Montana Department of
ENVIRONMENTAL QUALITY
Brian Schweitzer, Governor
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March 24, 2009

James Parker
PPL Montana, LLC
Colstrip Steam Electric Station
580 Willow Ave., P.O. Box 38
Colstrip, MT 59323

Dear Mr. Parker:

The Department of Environmental Quality (Department) has made its decision on the Montana Air Quality Permit application for PPL Montana, LLC, Colstrip Steam Electric Station. The application was given permit number 0513-07. The Department's decision may be appealed to the Board of Environmental Review (Board). A request for hearing must be filed by April 8, 2009. This permit shall become final on April 9, 2009, unless the Board orders a stay on the permit.

Procedures for Appeal: Any person jointly or severally adversely affected by the final action may request a hearing before the Board. Any appeal must be filed before the final date stated above. The request for a hearing shall contain an affidavit setting forth the grounds for the request. Any hearing will be held under the provisions of the Montana Administrative Procedures Act. Submit requests for a hearing in triplicate to: Chairman, Board of Environmental Review, P.O. Box 200901, Helena, Montana 59620.

Conditions: See attached.

For the Department,

Vickie Walsh
Air Permitting Program Supervisor
Air Resources Management Bureau
(406) 444-3490

Brent Lignell
Environmental Engineer
Air Resources Management Bureau
(406) 444-5311

VW:BL
Enclosures

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air Resources Management Bureau
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FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: PPL Montana, LLC – Colstrip Steam Electric Station

Air Quality Permit Number: 0513-07

Preliminary Determination Issued: 02/17/09
Department Decision Issued: 03/24/09
Permit Final:

1. *Legal Description of Site:* The PPLM Colstrip facility is located in Section 34, Township 2 N, Range 41 E in Rosebud County, Montana.

2. *Description of Project:* PPLM is proposing to install and operate, on each Unit 1-4, mercury emission controls in conjunction with an MEMS.

3. *Objectives of Project:* The project will reduce current mercury emission levels to a maximum of 0.9 lb/TBtu, calculated as a rolling 12-month average and will fulfill requirements of ARM 17.8.771 with respect to applying for a permit to include the applicable mercury emission standard and control strategy requirements.

4. *Alternatives Considered:* In addition to the proposed action, the Department also considered the "no-action" alternative. The "no-action" alternative would deny issuance of the air quality preconstruction permit to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because PPLM demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no-action" alternative was eliminated from further consideration.

5. *A Listing of Mitigation, Stipulations, and Other Controls:* A list of enforceable conditions, including a mercury control technology analysis, would be included in Permit #0513-07.

6. *Regulatory Effects on Private Property:* The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

7. *The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The "no-action" alternative was discussed previously.*

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Aquatic and Terrestrial Life and Habitats			X			Yes
B	Water Quality, Quantity, and Distribution			X			Yes
C	Geology and Soil Quality, Stability and Moisture			X			Yes
D	Vegetation Cover, Quantity, and Quality			X			Yes
E	Aesthetics			X			Yes
F	Air Quality			X			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources			X			Yes
H	Demands on Environmental Resource of Water, Air and Energy			X			Yes
I	Historical and Archaeological Sites				X		Yes
J	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The following comments have been prepared by the Department.

A. Terrestrial and Aquatic Life and Habitats

Any impacts resulting from the proposed project to terrestrial and aquatic life and habitats would be minor because all proposed activities would take place within the defined PPLM Colstrip property boundary, an existing industrial site. Further, minor impact to the surrounding area from the air emissions (see Section VII of the permit analysis) would be realized due to dispersion of pollutants.

Terrestrials (such as deer, antelope, rodents, and insects) would use the general area of the facility. The area around the facility is fenced to limit access to the facility. The fencing would likely not restrict access from all animals that frequent the area, but it may discourage some animals from entering the facility property. Therefore, any impacts to terrestrial and aquatic life and habitats would be minor.

