



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

December 30, 2008

Chad Schlichtemeier  
Wyoming Department of Environmental Quality  
Air Quality Division / NSR Program Manager  
Herschler Building  
122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002



**Subject: Medicine Bow Fuel & Power LLC  
Proposed Integrated Gasification and Liquefaction Plant  
(PSD Air Quality Permit Application AP-5873)  
Response to Public Comment/WDEQ Information Request**

Dear Mr. Schlichtemeier:

This letter is provided in response to a letter from Mr. Andrew Keyfauber, Wyoming Department of Environmental Quality (WDEQ), dated December 29, 2008, requesting additional information regarding emissions from the proposed Medicine Bow Fuel & Power LLC (MBFP) industrial gasification and liquefaction (IGL) plant. Specifically, the WDEQ requested that MBFP submit information regarding the following three items. Our responses follow each of the numbered items.

- 1. *The Division received a comment that the risk assessment of hazardous air pollutants does not, but should, include an assessment of elemental mercury and mercury compounds (Earthjustice Aug. 2008 Exhibit 2, Item 12). The Division requests Medicine Bow Fuel & Power, LLC to provide a response to this comment.*

Response: A risk assessment addressing elemental mercury emissions was included in the Revised HAP Risk Assessment submitted as Attachment 1 to the MBFP November 5, 2008 response to WDEQ's October 3, 2008 questions. With regard to acute noncancer risk, Table 5 of the Attachment 1 shows that the hazard quotient (HQ) for elemental mercury is  $2.22 \times 10^{-5}$  (unitless), based on a modeled short-term concentration of 0.00004 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). With regard to chronic noncancer risk (shown in Table 4), an HQ was not calculated

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because modeled annual mercury concentrations were  $0.00000 \mu\text{g}/\text{m}^3$ . However, if an HQ had been calculated based on an assumption that the maximum annual ambient concentration might be just under  $0.00001 \mu\text{g}/\text{m}^3$ , the HQ would be only  $3 \times 10^{-5}$  (unitless), which is well below an HQ threshold of 1. [Please note that the statement concerning the elemental mercury Reference Concentration (RfC) in Comment 12 of Earthjustice's Exhibit 2 is erroneous. The RfC for elemental mercury is  $3 \times 10^{-4}$  milligrams per cubic meter ( $\text{mg}/\text{m}^3$ ), which converts to  $0.3 \mu\text{g}/\text{m}^3$ , rather than  $3 \times 10^{-7} \mu\text{g}/\text{m}^3$  as asserted in the Earthjustice comment.]

MBFP will not emit the other mercury compounds (methyl mercury and mercury chloride, also referred to as mercuric chloride) mentioned in the Earthjustice Exhibit 2, Item 12 comment. Methyl mercury is not a pollutant known to be emitted from coal combustion or gasification. Mercuric chloride could potentially be emitted from coal combustion / gasification, along with elemental mercury. (Please note that risks associated with elemental mercury have been addressed, as noted in the paragraph above.) The MBFP process will remove mercuric chloride, which is soluble in water, during syngas conditioning in the following manner: raw syngas from the gasifiers enters the syngas scrubbers, which use water to thoroughly wet and remove entrained particulate from the syngas. At  $470^\circ\text{F}$ , the mercuric chloride would be a solid at this point in the process. Due to its relatively high solubility, mercuric chloride would be removed in the syngas scrubbers. In the unlikely event that any mercuric chloride remained in the syngas after passing through the syngas scrubbers, it would be removed in the water wash, which is designed to remove ammonia and ammonia salts, prior to the mercury guard beds. Therefore, because MBFP will not emit these mercury compounds, no risk assessment for them is necessary.

- 2. The Division received a comment regarding  $\text{PM}_{10}$  emissions from ash (slag) handling and storage (Earthjustice Aug 2008, Exhibit 2, Item 17). The application represents this source as having no emissions as it's not expected to become airborne. Therefore, the Division is considering establishing a no visible emission limit for the slag handling and stockpiling operation. The Division requests Medicine Bow Fuel & Power, LLC to provide an evaluation of a no visible emissions limit on slag operations. If Medicine Bow Fuel & Power, LLC would not be able to demonstrate compliance with a no visible emission limit on slag operations a top-down BACT analysis for  $\text{PM}_{10}$  emissions will be need to be submitted.*

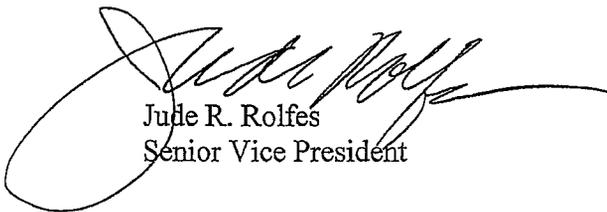
Response: MBFP accepts the no visible emissions requirement. The way the slag is washed prior to discharge removes potential fugitive dust.

3. *Medicine Bow Fuel & Power, LLC commented that the hours of operation for the Black Start Generators should be increased to 360 hours of operation per year. The Division requests clarification as to whether the increase in operating hours is needed for a cold-start year or is needed for every year of operation of the facility. The Division is considering to keep the hours of operation of the Black Start Generators limited to 250 hours.*

Response: The black start hours were revised to 360 hours per year to cover the initial cold-start year, so MBFP accepts 250 hours per year for subsequent years of operation after the initial cold-start year.

MBFP appreciates this opportunity to provide additional information to the WDEQ on issues raised during the public comment period and to clarify our application. We hope this information is useful for you, and encourage you to contact us if you have any more questions or if you need clarification on any of the points raised in this letter.

Sincerely,



Jude R. Rolfes  
Senior Vice President

cc: Andrew Keyfauver (WDEQ)  
Robert Moss (DKRW)  
Susan Bassett (URS)