

BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
OF THE STATE OF WYOMING

IN THE MATTER OF:)	
BASIN ELECTRIC POWER COOPERATIVE)	Docket No. 07-2801
DRY FORK STATION,)	Presiding Officer, F. David Searle
AIR PERMIT CT-4631)	
_____)	

SUPPLEMENTAL EXPERT REPORT OF RANAJIT SAHU

1. My experience and qualifications are provided in my Expert Report dated May 8, 2008.
2. This report contains supplemental materials to my Expert Report dated May 8, 2008 and my Rebuttal Report dated July 1, 2008.

I. Additional Emissions Reductions Possible with BACT

3. In my Expert Report (Section C) and my Rebuttal Report (Section III), I provide my opinions that the proposed permit limits for NO_x and SO₂ do not meet the requirements for BACT, as required by the applicable regulations. Exhibit 1 shows the additional emissions reductions that would be possible if proper BACT limits were specified in the permit. The Table shows that, for SO₂, the potential emissions reduction with a proper BACT limit (from what is likely to be emitted under the specified emission limit in the permit) is approximately 953.5 tons per year. For NO_x, Exhibit 1 shows the similar emissions reductions possible under a range of possible BACT limits, lower than what is currently proposed. As shown, additional emissions reductions range from 83.2 tons per year (with a BACT limit of 0.045 lb/MMBtu) to 582.7 tons per year (with a BACT limit of 0.015 lb/MMBtu). These emissions reductions are significant.

II. Criticality of Addressing PM_{2.5}

4. As noted in my Expert and Rebuttal Reports, Dry Fork did not conduct a PM_{2.5} BACT analysis. Based on the potential emissions of PM₁₀ from the boiler (199.8 tons per year) and the fact that the proposed PM₁₀ control is a fabric filter, it is almost certainly true that the boiler is a major source of PM_{2.5} (i.e., potential PM_{2.5} emissions greater than 100 tons per year). Dry Fork should provide a complete emissions estimate for PM_{2.5} (including filterable and condensable fractions) for all proposed sources at the plant. This analysis is currently missing in the permit application, as well as in the entire record.

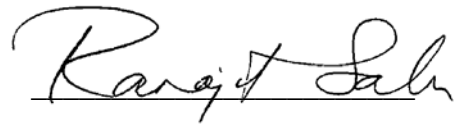
5. I have also reviewed ambient monitoring data for PM_{2.5}, as reported by the Wyoming DEQ.¹ For the time period 2004-2006, the measured 24-hour 98% average PM_{2.5} value for Sheridan (closest available monitor to the project site in Gillette) was 32 ug/m³. The primary and secondary 24-hour PM_{2.5} national ambient air quality standards (NAAQS) are exceeded when the three year average of the 98th percentile 24-hour concentrations exceed 35 ug/m³. Thus, measured PM_{2.5} ambient levels, without the Dry Fork project, and without any likely growth impacts between 2006 and the expected start of the Dry Fork project are already over 91% of the NAAQS. It is therefore not possible to simply assume, without a detailed emissions inventory and modeling analysis, that the 24-hour PM_{2.5} NAAQS will be protected after the Dry Fork project begins emitting PM_{2.5}. These missing analyses should therefore be done.

¹ See Attachment 1 to letter dated December 11, 2007 from Gov. Dave Freudenthal to Mr. Robbie Roberts, US EPA (attached as Exhibit 2).

I declare under penalty of perjury that the statements in this report are true and accurate to the best of my knowledge.

July 30, 2008

Date

A handwritten signature in cursive script that reads "Ranajit Sahu". The signature is written in black ink and is positioned above a horizontal line.

Dr. Ranajit Sahu

EXHIBIT 1

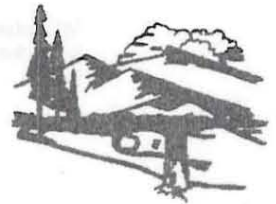
Exhibit 1 - Dry Fork Station - NOx and SO2 Potential Annual Emissions Reductions w/BACT

Max. Hourly Heat Input (MMBtu/hr)	3801							
Max. Annual Heat Input (MMBtu/yr)	33296760							
 <u>NOx</u>								
Permitted NOx BACT (lb/MMBtu)	0.05							
Permitted NOx Annual Emissions (tons/yr)	832.4							
 Suggested NOx BACT Levels (lb/MMBtu)	 0.015	 0.02	 0.025	 0.03	 0.035	 0.04	 0.045	
Emissions with Suggested NOx BACT Levels (tons/yr)	249.7	333.0	416.2	499.5	582.7	665.9	749.2	
Potential Reductions with Suggested NOx BACT (tons/yr)	582.7	499.5	416.2	333.0	249.7	166.5	83.2	
 <u>SO2</u>								
Permitted SO2 BACT (lb/MMBtu)	0.07							
Permitted SO2 Annual Emissions (tons/yr) (WFGD=89% eff.)	1165.4							
Permitted SO2 Uncontrolled SO2 (tons/yr)	10594.4							
 Suggested SO2 BACT (WFGD @98% eff) Emissions (tons/yr)	 211.9							
Potential Reductions with Suggested SO2 BACT (tons/yr)	953.5							