B. Water Quality, Quantity and Distribution

Any impacts resulting from the proposed project to water quality, quantity, and distribution would be minor because all proposed activities would take place within the defined PPLM Colstrip property boundary, an existing industrial site. Further, minor impact to the surrounding area from the air emissions (see Section VII of the permit analysis) would be realized due to dispersion of pollutants.

Sorbents and coal combustion byproducts (CCB) used in, or resulting from, mercury control have been extensively studied and found to be stable from the standpoint of leachability of captured mercury and other metals. During the evaluations of mercury control technology at Colstrip and Corette, the stability of the used sorbents and CCB was tested using EPA's Toxic Chemical Leaching Procedure (TCLP) for metals. All leachates demonstrated levels of metals well within regulatory limits; most indicating no detectable levels of TCLP metals. Consequently, PPLM expects no impacts to the environment due to leachate from CCB.

In addition, the Department reviewed current literature on the subject of mercury leaching from CCBs. The literature is in substantial agreement on the point that mercury captured with activated carbon does not leach readily from fly ash. A number of leaching methods were used in

the reviewed analyses, including TCLP, a Synthetic Groundwater Leaching Procedure (SGLP), 30-day and 60-day long-term leaching tests, and adaptations of TCLP at lower (2.0) and higher (7.0) pH values. In many cases the dissolved mercury in the leachate was below detection limits, and in all cases was below Federal Maximum Contaminant Level for mercury in drinking water. The Department determined that the use of activated carbon for mercury control would not present a source of groundwater pollution.

C. Geology and Soil Quality, Stability and Moisture

Any impacts resulting from the proposed project to geology and soil quality, stability, and moisture would be minor because all proposed activities with respect to limits and practices associated with limiting mercury emissions would take place within the defined PPLM Colstrip property boundary, an existing industrial site. Further, minor impact to the surrounding area from the air emissions (see Section VII of the permit analysis) would be realized due to dispersion of pollutants.

D. Vegetation Cover, Quantity, and Quality

Any impacts resulting from the proposed project to vegetation cover, quantity, and quality would be minor because all proposed activities with respect to limits and practices associated with the proposed permit action would take place within the defined PPLM Colstrip property boundary, an existing industrial site. Further, minor impact to the surrounding area from the air emissions (see Section VII of the permit analysis) would be realized due to dispersion of pollutants.

E. Aesthetics

Minor impacts to the aesthetic nature of the area would result from the proposed PPLM permit action because all proposed activities would take place within the defined PPLM Colstrip property boundary, an existing industrial site. Any changes in operational practices to minimize mercury emissions may be visible from locations around the Colstrip site. However, the Colstrip site is a previously disturbed industrial location; any aesthetic impacts would be minor and consistent with current industrial land use of the area.

Overall, any impacts to the aesthetic nature of the project area from PPLM's proposed permit action, including construction activities and normal operations resulting in air emissions and deposition of air emissions would be minor.

F. Air Quality

The air quality impacts from the current permit action would be minor because Permit #0513-07 would include conditions limiting emissions of air pollution from the source, specifically by establishing a mercury emissions limit and requiring specific mercury emission control technology.

Department reviewed current literature on the possible loss of mercury to the atmosphere from coal combustion byproducts (CCBs), either as mercury vapor, or biologically-mediated dimethylmercury. Microbial methylation generally requires a good supply of organic matter and an approximately neutral pH level. Ash is generally very poor in organic matter and, in Montana, the ash is alkaline. Research on mercury methylation has indicated that the total mercury volatilization rate tends to be extremely small. The Department determined that it is very unlikely that any measurable amount of mercury could be released to the atmosphere from ash ponds.

Overall, any impacts to the air quality of the project area from PPLM's proposed permit action, including construction activities, normal operations resulting in air emissions, and deposition of air emissions would be minor and in compliance with all applicable state and federal ambient air quality standards.

