

1. I am over the age of twenty-one (21) and am competent to make this affidavit.
2. The facts and matters stated herein are within my personal knowledge and are true and correct.
3. I have a Bachelor of Science degree in chemical engineering which I received from the University of Arkansas in 1992. I also have a Master of Science in environmental policy and management which I received from the University of Denver in 2003.
4. I am a licensed professional engineer in environmental engineering in the states of Wyoming, Colorado and Louisiana. Since about December 2007, I have been employed with URS Corporation as an air quality specialist and am currently a senior air quality specialist with URS Corporation.
5. I have over seventeen years of professional experience in the fields of process engineering and air permitting, including industrial-sector responsibilities implementing the federal Clean Air goals and compliance at two large oil refineries and one major coal-fired electric power generation plant.
6. I have approximately ten years of experience in developing regulatory and policy expertise in the federal Clean Air Act, including hands on responsibilities in implementing environmental projects which have involved control technologies and emissions analyses and reductions at the industrial plant level. I also have approximately seven years of experience as an air compliance consultant.

7. I work as an air quality consultant wherein I assist clients with obtaining air quality construction and operating permits and assisting them with a wide variety of air quality compliance issues. The majority of my clients are either located or have facilities operating in the Rocky Mountain region, although I continue to work with clients and facilities located across the United States. I primarily work with clients in the oil and gas sector, including upstream exploration & production/wellhead facilities, midstream operations, and transmission facilities, petroleum/petrochemical production, other chemical production, power generation, cement manufacturing, and ethanol production.

8. I have worked with over fifteen Prevention of Significant Deterioration permits and numerous other air quality construction permitting projects involving complex emission calculations, including netting analyses, as prescribed by the New Source Review regulation. I have also worked on numerous air quality operating permit projects to obtain initial permits, renewal permits and revised permits following permitted modifications to facilities which required subsequent operating permit modification.

9. I worked with other people on our air team at the URS-Denver office to put together the application submitted to the WDEQ on behalf of Medicine Bow Fuel & Power. I have prepared a September 15, 2009 written expert report containing my opinions in this matter a true and accurate copy of which is attached hereto as Exhibit 1 and incorporated herein by this reference.

10. The primary contributors to particulate matter (PM) emissions at the proposed Medicine Bow Fuel & Power facility are the GE gas combustion turbines and fugitive emissions associated with coal storage and material handling.

11. It is my understanding that since 1997 Wyoming DEQ/AQD has followed the EPA's guidance addressing the Interim Implementation of New Source Review Requirements for PM_{2.5} which permits the agency to consider PM₁₀ as a surrogate for PM_{2.5}. It was reasonable for DEQ/AQD to analyze PM_{2.5} for the Medicine Bow Fuel & Power facility using the EPA policy of considering PM₁₀ as a surrogate for PM_{2.5}. First, in general, gas combustion turbines do not produce significant amounts of PM, and it is assumed that the PM they produce is smaller in size than 1 micrometer. No difference exists between the emission control selected for PM₁₀ versus PM_{2.5} in that no additional control for PM_{2.5} can be achieved over what has currently been proposed. Attached hereto as Exhibit 2 is a September 3, 2009 GE paper regarding GE's position on PM from gas combustion turbines which states that "it would be expected that the majority of emissions fall under the PM_{2.5} designation..." and concludes that "due to the limited amount of size speciated PM emissions data from gas turbines, GE is forced to conclude to assume that PM_{2.5} and PM₁₀ levels are equal to the current values used for total PM when providing both emission estimate and guarantees." These statements from the turbine manufacturer reinforce the validity of the DEQ/AQD decision to consider PM₁₀ as a surrogate for PM_{2.5} for the proposed GE gas combustion turbines.

