

**Powder River Basin Resource Council
Western Organization of Resource Councils**

August 29, 2011

Wyoming High Plains District Office
Bureau of Land Management,
Attn: Teresa Johnson
2987 Prospector Dr.
Casper, Wyoming 82604
Submitted via electronic mail to Hay_Creek_II_WYMail@blm.gov

RE: Hay Creek II Lease Application Final Environmental Impact Statement

Dear Ms. Johnson,

Thank you for the opportunity to submit comments on the final environmental impact statement (DEIS) for BLM’s proposed action to lease the Hay Creek II LBA tract requested by Kiewit Mining Properties, Inc. (Kiewit). We submit these comments on behalf of our organizations and our members who may be impacted by the leasing of this coal and subsequent mining activities.

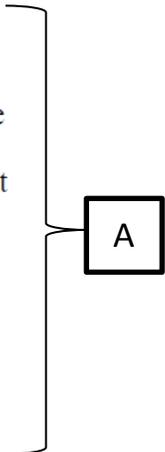
As acknowledged by the preparation of the Environmental Impact Statement, BLM’s proposed action would disturb “approximately 6,727.8 acres” of land, almost doubling the amount of acreage under the current Buckskin Mine permit. EIS at 1-10. This is a significant action that warrants careful review through the NEPA process.

Thank you for taking the time to revise the EIS in response to our comments and the comments of other organizations. We greatly appreciate BLM’s public involvement process and are glad to be a part of it. We believe the final EIS is a step in the right direction in addressing our comments. Nonetheless, we do have some remaining concerns that we believe must be addressed before BLM can proceed with issuing a ROD to authorize the Hay Creek lease tract.

BLM’s Purpose and Need Mandates Consideration of a Wide Range of Alternatives

BLM identifies that while “the purpose of the Proposed Action is to extend the life of existing operations at the Buckskin Mine,” “[m]ore broadly, the Proposed Action responds to the continued demand for coal in the United States, primarily for the purpose of generating electricity.” EIS at 1-18. BLM contends that “the continued extraction of coal is essential to meet the nation’s future energy needs and goals” and “[m]anagement – leasing, mining, and selling – of federal coal resources in the PRB contributes to a reliable supply of coal for electric power in the United States.” *Id.*

The scope of the range of alternatives an agency considers relates back to the purposes and needs of the action. *See, e.g. New Mexico ex rel. Richardson v. BLM*, 565 F.3d 683 (10th Cir. 2009); *Biodiversity Conservation Alliance v. BLM*, 608 F.3d 709, 714-15 (10th Cir. 2010).



NEPA mandates that federal agencies “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” 42 U.S.C. § 4332(2)(E). This alternatives analysis is “the heart of the environmental impact statement.” 40 C.F.R. § 1502.14. Alternatives analysis is important because “[w]ithout substantive, comparative environmental impact information regarding other possible courses of action, the ability of an EIS to inform agency deliberation and facilitate public involvement would be greatly degraded.” *New Mexico v. BLM*, 565 F.3d 683, 708 (10th Cir. 2009).

Given the broad purpose of the proposed action – to help meet the energy needs of the nation – BLM’s range of alternatives should be equally broad. Extraction of coal is not the only way to meet the nation’s energy needs. For instance, renewable energy and/or energy efficiency are reasonable alternatives that provide a stable supply of power to the nation and therefore must be considered in this EIS. Even without a specific renewable energy project in hand BLM could easily compare the environmental impacts of renewable energy and energy efficiency in general versus coal mining. Specifically, the carbon footprint of renewable energy projects, such as wind energy facilities proposed in the Powder River Basin and elsewhere in Wyoming, is known and could easily be compared to the carbon footprint of coal mining and coal-fired power plants in the Powder River Basin and elsewhere in Wyoming. And of course, renewable energy does not produce other types of air pollution, like sulfur dioxide, nitrogen oxide, or mercury emissions. Renewable energy and energy efficiency options are also well known to have water consumption benefits, benefits which are very important in an arid state like Wyoming. The carbon, economic, and environmental benefits of energy efficiency investments are well established and have been extensively studied by utilities, government agencies, and independent parties. BLM could easily integrate this sort of information into an alternatives analysis.

