

Shannon Anderson (Wyoming Bar No. 6-4402)
Powder River Basin Resource Council
934 N. Main Street
Sheridan, WY 82801
(307) 672-5809 Voice
(307) 672-5800 Fax
sanderson@powderriverbasin.org

Andrea Issod (Calif. Bar No. 230920)
Sierra Club
85 Second St, 2nd Floor
San Francisco, CA 94105
(415) 977-5544 Voice
(415) 977-5793 Fax
andrea.Issod@sierraclub.org

Daniel Galpern (Oregon State Bar No. 06195)
David A. Bahr (Oregon State Bar No. 90199)
Western Environmental Law Center
1216 Lincoln Street
Eugene, OR 97401
(541) 485-2471 x114 Voice
(541) 485-2471 x108 Voice
(541) 485-2457 Fax
galpern@westernlaw.org
bahr@westernlaw.org

Sierra Club's Attorneys

**BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

IN THE MATTER OF:) Docket No. 09-2801
MEDICINE BOW FUEL & POWER,)
LLC AIR PERMIT CT-5873)

**SIERRA CLUB'S
STATEMENTS OF FACT IN SUPPORT OF SUMMARY JUDGMENT**

Pursuant to W.R.Civ.P. 56.1, Sierra Club hereby submits the following
statements of material fact for which it contends there is no genuine controversy:

STATEMENTS OF FACT RELEVANT TO PM2.5 CLAIM

1. DEQ admits it did not conduct or review a reasonableness inquiry of PM2.5 for the Medicine Bow facility. Keyfauver Depo., exhibit 1, at 89-92.
2. Nothing in the Permit Application, DEQ's Application Analysis, or its Response to Comments shows any correlation between PM10 and PM2.5 emissions from the Medicine Bow facility, nor any demonstration that the chosen PM10 controls will effectively control PM2.5. *See* Application, December 31, 2007 (AR 78-1 to 382); DEQ Analysis, June 19, 2008 (AR 506-82); DEQ Decision Document, March 4, 2009 (AR 30-64)
3. Medicine Bow did not show any correlation between PM10 and PM2.5 emissions from the Medicine Bow facility, nor any demonstration that the chosen PM10 controls will effectively control PM2.5 in the record. *See* Application, December 31, 2007 (AR 78-1 to 382).

STATEMENTS OF FACT RELEVANT TO SO₂ CLAIM

4. The Medicine Bow project design includes construction of two flares to release and combust syngas at startup, shutdown and upset events when the downstream units cannot accommodate the gas. Medicine Bow Resp. ¶36.
5. Normal operation of the flares is defined as including operation in connection with startup, shutdown, and malfunction (SSM) events. *Id.*
6. Medicine Bow's estimated SO₂ emissions are just under the 40 tons per year (tpy) major source significance threshold at 36.6 tpy, excluding SSM emissions

from flares. Permittee Resp. to Appeal ¶ 43; DEQ Decision Document, March 4, 2009 at 10 (AR 39).

7. Medicine Bow estimates emissions of SO₂ from the flares during anticipated malfunctions will be 164.56 tpy. Medicine Bow Resp. ¶41-42; Application, December 31, 2007, Appendix B, p. 1 (AR 78-187).

8. The Application and DEQ's Permit Application Analysis estimated SO₂ emissions of 256.69 tpy from cold starts and malfunctions, which they do not include in the potential to emit (PTE). Medicine Bow Resp. ¶41-42; Application, December 31, 2007, Appendix B, p. 1-2 (AR 78-187 to 88); DEQ Analysis, June 19, 2008, p. 7-9 (AR 512-14).

9. Medicine Bow admits that if flare SSM emissions were considered, SO₂ emissions would exceed the PSD major source significance threshold. Permittee Resp. to Appeal ¶ 43.

10. DEQ admits that Medicine Bow's estimate of malfunction emissions means that malfunctions are likely to occur. Keyfauver depo., exhibit 1, at 23:11-17.

11. Medicine Bow admits that cold startups will occur at least every three or four years. DKRW letter to WYDEQ, November 11, 2008 (AR 1485).

12. On October 14, 2008, Medicine Bow stated, “[t]otal potential SO₂ emissions in the initial year of operation and also in following years, including normal startups, are both estimated to be 227.7 tons per year.” DKRW Letter to DEQ Response to Public Comment, October 14, 2008 (AR 1529). MBFP acknowledged this

is above the SO₂ significance threshold and SO₂ emissions require PSD Review. *Id.* (AR 1529).

