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Re: Fiberight Project's Failure to Resolve Critical Issues For Combustion of Post Hydrolysis Solids (PHS) in the Hurst Boilers

There continues to be a MAJOR elephant in the room regarding the Fiberight project proposed for Hampden, Maine and the permitting process that the applicants have or have not gone through. I have previously documented the various errors and omissions in the Solid Waste and Air Permit Application critical reviews (see memos of February 1st, February 29th, March 23rd, April 19th, and April 29th 2016).

The elephant is Fiberight's ill-fated attempt so far to get their Post Hydrolysis Solids (PHS) from their enzyme addition process operation step that they desire to combust in their Hurst close-coupled gasifying boilers determined by the Maine DEP as a non-hazardous secondary material (fuel). Fiberight had previously used data for their Iowa "project" where they had applied to the US EPA for the "non-waste" determination (which would allow them to avoid the more stringent CISWI regulations),and is now taking limited data from the Lawrenceville, VA demonstration plant and applying these results to its Air Emissions Permit Application in Maine.

Notably, the latest in a long line of iterations on this topic was posted on the Department's website on June 7, 2016, submitted by CES (consultant for Fiberight) titled 2016-06-02 BACT Analysis_Rev2.pdf.

CES has repeatedly made the following statement:

"Fiberight has submitted a Non-waste Determination Application for Non-Hazardous Secondary Material (NHSM) to the United States Environmental Protection Agency (EPA) in reference to the Post-Hydrolysis Solids (PHS) fuel. The application was submitted in accordance with 40 CFR Section 241.3(c) to demonstrate the PHS fuel meets the legitimacy criteria and is not a solid waste. Based on the self-determination that the fuel is a non-waste NHSM, Fiberight does not anticipate operating under the CISWI regulations." [page 2]

However, as I noted on page 3 of my April 29, 2016 memo to the Department, Fiberight initiated the NHSM process *four years ago*, back in 2012 with the Region 7 staff of the US EPA, Ms. Deborah

Bredhoft, and that application had been turned over to Mr. Jesse Miller, Office of Resource Conservation and Recovery in Washington, DC. In a call (office phone # (703) 308-1180) to Mr. Miller in March, he indicated to me that he was still waiting for data the EPA had requested from Fiberight supporting their contention that the PHS meets the legitimacy criteria as a fuel and not a solid waste. Here it is June, 2016 and Fiberight is still stringing along the DEP with statements that it "has submitted an application" but not a statement that it has received a positive/conclusive response to that 4 year old application. And then they provide another nebulous statement that "Fiberight does not anticipate operating under the CISWI regulations". To my knowledge, they have not submitted data supporting the NHSM determination, and yet are proceeding as if the EPA determination is forthcoming.

Call me confused. Now, Fiberight is trying to take another bite at the NHSM issue by disregarding the initial Iowa data that myself and others have noted does NOT seem to support an NHSM determination and analyzing *additional* PHS material derived from residential MSW fed in small batches to their little used demonstration plant in Virginia.

CES states on behalf of the applicant:

"The PHS data set consists of multiple sets of analysis that were conducted on limited production runs of PHS from the Lawrenceville Facility. The analysis was performed on "loose" PHS and on PHS that was shipped to an outside third party to be briquetted" [page 5].

The NHSM application states that back in 2012, Fiberight was exploring the possibility of supplying solid fuel briquettes to a third party to justify PHS as a valuable fuel commodity. Is this what CES is referring to or have they generated a recent effort to briquette PHS generated this year?

Whether old or new samples, CES goes on to state that:

"The sulfur concentrations exhibited one outlier which was significantly larger than the remainder of the test results. The tests conducted for the presence of sulfur ranged from 700 ppm to 7,200 ppm. The test yielding 7,200 ppm was considered an outlier and was not included in the dataset."

CES presents statistical data for average and upper limit for each analyte. However, continuing the unusual tendency toward secrecy, the individual tests results were not reported, nor were a sampling, analytical program or laboratory results. Given this paucity of data, it is impossible to ascertain whether the data submitted is representative of the PHS, or to validate the claim that the sulfur analysis was an outlier.

The Department has data quality requirements under 06-096 CMR Chapter 405 Solid Waste Management Rules: Water Quality Monitoring, Leachate Monitoring, and Waste Characterization. Critical among these requirements is EPA's SW 846 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods in particular Chapter 9 Sampling Plans. If the applicant failed to apply the basic methodology to ensure that samples are collected and analyzed properly, then this data should be considered suspect. The applicants have repeatedly, and publicly, stated that they have a demonstration project operating in Lawrenceville, VA, therefore there should be no excuse for following the proper methodology and I hereby formally request evidence of the methodology, as well as the individual test results and laboratory from the Department.

Nonetheless, presuming that the samples were collected and analyzed using the appropriate methodology, the PHS results would be compared against the NHSM Contaminant Concentrations in Traditional Fuels: Tables for Comparison **(**November 29, 2011*)* to determine whether the PHS passed

the legitimacy criteria under 40 CFR 241.3 et.seq. for classification as a traditional fuel rather than managed as a solid waste.

To qualify as a fuel, the PHS would need to have comparable constituents to the traditional fuel to which it is being compared, in this case biomass. However, based on the PHS analyses submitted, it is very clear that the PHS contains Lead (Pb) far in excess of the amount found in biomass, 1,040 ppm for PHS versus 340 ppm for biomass. **This alone precludes its management as a fuel rather than a solid waste**.

As-fired moisture data is required to confirm the heating value for a legitimate fuel, which EPA has provided guidance at 5,000 BTU/lb, as-fired. **Without this information, no alternative determination can be made that the PHS is a fuel rather than solid waste.**

CES then goes on to state:

"Volatile HAPs were calculated based on AP-42 Section 1.6. Laboratory data is not available for these components and volatile HAPs would be expected to be destroyed during combustion in the boilers."

I would agree with this statement, however, a requirement under 40 CFR 241.3(c)(i)(iv) states that the following must be considered under the legitimacy evaluation:

"Whether the constituents in the non-hazardous secondary material are released to the air, water or land from the point of generation to the point just prior to combustion of the secondary material at levels comparable to what would otherwise be released from traditional fuels."

Given that Fiberight plans to dry this material, there is a question as to the environmental fate of the volatile organic compounds (VOCs) that are expected to be present in the PHS. **Again, lacking this information, this precludes its management as a fuel rather than a solid waste.**

As-fired moisture data is required for an energy balance and also to determine the volume of flue gases and proper sizing of the downstream air pollution control equipment (APC). Regarding the APC CES has made this statement, however the supporting data for as-fired moisture content has not been submitted:

"*In the application of the boilers proposed for the Fiberight facility, the relatively low moisture content of the emissions (approximately 13%) would not be expected to result in condensable particulates and subsequent overloading of associated fabric filters*." [page 8]

Increased volumetric air flow from moisture is a significant consideration that impacts fan/duct sizing along with sizing and efficacy of air pollution equipment. These factors could also greatly impact capital and operating costs.

These are very basic regulatory issues that have not been effectively addressed by applicant. Until these issues are addressed, the Department should reject this application until such time as Fiberight decides upon a final design, and submits the appropriate data to support its claims.

Sincerely,

Keith A. Bowden

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