EXHIBIT 2



Department of Environmental Quality



To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Dave Freudenthal, Governor

John Corra, Director

December 11, 2007

Mr. Robbie E. Roberts, Regional Administrator
US Environmental Protection Agency, Region 8
1595 Wynkoop Street
Denver, CO 80202 - 1129

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Dear Mr. Roberts,

USEPA RA'S OFFICE

In response to 107(d)(1) of the Clean Air Act, the State of Wyoming is making recommendations on attainment or nonattainment classifications for the State of Wyoming for the 24-hour PM_{2.5} National Ambient Air Quality Standard that became effective on December 18, 2006.

The State has used the most recent three years of PM_{2.5} monitoring data available to make attainment recommendations. The results and supporting data are found in Attachments 1 and 2 to this letter. The State used guidance issued by EPA on June 8, 2007 in a memorandum from Robert J. Meyers entitled "Area Designations for the Revised 24-Hour Fine Particulate National Ambient Air Quality Standard" to determine appropriate boundaries for state designations. The guidance suggests not only using PM_{2.5} monitored data, but also using nine factors to appropriately create non-attainment boundaries. Additionally, EPA gave the option of flagging PM_{2.5} data affected by natural events during the most recent three years of data collection. The State of Wyoming did not flag any data used in this designation. Based on this guidance, the State would like to designate the regions listed below as attainment/unclassifiable for the Revised 24-Hour PM_{2.5} Standard.

<u>Region</u>	<u>24-hour PM_{2.5} NAAQS Designation</u>
Albany County	Attainment/Unclassifiable
Big Horn County	Attainment/Unclassifiable
Campbell County	Attainment/Unclassifiable
Carbon County	Attainment/Unclassifiable
Converse County	Attainment/Unclassifiable

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<u>Region</u>	<u>24-Hour PM_{2.5} NAAQS Designation</u>
Crook County	Attainment/Unclassifiable
Fremont County	Attainment/Unclassifiable
Goshen County	Attainment/Unclassifiable
Hot Springs County	Attainment/Unclassifiable
Johnson County	Attainment/Unclassifiable
Laramie County	Attainment/Unclassifiable
Lincoln County	Attainment/Unclassifiable
Natrona County	Attainment/Unclassifiable
Niobrara County	Attainment/Unclassifiable
Park County	Attainment/Unclassifiable
Platte County	Attainment/Unclassifiable
Sheridan County	Attainment/Unclassifiable
Sublette County	Attainment/Unclassifiable
Sweetwater County	Attainment/Unclassifiable
Teton County	Attainment/Unclassifiable
Uinta County	Attainment/Unclassifiable
Washakie County	Attainment/Unclassifiable
Weston County	Attainment/Unclassifiable
City of Casper	Attainment/Unclassifiable
City of Cheyenne	Attainment/Unclassifiable
City of Cody	Attainment/Unclassifiable
City of Evanston	Attainment/Unclassifiable

<u>Region</u>	<u>24-Hour PM_{2.5} NAAQS Designations</u>
City of Gillette	Attainment/Unclassifiable
City of Jackson	Attainment/Unclassifiable
City of Lander	Attainment/Unclassifiable
City of Laramie	Attainment/Unclassifiable
City of Pinedale	Attainment/Unclassifiable
City of Riverton	Attainment/Unclassifiable
City of Rock Springs	Attainment/Unclassifiable
City of Sheridan	Attainment/Unclassifiable

There are portions of the above-mentioned counties which are under the jurisdiction of Tribal Authorities. It is our understanding that Tribal designations will be made separately from State designations.

We look forward to your timely review and approval of this request. If you have any questions concerning the details of this recommendation, please feel free to contact - Air Quality Division Administrator, Dave Finley, at 307-777-3746.

Best Regards,



Dave Freudenthal
Governor

Cc: John V. Corra, DEQ Director
Dave Finley, AQD Administrator
Tina Anderson, AQD
Cara Keslar, AQD
Chad Schlichtemeier, AQD

ATTACHMENT 1: PM_{2.5} Monitored Data in Wyoming 2004-2006

The primary and secondary 24-hour PM_{2.5} standards are met when the three year average of the 98th percentile 24 hour concentrations, as determined in accordance with the 40 CFR 50, Appendix N, is **less than or equal to 35 µg/m³**. The following table presents data collected from 2004-2006 that have met the data collection requirements presented in Appendix N. Data from other PM_{2.5} monitoring sites have not collected 3 full years of data can be found in Attachment 2.

Monitoring Site	2004-2006 24-hour 98% average (µg/m ³)
SLAMS	
Cheyenne – Emerson Building	13
Sheridan – Police Station	32
Lander – Northside School	31