13. The United States Environmental Protection Agency (EPA) specifically addressed the applicability of PSD to SO₂ in its comments to WYDEQ on August 4, 2008. US EPA Region 8 Comments to DEQ, August 4, 2008 (AR 1656-67). EPA stated:

More analysis needs to be provided explaining why the proposed facility has not been determined to be a major source of sulfur dioxide (SO₂). Table Va on page 8 of the Division's analysis, as well as page B-2 of Medicine Bow Fuel and Power's (MBFP's) application, indicate that the emission of sulfur dioxide (SO₂) during the initial cold startup year would be 256.9 tons per year (tpy). During any other cold startup year, SO₂ emissions would equal 227.74 tpy in addition to the tonnage emitted in normal operational mode for the remainder of the year. Both scenarios would cause the emission of greater than 40 tpy of SO₂, which is the significance threshold for Prevention of Significant Deterioration (PSD) applicability. The regulations do not provide exemptions for excluding startup emissions from a facility's Potential To Emit (PTE). The current record appears to indicate that all PSD requirements should apply for SO₂; however table VI on page 9 of the Division's analysis indicates that PSD requirements do not apply to the facility for SO₂.

Id. (AR 1658).

14. EPA also stated concern over the additional flare SO₂ emissions from "malfunctions and *other events*." *Id.* (AR 1658) (emphasis in original).

15. There was no BACT analysis for SO₂ from the flares in the Permit Application or DEQ's Application Analysis. Application, December 31, 2007 (AR 78-1 to 382); DEQ Analysis, June 19, 2008 (AR 506-82).

16. There was no BACT analysis for any other pollutant from the flares. DEQ Analysis, June 19, 2008 (AR 506-82).

17. DEQ admits, “a top-down BACT analysis was not conducted for the flares...” Keyfauver Depo., exhibit 1, at 45:24-25.

18. DEQ applied the five-step BACT process to sulfur dioxide emissions from the turbines and to the sulfur recovery unit in the permit application analysis and listed one of the flares as a control for SO₂ emissions. DEQ Analysis, June 19, 2008 (AR 528-29).

19. DEQ admits it did not consider other options for the flares other than the proposed SSEM plan. Keyfauver Depo., exhibit 1, at 46:18-47:4; *Id.* at 51:11-15; *See Id.* at 57:20-22.

20. There is no determination in the record that an emissions limitation is technically infeasible for the flares. *See* Application, December 31, 2007 (AR 78); DEQ Analysis, June 19, 2008 (AR 506-82); DEQ Decision Document, March 4, 2009 (AR 30-64)

21. EPA requested DEQ set BACT limits on the flares and implement a SSEM plan. US EPA Region 8 Comments to DEQ, Aug. 4, 2008 (AR 1656-61).

22. EPA informed DEQ in its comments on the Application they did not conduct a proper BACT analysis. US EPA Region 8 Comments to DEQ, Aug. 4, 2008 (AR 1656-61).

23. EPA Comments on the DEQ Application Analysis specifically noted that limits had not been set for all emitting units, including the flares. *Id.* (AR 1659 & 1661).

24. EPA stated DEQ's BACT analysis needed to address the flares and include parameters such as operating hour limits as enforceable conditions in the Permit. *Id.* (AR 1660-61). "If the Plan is a meaningful tool, it should provide requirements rather than suggestions." *Id.* (AR 1666-67).

25. DEQ issued Permit CT-5873 with no limit on flare emissions, flare hours of operation, or total SO₂ emissions. Air Quality Permit and SSEM Plan from DEQ, March 4, 2009 (AR 1409-24).

26. DEQ revised Condition 22 to require monitoring SO₂ emissions from the flares and added three other conditions related to the flares but none limit their use or emissions. *Id.* at 7-8 (AR 1415-16).

27. The SSEM plan attached to the Permit did not include any limits to the amount of syngas sent to the flares or the number of hours they could be used for flaring. *Id.* at Appendix A (AR 1420-24).