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Ultimately, of course, BLM cannot make choices for utilities nor propose its own renewable energy projects; nevertheless, BLM can – and should – compare the environmental trade-offs that directly result from its actions. If BLM continues to lease coal in the PRB, more coal will be available for purchase by utilities and this drives down the price of coal and creates a situation where utilities are more likely to continue to burn coal as opposed to switching to cleaner sources of energy. It’s a simple supply and demand situation. Cheap and easily obtainable coal supplies are dwindling and BLM manages some of the world’s best coal reserves. The agency’s role in maintaining a high-carbon, environmentally-costly energy supply is a serious consequence of BLM’s coal leasing program.

We acknowledge this is an unconventional approach to the typical alternatives analysis we see in BLM EISs. However, given the extreme environmental impacts that result from the BLM’s coal leasing program, BLM must fully consider alternatives and other options. If BLM’s purpose for coal leasing truly is to meet the nation’s energy needs, then alternatives to coal that meet the nation’s energy needs must be considered. This type of alternatives analysis would be fully consistent with NEPA, CEQ regulations, and the BLM NEPA handbook. BLM could easily include analysis of renewable energy and energy efficiency options with consideration of the environmental benefits of its no action alternative or a reduced leasing scenario alternative that should be considered within the reasonable range of options plainly within the authority of BLM.

Finally, leasing is “an agency-proposed action” that requires a robust alternatives discussion. While Kiewit may have applied for the Hay Creek II coal lease tract, the decision is ultimately BLM’s because at this time, the mine does not have any property or other legal interests in the coal. Therefore, the purpose and need of the action is BLM’s to decide and the agency is not constrained by the bounds of a company’s “application.”

In fact, BLM has demonstrated that it has flexibility outside the bounds of the application by considering (and selecting) an alternative to lease substantially more coal than has been requested by the applicant. In doing so, BLM has shown that it not just merely responding to an application for a specific amount of coal to meet the specific needs of a mining company but that the agency is engaging in a discretionary action to lease coal based on a variety of considerations and with a larger purpose in mind. In a similar vein, BLM should consider an alternative to lease a lesser amount of coal.¹

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The lease by application framework is a form of competitive coal leasing and is not merely responding to an application like a permit or a license application. Therefore, BLM must fully consider a range of reasonable alternatives commensurate with the significance of this action. As described above, there is a large variety of reasonable alternatives available for BLM’s consideration in this EIS.

BLM Should Consider an Alternative that Will Increase Competition in This Coal Lease

Recent coal lease sales in the PRB have demonstrated what a little competition will do in terms of generating revenue for the government. On August 17, 2011, Alpha outbid Peabody by almost \$16 million dollars, garnering the highest per ton bonus bid of any lease in the history of BLM’s PRB coal program. The previous month, Peabody outbid Alpha for a tract by over \$37 million dollars. These amounts are not trivial as half of the income comes back to the state of Wyoming through five annual payments making a real difference in our small state budget. Additionally, in times of federal deficit discussions, the federal government should be doing all it can to generate revenues from its coal program. Importantly, the increased price helps to internalize the cost of coal and provide a reasonable return to the public for the use of its natural resources.

A

While we have some reservations about the environmental impacts that will result in a larger lease tract, we believe BLM should consider an alternative that involves designing a lease tract in a way that would ensure competition and interest from nearby mines. The Buckskin Mine is adjacent to the Rawhide Mine and although the Hay Creek II tract lies on the other side of the mine, there is an opportunity to draw the lease tract in a way that would attract the attention of the Rawhide Mine or other mining operations in the PRB. This would allow BLM to conduct socio-economic and environmental analysis that would provide a cost-benefit consideration of leasing a larger tract in order to increase competition.

¹ BLM specifically acknowledges this authority. EIS at 2-1, *citing* 43 C.F.R. 3425.1-9: “The authorized officer may add or delete lands from an area covered by an application for any reason he/she determines to be in the public interest.”

Alternatively, if BLM fails to analyze an alternative that would foster competition, the agency should analyze the impacts of lost revenue as part of its socio-economic analysis which discloses projected revenue of the lease tracts.

At the very least, BLM should fully account for the increased interest in PRB coal when setting its fair market value for this lease tract. Coal mines have expressed interest in exporting PRB coal, which will invariably drive up the cost of this dwindling resource. Export potential, and overall demand for PRB coal, should be fully assessed in determining the fair market value for this lease tract.

