers, using modified Birchwood lightweight aggregate and indigenous aggregates and cement.

Emphasis was placed on formalizing a sales/supply agreement for Birchwood lightweight aggregate, masonry product (ASTM C – 331) and executing the agreement with interested party/s in preparation for start-up testing and commercial availability in 2004.

#### **F) Operations Summary**

Visits were made to the Birchwood job site to observe construction progress in advance of potential operational problems. The SDA start-up requirements schedule was refined and talks continue with Birchwood to obtain the quantities requested. Interviews were held for the mechanic, operator and QA/QC positions. The start-up sequence plan was developed and routed for input. Local credit applications have been submitted to service providers. A meeting was held with BPP personnel and ISG and the King George landfill regarding start up material availability and disposal. A six-month notice was issued to BPP establishing the transition period to begin on April 20, 2004. General Electric replaced Mirant for ownership of the Birchwood Power Facility at 6 p.m. on October 31<sup>st</sup>. David Kay assumed the responsibility for Operations for the Birchwood project at the end of October.

#### **G) DOE**

Topical Report #2 was prepared and submitted. The DOE Quarterly Program/Project Status Report and Quarterly Technical Progress Report for period ending September 30<sup>th</sup> were prepared and submitted. The application for Budget Period #3 was prepared and submitted.

Paul Yuran and Milton Wu participated in the exhibition at the Clean Coal & Power Conference, November 17-19, 2003, Washington, DC. In addition, a paper entitled “Production of Manufactured Aggregates from Coal Combustion By-Products” was presented at the Poster Session of the Conference.

- III) Conclusion – This project is slightly behind schedule and within budget. The activities described in section II will continue into the next quarter.
- IV) References – Not applicable for this report.