28. The DEQ Permit does not set forth the emissions reduction achievable by implementation of the SSEM plan, nor does it provide for compliance for work standard substitution. *Id.* at Appendix A (AR 1420-24)

29. DEQ admits the SSEM plan contains a number of unenforceable provisions. Keyfauver Depo., exhibit 1, 58:4-9; *Id.* at 59:8-60-9.

///

STATEMENTS OF FACT RELEVANT TO HAZARDOUS AIR POLLUTANT CLAIMS

30. Major sources of hazardous air pollutants (HAPs) are those with the potential to emit (PTE) 10 tons per year (tpy) or more of any single regulated HAP, or 25 tpy or more of any combination of HAPs. 42 U.S.C. § 7412 (a)(1).

31. Medicine Bow's final Application through May 2008 identified its facility as a major source of HAPs. Application 1-2 (AR 942) and 1-7 (AR 943).

32. In June 2008 DEQ accepted that the Medicine Bow facility would be a major source of HAPs. DEQ Analysis, 7 (AR 512).

33. In March 2009, DEQ concluded that the Medicine Bow facility would be a minor source of HAP emissions, basing its reversal on "[r]evised emission calculations" that it had received from Medicine Bow. DEQ Decision Document at 7 (AR 36).

34. DEQ requires Medicine Bow, once its facility is built, to utilize the same methodology as Medicine Bow used in its permit application to report total annual total HAP and total speciated HAP emissions. DEQ Decision Document at 30 (AR 59).

35. DEQ accepted Medicine Bow's decision to not include in its PTE for HAPs those emissions stemming from flares during shutdown or startup for major maintenance or repair. DEQ Analysis, 7-8 (AR 512-13).

36. Medicine Bow's decision to not include in its facility PTE calculations HAP and other emissions stemming from flares during certain shutdown or startup

events was made without consideration of whether any federal or state statute or rule supported the decision to exclude such emissions. Katrina Winborn Depo., exhibit 16, at 45: 1-18.

37. DEQ did not render its own accurate count of fugitive emission components and did not verify any of the component counts offered by Medicine Bow in the latter's VOC and HAP PTE calculations. Keyfauver Depo., exhibit 1, at 62: 10-22.

38. DEQ did not verify whether the emission factors utilized by Medicine Bow were appropriate for use in its emission estimate for fugitive component leaks. Keyfauver Depo., exhibit 1, at 72: 14-18.

39. DEQ accepted Medicine Bow's decision to utilize Synthetic Organic Chemical Manufacturing Industry (SOCMI) SOCMI averages as emission factors for VOC and HAP PTE determinations. Keyfauver Depo., exhibit 1, at 72-74.

40. Medicine Bow did not independently assess whether it was appropriate to utilize SOCMI average emission factors in its PTE calculations for VOC and HAP emissions at the facility. Winborn Depo., exhibit 16, at 105.

41. Medicine Bow did not utilize EPA's preferred method, requiring use of actual emissions data as opposed to average estimates, in its PTE calculations for estimating maximum fugitive VOC and HAP emissions. Winborn Depo., exhibit 16, at 103: 24.

42. DEQ and Medicine Bow did not calculate the likelihood that actual total HAP emissions would exceed 25 tons per year, and did not calculate the likeli-

hood that actual methanol emissions would exceed 10 tons per year. Winborn Depo., exhibit 16, at 145-46

43. Medicine Bow is a major source of VOC emissions required to utilize the best available control technology (BACT) to limit VOC emissions. Application 4-1 (AR 78-56).

44. Fugitive sources are expected to account for 60 tons per year of VOC emissions, nearly a third of total VOC emissions. Application 4-1 and 4-27 (AR 78-56, -82).

45. Fugitive VOC emissions, including HAP emissions, stem from leaks in valves, pumps, flanges, compressors, connectors, and other components. EPA Enforcement Alert, exhibit 17, at 1.

46. Poorly designed and implemented lead detection and repair (LDAR) programs can miss up to 90 percent of detectable, repairable leaks, while the use of adequate practices –including use of lower than required leak definitions – can “improve the reliability of monitoring data and LDAR compliance.” *Id.*

47. Medicine Bow was required to undertake a top-down analysis of VOC emissions. Application 4-1 to 4-2 (AR 78-56 to 57).

48. Medicine Bow’s did not undertake a top-down analysis of fugitive VOC emissions because it identified only one fugitive VOC/HAP control technology, a Leak Detection and Repair (LDAR) program. Application 4-27 (AR 78-82).