BLM Needs to Compare/Contrast the Cumulative Impacts of the Various Alternatives

BLM's cumulative impacts analysis violates NEPA's requirements because it does not compare and contrast the impacts and benefits of the various alternatives. The alternatives analysis is the "heart" of an EIS. 40 C.F.R. § 1502.14. In order to fulfill the requirements of NEPA, BLM must "[d]evote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits." 40 C.F.R. § 1502.14(b).

In its discussion of climate change impacts, BLM claims that "Selection of the No Action Alternative would probably not result in a decrease of U.S. CO₂ emissions attributed to coal mining and coal-burning power plants in the longer term, because multiple other sources of coal are available." EIS at 4-130. While BLM admits that "this coal does not have the cost, environmental, or safety advantages of PRB coal" the agency hypothesizes that this unnamed coal source "could supply the demand beyond the time that the Buckskin Mine completes coal recovery in its existing leases." *Id.* Relying upon this unsupported statement has the effect of preventing BLM from considering the environmental benefits of choosing the no action alternative, especially in relation to indirect impacts stemming from the burning of coal, such as climate change and air pollution. In order to meet NEPA's "hard look" requirements, BLM must at the very least substantiate its claim that "multiple other sources of coal" and having power plants switch to those "multiple other sources of coal" is a feasible option for the plants and their customers. Relying on coal for a power source is not a forgone conclusion. BLM has substantial control over the nation's coal supply – control that is unanalyzed in this EIS or others for proposed PRB coal leases.

In other areas of the cumulative impacts analysis, including air quality, groundwater resources, surface water resources, soils, vegetation, and wildlife and fisheries, BLM predicts that choosing the proposed action or Alternative 2 will have the same impacts as the no action alternative. Table 4-41 at EIS 4-144-150. BLM makes these conclusions with no accompanying analysis. In order to meet NEPA's requirements of an alternatives analysis, which compares the impacts or benefits of various alternatives to help inform agency decision-making, at the very least, BLM needs to substantiate its claims with evidence and research that demonstrates that the impacts of the "no action" alternative are the same as the action alternatives.

A

BLM Needs to Consider the Impacts of Buckskin/White Energy's Proposed Coal Processing Facility

In commenting on the draft EIS, we asked BLM to consider Kiewit's proposed coal drying facility as a connected action or at least consider it in the cumulative impacts analysis for the lease tract. EIS at D-52. BLM responded that such analysis is unnecessary because "The facility proposed by White Energy is not in any way connected to the Hay Creek II lease or dependent on it." EIS at D-69. However, according to White Energy's website, the company has an "agreement with Buckskin Mining Company ("Buckskin"), a wholly owned subsidiary of Kiewit Group, to enable WECNA to develop coal upgrading plants at Buckskin's mine in Gillette Wyoming."² While the website states that White Energy will own 100% of the facility, they have entered into a long-term coal-supply contract with Buckskin "under which Buckskin will supply the feedstock coal to be upgraded at the plant." *Id.* Some of this "longer-term coal-supply" is presumably the Hay Creek II lease area. Therefore, in contrast to BLM's claim, the White Energy facility appears to be linked to the mine and its future leases, including the Hay Creek II lease.

B

Alternatively, White Energy's facility will clearly create cumulative impacts, especially in regards to air quality. White Energy submitted an air permit application to WY DEQ "in late 2010" according to its website, and the air emissions and analysis related to this permit could easily be integrated into BLM's cumulative impacts analysis.

BLM Needs to Evaluate Luca Technology's Proposed Rough Draw Project in Relation to this Coal Lease Proposal

Thank you for including information about Luca Technologies' proposed biogenic methane project (also known as microbial conversion of coal to methane) in the EIS. EIS at 3-35. However, the interaction between Luca Technologies' project and this coal lease need to be examined in the environmental consequences section. *See* EIS at 3-37. It is our understanding that the microbial conversion project could have a lengthy lifespan – one to two decades or more. If this is the case, we encourage BLM to develop a Multiple Mineral Development stipulation for this coal lease, and consider it as an alternative in this EIS, to settle the relationships between the Luca Technologies' project and mining this coal lease. This would be particularly important if coal has already started to be converted to methane that could be lost through mining activities if Luca's wells were plugged and abandoned prior to recovery of the natural or converted methane.