G. Unique Endangered, Fragile, or Limited Environmental Resources

The Department contacted the Montana Natural Heritage Program (MNHP) in an effort to identify any species of special concern associated with the proposed site location. Search results concluded there are 12 resources in the area. Area in this case is defined by the township and range of the proposed site, with an additional one-mile buffer. The species of special concern identified by MNHP include *Rana pipens* (Northern Leopard Frog), *Centrocercus urophasianus* (Greater Sage-Grouse), *Melanerpes erythrocephalus* (Red-headed Woodpecker), *Spizella breweri* (Brewer's Sparrow), *Ammodramus savannarum* (Grasshopper Sparrow), *Sorex merriami* (Merriam's Shrew), *Phrynosoma hernandesi* (Greater Short-horned Lizard), *Sceloporus graciosus* (Common Sagebrush Lizard), *Heterodon nasicus* (Western Hog-nosed Snake), *Lampropeltis triangulum* (Milksnake), *Amorpha canescens* (Lead Plant), *Astragalus barrii* (Barr's Milkvetch).

The PPLM Colstrip site has historically been used for industrial purposes. Any changes in operation associated with minimizing mercury emissions would take place within the Colstrip site. Because industrial operations have been ongoing within the existing PPLM Colstrip property boundary for an extended period of time and potential permitted emissions from Colstrip show compliance with all applicable air quality standards, it is unlikely that any of these species of special concern would be affected by the proposed project. Overall, any impacts to any unique endangered, fragile, or limited environmental resources would be minor.

H. Demands on Environmental Resource of Water, Air and Energy

Demands on environmental resources of water, air, and energy would be minor. As previously discussed, the proposed permit action would establish a limit for allowable air emissions of mercury and mercury control practices. Therefore, any impacts to air resources in the area would be minor and would be in compliance with applicable standards. Any impacts to the local air resource would be minor as demonstrated through the ambient air quality impact analysis conducted for the proposed permit modification.

Regarding impacts to the environmental resource of water, this permit action does not include any increase in the demand for water. Therefore, any impacts to the demand for water resources in the affected area associated with PPLM Colstrip operations has been determined to be minor.

With respect to energy, the permit action would not change, in general, the overall amount of power used or produced.

Overall, any impacts to the demands on the environmental resources of water, air, and energy from PPLM's proposed permit action would be minor.

I. Historical and Archaeological Sites

In an effort to identify any historical and archaeological sites near the proposed project area, the Department contacted the Montana Historical Society, State Historic Preservation Office (SHPO). According to SHPO records there have been no previously recorded sites within the designated search locales; however, the absence of cultural properties in the area does not mean that they do not exist, but rather may reflect the absence of any previous cultural resource inventory in the area. SHPO records indicated no previous cultural resource inventory, but SHPO indicated there

was a low likelihood cultural properties would be impacted and did not feel a recommendation for a cultural resource inventory was warranted. The Department determined that due to the previous industrial disturbance in the area (the area is an active industrial site) and the small amount of land disturbance that may be required for the proposed permit action, it is unlikely that any undisturbed existing historical or cultural resource exists in the area and if these resources did exist, any impacts would be minor due to previous industrial disturbance in the area.

J. Cumulative and Secondary Impacts

Overall, any cumulative and secondary impacts from the proposed permit modification on the physical and biological resources of the human environment in the immediate area would be minor due to the fact that the predominant use of the surrounding area would not change as a result of the proposed project. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in Permit #0513-07.