49. Under Medicine Bow’s proposed LDAR program, the obligation to replace or repair a valve or connector obtains when a leak is found at a rate equal to

or exceeding 500 ppm; for pumps, the obligation obtains when a leak is found at a rate of at least 2,000 ppm. Application 4-27 (AR 78-82).

50. DEQ accepted Medicine Bow's LDAR program as BACT because its leak detection levels were based on federal performance standards for new sources. DEQ Analysis at 20 (AR 525); DEQ Decision Document at 16 (AR 1440). Keyfauver Depo., exhibit 1 at 79:6-18.

51. DEQ did not conduct any top-down BACT analysis for fugitive VOC from the Medicine Bow plant *Id.*; DEQ Analysis at 10 (AR 515).

52. New source performance standards establish the floor, and not the ceiling, for BACT. NSR Workshop Manual at B.12, *available at* <http://www.epa.gov/ttn/nsr/gen/wkshpman.pdf>; 40 C.F.R. parts 60 and 61.

53. DEQ did not consider leakless component technology as a means of controlling fugitive VOC emissions from the Medicine Bow facility. Keyfauver Depo., exhibit 1 at 80:14-17

54. Medicine Bow did not consider leakless component technology as a means of controlling fugitive VOC emissions from the Medicine Bow facility. Winborn Depo, exhibit 16 at 108-09.

55. Enhanced LDAR programs are utilized by other facilities that incorporate leak detection rates to control fugitive emissions for valves and connectors to less than 200ppm. MARAMA Model Rule for Enhanced LDAR, exhibit 20 at 2-3, available at www.marama.org/Projects/021907_ModelRule_EquipmentLeaks.pdf.

56. DEQ did not consider any alternatives to Medicine Bow's selected method for the control of fugitive VOC and HAP emissions. Keyfauver Depo., exhibit 1, at 75: 6-15.

**STATEMENTS OF FACT RELEVANT TO
FUGITIVE EMISSION CLAIM**

57. The DEQ approved the issuance of a permit to Medicine Bow Fuel and Power, LLC for the construction of an underground coal mine and industrial liquefaction and gasification. DEQ Decision Document, March 4, 2009 at 29 (AR 58).

58. The DEQ failed to require the use of short term (24 hour) modeling of fugitive particulate matter in determining compliance with PSD increment and NAAQS/ WAAQS requirements. DEQ Decision Document, March 4, 2009 at 14 (AR 43).

59. DEQ based their decision not to require short-term modeling of fugitive PM on a 1993 Memorandum of Agreement between EPA and DEQ. *Id. See also* Memorandum of Agreement on Procedures for Protecting PM10 NAAQS in the Powder River Basin, December 22, 1993 at 2 (AR 3571-73) (purporting to detail PM10 monitoring policy in the Powder River Basin).

60. The proposed site of the Medicine Bow facility is located approximately 100 miles southwest of the Powder River Basin. *See* Application, 1-2 (AR 78-23) (describing the proposed location of the facility).

61. DEQ and other permitting authorities routinely include short term (24 hour) modeling of fugitive emissions of particulate matter to demonstrate compliance with PSD increment and NAAQS/ WAAQS requirements. *See* Dry Fork Gen-

erating Station, Gillette, Wyoming, Basin Electric Power Cooperative DEIS prepared in August 2007 (PM10 modeling on page 4-26). Available at:

http://www.usda.gov/rus/water/ees/pdf/Basin_DF_DEIS/Basin%20Dry%20Fork%20DEIS%20Ch4-7%200907.pdf (describing the 24 hour PM10 impact including fugitive emissions).

62. Other examples of facilities applying 24-hour modeling of fugitive emissions of particulate matter to demonstrate compliance with PSD increment and NAAQS/ WAAQS requirements include:

- Highwood Generating Station, Great Falls, Montana;¹
- Ely Energy Center, Ely, Nevada;²
- White Pine Energy Station, Ely, Nevada;³

- Plant Washington, Sandersville, Georgia;⁴
- Longleaf Energy Station, Hilton, Georgia;⁵
- Hyperion Energy Center, Union County, South Dakota;⁶
- Kentucky NewGas, Central City, Kentucky;⁷
- Advanced Supercritical Pulverized Coal (ASCPC) Project, Essexville, Michigan⁸;