C

We understand that various chemicals, many of which are hazardous if in sufficient quantities, are injected into the coal seams as part of the microbial conversion process. The combined, or cumulative, impacts of mining through or near areas that have underwent microbial conversion operations should be thoroughly evaluated in Chapter 4's cumulative impacts analysis. In particular cumulative impacts related to waste and water should be evaluated.

² <http://www.whiteenergyco.com/projects/north-america/buckskin-project/index.php> (last accessed August 26, 2011).

In addition to environmental impacts, BLM should evaluate the legal and policy consequences of allowing microbial conversion technologies near active coal mining operations. In commenting on the WY Oil and Gas Conservation Commission’s draft rules for microbial conversion, Arch Coal (Ark Land Co.) stated that the microbial conversion process “biodegrades” or “consumes” the actual coal resource to produce methane gas. Arch Coal Comments on draft WOGCC microbial conversion rules, attached. Arch said, “Consequently, authorization to emplace wells for carrying out nutrient restoration and to unitize oil and gas interests with coal interests for the production of methane compromises the boundaries between coal rights and coalbed methane rights established by both the Wyoming Supreme Court and the U.S. Supreme Court.” Arch believes that an operator should obtain a coal lease to carryout microbial conversion technologies. *Id.*

C

BLM Needs to Consider Mitigation Measures to Reduce Air Quality Impacts

As the EIS identifies “Wyoming is quite windy” and “Surface wind speeds at the Buckskin Mine meteorological station average 10.5 mph throughout the year.” EIS at 3-20 to 3-21. Wind has the potential to transport pollution from the Buckskin Mine into the city of Gillette and beyond. Additionally, even on non-windy days, pollution can travel to nearby homes and schools. This is especially true during winter inversions when air tends to stagnate.

Thank you for including the additional information on air quality in the final EIS appendices. In particular, thank you for clarifying that the Buckskin Mine does not use cast blasting, which is a contributing factor to the formation of toxic orange clouds.

However, we remain concerned that air quality in the area is degrading and the area is close to non-attainment with respect to PM and ozone.³ In spite of the variety of best management practices employed at the mines, *see e.g.* EIS at 3-61, there are still significant amounts of air pollution coming from the mines. As identified in the EIS, local landowners “have contacted and met with mine personnel on various occasions regarding their concerns about smoke from coal fire sat the mine, NO₂, and dust.” EIS at ES-24. Because of these concerns, BLM should consider lease stipulations and other enforceable mitigation measures to reduce air pollution.

D

BLM Needs to Consider Mitigation and Alternatives Related to Direct Greenhouse Gas Emissions from the Mining Process

An estimated 79,156 metric tons of carbon dioxide equivalent methane gas is released through the mining process each year at the Buckskin Mine. EIS at 3-223. This would equate to 478,536 tons through the adoption of Alternative 2, which would extend the life of the Buckskin Mine by six years. While this is a small amount of greenhouse gas emissions relative to large industrial sources like coal-fired power plants, it can be easily reduced through off-the-shelf technologies like methane drainage. BLM must consider alternatives and mitigation measures to reduce these emissions. Additionally, BLM should fully analyze the climate benefits of imposing

³ The EIS notes that “ozone readings have occasionally exceeded the current standard of 75 parts per billion at the Thunder Basin air monitoring site in northern Campbell County.” EIS at ES-24.

a multiple mineral development lease stipulation to prevent coal mining from proceeding until CBM wells have fully depleted methane from the coal seams.

D

BLM Needs to Evaluate Compliance with SMCRA's Contemporaneous Reclamation Requirements and Consider Mitigation and Alternatives

The EIS states that "Vegetation removal and reclamation would occur incrementally throughout the general analysis area," and "reclamation, including revegetation, will immediately follow as mining progresses through the area." EIS at 3-116 to 3-117. In response to comments, BLM also states that "The Buckskin Mine meets or exceeds the reclamation requirements..." EIS at D-62. However, this is not the case at the Buckskin Mine or other mines in the Powder River Basin.

