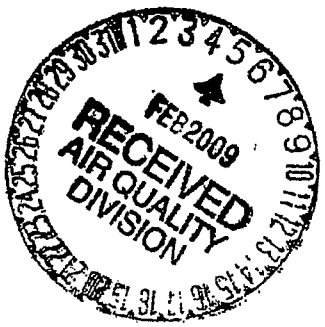
DKRW Advanced Fuels™

DKRW Advanced Fuels
Two Riverway, Suite 1780
Houston, Texas 77056 USA
713.425.6520 phone
713.355.3201 fax

February 3, 2009

Chad Schlichtemeier
Air Quality NSR Program Supervisor
Air Quality Division
Wyoming Department of Environmental Quality
122 West 25th Street
Herschler Building, 4-W
Cheyenne, WY 82002



Subject: Medicine Bow Fuel & Power LLC
Proposed Integrated Gasification and Liquefaction Plant
(PSD Air Quality Permit Application AP-5873)
Response to WDEQ request for clarification regarding PM_{10}

Dear Chad Schlichtemeier,

We received the following information yesterday in an email from URS in response to a verbal question from Andrew Keyfauver yesterday about the PM_{10} emission calculations and BACT analysis in the Medicine Bow Fuel & Power air permit application that was prepared by URS Corp.

In summary:

The emission calculations, BACT anlaysis, and air quality impact analyses consider total PM_{10} (condensible + filterable fractions).

Details:

Emission Calculation

Refer to Appendix B of the permit application, page B-3 through B-11 for the turbines. Note on these calculation pages that a PM_{10} emission rate of 0.013 lb/MMBtu was used for the turbines, for an emission rate of 10 lb/hr. Refer also to Appendix C, for the manufacturer guarantee for the turbines. You can see on the manufacturer's sheet that 5 lb/hr PM_{10} is guaranteed, but this is noted to be only the front-half catch (the filterable fraction). This value was doubled, to 10 lb/hr, in order to account for the condensible fraction.

Next, refer to Appendix B, pages B-12 through B-15, for the heaters/boiler. Note the PM_{10} emission factor used is 7.5E-3 lb/MMBtu (7.6 lb/MMscf). This is directly from EPA's AP-42

MEDICINE BOW
EXHIBIT ZZ
PRE-HRG MEMO

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Date 2-6-09

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Houston, Texas 77056 USA
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document, Table 1.4-2, and is the emission factor for total PM_{10} (condensible + filterable).

Therefore, the PM_{10} combustion emissions in the application are based on emission factors for total PM_{10}.

Modeling/Ambient Impact Analysis

The ambient impact analysis for PM_{10} is based on the calculated emission rates. Thus, the ambient impact analysis considers total PM_{10} emissions.

BACT Analysis

Pages 4-15 through 4-16 of the permit application present the PM_{10} BACT analysis for the gas turbines. The bottom of page 4-15 presents the selected BACT (use of clean fuels with low potential PM_{10} emissions and good combustion practices), and notes the proposed PM_{10} permit limits for fuel gas mixture and natural gas combustion. Please note there is a typographical error on this page, as the emission factor of 0.013 lb/MMBtu is noted to be only the filterable portion. As stated above, and shown in Appendices B and C, this value represents both the filterable and condensible PM_{10} fractions. Therefore, this limitation should be considered as the total PM_{10} emission rate. The reference to filterable PM_{10} only is an error.

Pages 4-22 and 4-23 of the application presents the PM_{10} BACT analysis for the heaters and boiler. No reference is made in this section to either filterable or condensible PM_{10}, and the total PM_{10} emission factor used in the emission calculation is cited on page 4-23. Thus, the heater/boiler PM_{10} BACT analysis represents total PM_{10} emissions.

We hope the above information answers your question about PM_{10}. If you have any questions about this, please call or email me.

Sincerely,

Jude Rolfes
Senior VP Engineering, Construction and Asset Management

cc: Andrew Keyfauver, WY DEQ –Air Quality Division, Air Quality Engineer
Robert Moss, DKRW Advanced Fuels, Environmental & Permits Engineer
Susan Bassett, URS Corp, EH&S Air Quality Team Leader
Katrina Winborn, URS Corp, Sr. Air Quality Specialist