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west virginia department of environmental protection

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Jim Justice, Governor  
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## ENGINEERING EVALUATION / FACT SHEET

### BACKGROUND INFORMATION

Application No.: R13-2578C  
Plant ID No.: 069-00083  
Applicant: Carbon Innovations, LLC  
Facility Name: Triadelphia Facility  
Location: Ohio County  
NAICS Code: 541711  
Application Type: Class II Administrative Update  
Received Date: June 15, 2017  
Engineer Assigned: Steven R. Pursley, PE  
Fee Amount: \$300.00  
Date Received: June 16, 2017  
Complete Date: June 30, 2017  
Due Date: August 29, 2017  
Applicant Ad Date: June 16, 2017  
Newspaper: *Intelligencer*  
UTM's: Easting: 532.563    Northing: 4,432.643    Zone: 17  
Description: Addition of one 3-axis milling machine and a 15,000 cfm dust collector.

### DESCRIPTION OF PROCESS

The facility uses coal to produce a carbon material called CFOAM through a proprietary manufacturing process that includes the use of autoclaves and kiln furnaces. The gaseous waste stream are controlled with thermal oxidizers and the mold fill station is controlled by a dust collector. CFOAM is virtually pure carbon, but in a hard ridged foam form called billets.

With this application, Carbon Innovations proposes to add a new milling machine (11S) to trim the carbon foam billets. The particulate emissions from the milling machine will be controlled by a new dust collector (7C).

Additionally, the applicant has indicated that some equipment listed in the permit was not included when they purchased the plant (it was retained by the previous owner) and subsequently transferred the permit. Therefore, it will be removed from the permit.

### ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions from the were calculated using a mass balance. Carbon Innovations stated that 125 pounds of carbon per hour could be trimmed off of the billets (675 pounds per hour of untrimmed billets being reduced to 550 pounds of trimmed billets per hour). It appears (but isn't explicitly stated in the application) they then assumed 20% of this amount would become airborne and be captured by the dust collection system. They then assumed a 99% control efficiency for the baghouse. These seem to be conservative assumptions and should, therefore, produce very conservative emissions estimates.

Potential emissions of PM from the milling machine were estimated to be 0.25 pounds per hour and 1.1 tons per year.

### REGULATORY APPLICABILITY

The changes made with this application are subject to the following state rules (no federal rules are triggered):

45CSR7        *To Prevent and Control Particulate Air Pollution from Manufacturing Process Operations*

The particulate matter generated from the milling machine is subject to the particulate standards under 45CSR7, Table 45-7A, and the 20% opacity limit set forth in section 3.1. Table 45-7A limits emissions from the milling machine (based on a process weight rate of 675 pounds per hour) to 0.81 pounds per hour. Permitted emissions from the milling machine will be 0.25 pounds per hour.

45CSR13      *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation*

The proposed changes to the Triadelphia facility result in a *potential* (uncontrolled) increase of emissions of more than 6 pounds per hour and 10 tons per year. However, since the controlled emission increase is less than 6 pounds per hour and 10 tons per year,

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Carbon Innovations, LLC  
Tridelphia Facility

the changes can be made as a Class II Administrative Update. As required under §45-13-8.3 ("Notice Level A"), Carbon Innovations placed a Class I legal advertisement in a "newspaper of general circulation in the area where the source is . . . located." The ad ran on June 16, 2017 in the *Intelligencer* and the affidavit of publication for this legal advertisement was submitted to the WVDAQ on June 30, 2017.

### MONITORING OF OPERATIONS

No additional monitoring beyond that already required by R13-2578B was deemed necessary.

### CHANGES TO PERMIT R13-2578B

The following changes were made to R13-2578B:

- \* The permit was put into the most recent boilerplate.
- \* The following equipment was deleted from Table 1.0; Autoclave 2S, Final Grinding/Shaping 9S, and dust collectors 3C and 5C.
- \* Milling machine 11S and dust collector 7S were added to Table 1.0
- \* Autoclave 2S was removed from condition 4.1.1
- \* Autoclave 2S was removed from condition 4.1.3
- \* A typo in condition 4.1.8 was corrected. The condition erroneously listed control device 3c as a thermal oxidizer instead of 6c.
- \* Condition 4.1.10 was changed to apply to the new milling machine (11S, 7e) instead of 3e (which was removed).
- \* Changed condition 4.1.12 to apply to 4e and 7e instead of 3e, 4e and 5e.
- \* Changed condition 4.2.2 to apply to 4e and 7e instead of 3e, 4e and 5e.

RECOMMENDATION TO DIRECTOR

Information supplied in the application indicates that compliance with all applicable regulations will be achieved. Therefore it is the recommendation of the writer that permit R13-2578C for the modification of a carbon foam production facility in Triadelphia, in Ohio County, be granted to Carbon Innovations, LLC.



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Steven R. Pursley, PE  
Engineer



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August 7, 2017