The EIS includes "actual and projected" cumulative disturbed acres and cumulative permanently reclaimed acres. EIS at 4-11, table 4-2. However, "reclaimed" is not defined and it is unclear what criteria BLM is using to determine whether land is in fact reclaimed. What is clear is that BLM is not considering bond release status, which, as discussed below, is an objective measure of the various phases of reclamation success and must be considered in BLM's environmental analysis. Regardless, the data included in Table 4-3⁴ demonstrates that even under BLM's broadly considered interpretation of "reclaimed," mines in the PRB are not complying with contemporaneous reclamation requirements. For instance, in baseline year 2003, only 21,238 of 68,794 disturbed acres have been "reclaimed." EIS at 4-12, Table 4-3.

E

As BLM notes, reclamation data is important as it helps to inform the impacts analysis for vegetation, soils, wetlands and riparian areas, and socio-economic impacts related to loss of land available for grazing, hunting, and other land uses (both private land within the lease area and public land within the broader PRB). *See* EIS at 4-78. Therefore, it is critical that BLM uses the right data and analyze it in the right way.

The mere listing of acreage amounts of "disturbed" and "reclaimed" lands in the EIS does not equate to a "hard look" under NEPA. The BLM failed to connect the listed acreages with reclamation standards and bond release requirements designed to provide an objective basis of reclamation success. BLM's interpretation of what is "reclaimed" does not appear to be consistent with the OSM directives, is incredibly broad, and includes land that is in various stages of reclamation, not just lands that have achieved final reclamation. Merely re-graded or re-seeded does not equate to reclaimed.⁵

⁴ These are numbers based on the Upper Coal Production Scenario. The numbers for the Lower Coal Production Scenario were difficult to interpret because of misplaced commas and too many digits in the numbers. For no apparent reason, the numbers in Table 4-3 are also remarkably different from the information contained in Table 4-10. Importantly, these numbers also vary from recent OSM reports detailing disturbed and reclaimed acreages.

⁵ Additionally, BLM's reclamation data appears to be contradicted by what little analysis of revegetation is in the EIS, including the statement that "Estimates for the time it will take to restore shrubs, including sagebrush, to premining density levels range from one or two decades to up to

Additionally, BLM failed to connect reclamation status with environmental impacts, such as reduced air quality resulting from significant amounts of exposed ground. By lumping all lands undergoing any stage of “reclamation” into one total, BLM has failed to consider that there are different environmental impacts that result from lands in different stages of reclamation. BLM has also failed to consider objective, third-party information, such as reports and information from Wyoming DEQ and OSM, which document a lack of contemporaneous reclamation at the PRB mines.

Importantly, BLM also fails to consider any alternatives or mitigation measures related to reclamation. Given the current failure of PRB mines to meet contemporaneous goals and requirements under SMCRA, BLM must not lease new coal and instead should wait to lease new tracts until reclamation of current tracts is complete. This is a delay alternative that must be considered in the EIS. While BLM does consider, but eliminate from detailed analysis, a delay alternative, that alternative was framed in the context of taking advantage of higher coal prices and/or allowing recovery of the potential coal bed natural gas resources in the tract prior to mining. EIS at 2-13-14. BLM failed to consider the environmental and socio-economic benefits of a delay alternative associated with delaying a lease of the tract until the mines achieve contemporaneous reclamation as indicated by bond release status. Such a delay action would be fully consistent with the requirements of 43 C.F.R. § 3425.1-8(a)(3), which dictates that an application for leasing must be rejected if “leasing of the lands covered by the application, for environmental or other sufficient reasons, would be contrary to the public interest.”

E

If BLM decides to proceed with leasing at this time, the agency should consider lease stipulations related to reclamation. For instance, BLM could propose a lease stipulation that would prevent mining associated with the lease tract until the mine achieves a certain level of final bond release of previously mined lands (30%, 50%, or 75% for example). This would be fully consistent with BLM authority, which allows development related stipulations for federal coal leases. Finally, as discussed above, BLM could propose to lease a smaller amount of coal. If BLM’s leasing rate is more staggered, it could better promote contemporaneous reclamation. Irrespective of any authority under SMCRA, BLM has the ability under its leasing program to control the pace and scale of mining operations, and if BLM slows its leasing pace, this may help to promote contemporaneous reclamation of previously mined lands. BLM should consider all of these reasonable alternatives, and other alternatives and mitigation measures, in its EIS. An EIS must contain a robust discussion of alternatives and mitigation measures.