8. *The following table summarizes the potential economic and social effects of the proposed project on the human environment. The "no-action" alternative was discussed previously.*

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Social Structures and Mores				X		Yes
B	Cultural Uniqueness and Diversity				X		Yes
C	Local and State Tax Base and Tax Revenue			X			Yes
D	Agricultural or Industrial Production				X		Yes
E	Human Health			X			Yes
F	Access to and Quality of Recreational and Wilderness Activities				X		Yes
G	Quantity and Distribution of Employment			X			Yes
H	Distribution of Population			X			Yes
I	Demands for Government Services			X			Yes
J	Industrial and Commercial Activity			X			Yes
K	Locally Adopted Environmental Plans and Goals				X		Yes
L	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores
B. Cultural Uniqueness and Diversity

The proposed permit modification would not cause a disruption to any native or traditional lifestyles or communities (social structures or mores) or impact the cultural uniqueness and diversity of the area because the current permit action would not change the current industrial nature of the PPLM operation or the overall industrial nature of the area of operation. The predominant use of the surrounding area would not change as a result of the current permit action. In addition, the overall industrial nature of the surrounding area, as a whole, would not be altered by the proposed PPLM permit action.

C. Local and State Tax Base and Tax Revenue

Any impacts to the local and state tax base and tax revenue would be minor because PPLM would remain responsible for all appropriate state and county taxes imposed upon the business operation. In addition, PPLM employees would continue to add to the overall income base of the area.

D. Agricultural or Industrial Production

The current permit action would not displace or otherwise affect any agricultural land or practices since PPLM operates on an existing industrial site.

E. Human Health

There would be minor potential effects on human health due to limiting mercury air emissions from the operation of the boiler. In addition, Permit #0513-07 would include conditions to ensure that the facility would be operated in compliance with all applicable rules and standards. These rules and standards are designed to be protective of human health.

As discussed in Section 7.F of this EA, PPLM would comply with all applicable ambient air quality standards thereby protecting human health. Overall, the Department determined, based on the ambient air impact analysis that any impact to public health would be minor.

F. Access to and Quality of Recreational and Wilderness Activities

The proposed permit action and overall PPLM operations would not affect access to any recreational or wilderness activities in the area. PPLM would continue to be located at the existing site. The area is comprised of private property with no public access and would continue in this state after issuance of the permit.

G. Quantity and Distribution of Employment
H. Distribution of Population

The current permit action would result in minor impacts to the quantity and distribution of employment in the area and/or the distribution of population in the area because the project would require 2 additional employees.

I. Demands for Government Services

Demands on government services from the proposed permit modification would be minor because PPLM would be required to procure the appropriate permits (including a state air quality permit) and any permits for the associated activities of the project. Further, compliance verification with those permits would also require minor services from the government. Overall, any demands on government services resulting from the proposed permit modification would be minor.

J. Industrial and Commercial Activity

The current permit action would change various aspects of the previous PPLM operations, specifically related to minimizing mercury emissions associated with the operation of the boiler, but would not result in an overall change in facility purpose; therefore, the proposed permit modification would not impact any industrial or commercial activity in the area.

K. Locally Adopted Environmental Plans and Goals

The current permit action would not contribute to the nonattainment status of any surrounding area. The Department is unaware of any other locally adopted Environmental plans or goals. The state air quality standards would protect air quality at the proposed site and the environment surrounding the site.

L. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from the proposed permit modification on the economic and social resources of the human environment in the immediate area would be minor due to the fact that the predominant use of the surrounding area would not change as a result of the proposed project. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in Permit #0513-07.

Recommendation: No Environmental Impact Statement (EIS) is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permitting action establishes a mercury emission limit and associated operating requirements for the boiler in order to comply with ARM 17.8.771. Permit #0513-07 includes conditions and limitations to ensure the facility will operate in compliance with all applicable rules and regulations. In addition, there are no significant impacts associated with this proposal.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Historical Society – State Historic Preservation Office; Natural Resource Information System – Montana Natural Heritage Program.

Individuals or groups contributing to this EA: Montana Department of Environmental Quality (DEQ) – Air Resources Management Bureau; Montana DEQ – Environmental Management Bureau; Montana Historical Society – State Historic Preservation Office; Natural Resource Information System – Montana Natural Heritage Program.

EA prepared by: Brent Lignell
Date: February 11, 2009