¹ Highwood Generating Station, Great Falls, Montana¹, Southern Montana Electric Cooperative Inc. Final EIS prepared in January 2007. Available at http://www.deq.mt.gov/eis/HighwoodGeneratingStation/Voll/H%20-%20FEIS%20Vol.%20I%20-%20Chapter%204_Environmental%20Consequences.pdf

² Ely Energy Center, Ely, Nevada. Sierra Pacific Resources. Appendix 9 – Air Quality Impact Analysis prepared in October 2007. Available at <http://ndep.nv.gov/bapc/download/ely/A9.pdf>

³ White Pine Energy Station, Ely, Nevada. White Pine Energy Associates/LS Power. Appendix 8 – Environmental Evaluation and Dispersion Modeling Files prepared in December 2006. Available at <http://ndep.nv.gov/bapc/download/ls/app8.pdf>

⁴ Plant Washington, Sandersville, Georgia Power4Georgia, LLC. PSD Permit Application prepared in January 2008. Available at: <http://www.air.dnr.state.ga.us/airpermit/downloads/permits/psd/dockets/plantwashington/facilitydocs/30300051app.pdf>

⁵ Longleaf Energy Station, Hilton, Georgia. LS Power. PSD Permit Application prepared in November 2004. Available at: http://www.air.dnr.state.ga.us/airpermit/downloads/permits/psd/dockets/longleaf/facilitydocs/Longleaf_PSD_Applic.pdf

⁶ Hyperion Energy Center, Union County, South Dakota. Hyperion Refining LLC. PSD Permit Application prepared in December 2007. Available at: http://www.hyperionec.com/files/HEC_SD_PSD_App.pdf

⁷ Kentucky NewGas, Central City, Kentucky. Kentucky SynGas, LLC. Air Permit Application – Volume 2 Air Modeling Report prepared in December 2008.

⁸ Advanced Supercritical Pulverized Coal (ASCPC) Project, Essexville, Michigan. Consumers Energy. PSD Permit Application – Section 6 Ambient Impact Analysis. prepared in October 2007. Available at:

- Virginia City Hybrid Energy Center, Wise County, Virginia⁹

63. The proposed Medicine Bow facility is a major source of PM emissions for PSD purposes. Application, 1-3, December 31, 2007 (AR 78-23).

Respectfully submitted this 20th day of November, 2009.

/s/ Shannon Anderson
Shannon Anderson (Wyoming Bar No. 6-4402)
Powder River Basin Resource Council
934 N. Main Street
Sheridan, WY 82801
(307) 672-5809 Voice
(307) 672-5800 Fax
Email: sanderson@powderriverbasin.org

<http://www.deq.state.mi.us/aps/downloads/permits/CFPP/2007/341-07/Section%206%20-%20Ambient%20Impact%20Analysis.pdf>

⁹ Virginia City Hybrid Energy Center, Wise County, Virginia. Virginia Dominion Power. PSD Permit Application Volume II Class II Air Quality Modeling. Prepared in February 2007 and updated in August 2007.

Andrea Issod
Sierra Club
85 Second St, 2nd Floor
San Francisco, CA 94105
Telephone: (415) 977-5544
Facsimile: (415) 977-5793
Email: andrea.issod@sierraclub.org

David Bahr
Daniel Galpern
Western Environmental Law Center
1216 Lincoln Street
Eugene, OR 97401
Telephone: (541) 485-2471, ext. 108
Facsimile: (541) 485-2457
Email: bahr@westernlaw.org
Email: galpern@westernlaw.org

CERTIFICATE OF SERVICE

I hereby certify that I have caused to be served a true and correct copy of the forgoing *Sierra Club's Statements of Fact in Support of Summary Judgment* and associated documents via electronic mail on this the 20th day of November, 2009 to the following:

John Corra
Director, DEQ
jcorra@wyo.gov

Nancy Vehr
Sr. Asst. Attorney General
nvehr@state.wy.us

Jude Rolfes
Medicine Bow Fuel & Power
jrolfes@dkrwaf.com

Mary Throne
Throne Law
mthrone@thronelaw.com

Hickey & Evans
bhayward@hickeyevans.com

John A. Coppede
Hickey & Evans
jcoppede@hickeyevans.com

Andrea Issod
Andrea Issod
Sierra Club