Importantly, these lease stipulations would not be prejudicial to the Buckskin Mine because the mine has 14 years of coal reserves at current mining rates. EIS at 3-221.

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100 years.” EIS at 3-117. Additionally, “The removal of woody species would be considered a long-term impact since these species take approximately 25 years or longer to attain a size comparable to woody species present within proposed disturbance areas.” EIS at 4-79.

BLM Needs to Consider Mitigation Measures for Groundwater Impacts and Ensure Compliance with SMCRA’s requirements to minimize impacts to the hydrologic balance

The EIS discloses that “Under Alternative 2, mining in the BLM study area (up to 1,883 acres) would have substantial, permanent impacts on aquifers within the area to be mined...Long-term groundwater reduction in near-mine aquifers west of the BLM study would extend farther than under the Proposed Action.” EIS at 3-87. Additionally, mining in the lease area identified by Alternative 2 would have significant impacts on groundwater wells and surface water rights. EIS at 3-94. There are also significant cumulative impacts to groundwater resources that occur because of coal mining. EIS at 4-55, 4-58(“the groundwater impacts from CBNG development and surface coal mining would be additive in nature”).

Because of these significant impacts, BLM has a duty to fully analyze aquifer restoration status at the Buckskin Mine. This involves considering bond release status at the mine, because BLM’s sister agency, OSM, considers the status of Phase III bond release to be the measure of water restoration. As discussed above, to date, only a small amount of mined acreage at the Buckskin Mine has obtained final bond release. In addition to bond release status, BLM should fully consider aquifer recharge amounts in the current mine permit area and the ability of the mine to restore water resources in the lease area. Proper analysis is necessary not only to determine the full scope of the impacts but also to analyze compliance with SMCRA’s requirements to minimize impacts to the hydrologic balance in the area.

F

Importantly, BLM also has a duty to consider alternatives and mitigation measures related to aquifer restoration. In commenting on the Draft EIS, we stated that BLM cannot rely upon yet-to-be-determined state permitting in place of considering mitigation measures upfront in this NEPA analysis. EIS at D-45. BLM did not respond to its failure to consider mitigation measures, and instead reinforced its opinion that the state permitting system is sufficient. EIS at D-64. BLM is continuing to ignore its duties to fully analyze groundwater impacts and consider mitigation measures to reduce the severity of those impacts. Such mitigation measures could include additional bonding to cover restoration costs and/or a requirement that mining in the lease area could not proceed until aquifer restoration has been demonstrated in previously mined tracts. These mitigation measures could easily be considered through the leasing process.

BLM Needs to Analyze Impacts to Wetlands and Associated Impacts to Wildlife and Livestock Prior to Leasing this Coal Tract

64.44 acres of wetlands are present in the study area. EIS at ES-29. However, impacts analysis related to loss of these wetlands was not conducted through this EIS. BLM states that “The specific functions...of each identified wetland will be determined during the delineation associated with the permitting process for the final tract configuration, should a lease be issued, and are, therefore, not addressed in detail as part of the EIS analysis.” EIS at ES-29. BLM has a duty to consider impacts *prior* to a commitment of resources. Thus, the impacts to wetlands and any associated impacts to wildlife, livestock, riparian systems, or the hydrologic balance in the area need to be considered *prior* to leasing.

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Thank you for your time and consideration of these comments. We look forward to an improved EIS. Please keep us on your mailing list to be notified of decisions related to this action.

Sincerely,

A handwritten signature in black ink, appearing to read "Shannon Anderson", with a long horizontal flourish extending to the right.

Shannon Anderson
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934 N. Main St.
Sheridan, WY 82801
sanderson@powderriverbasin.org

Ellen Pfister
Chair, Western Organization of Resource Councils Coal & Climate Campaign Team
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Billings, MT 59101

BLM RESPONSE:

2A:

The purpose of this environmental impact statement (EIS) is to analyze and disclose the potential effects to the natural and human environment from the proposed leasing of a maintenance tract of federal coal in the Wyoming Powder River Basin (PRB). A mining operator made an application to lease a tract of federal coal in order to have sufficient coal reserves to continue to operate an already existing mine. (final EIS (FEIS) at 1.1.1). Although leasing this tract would not authorize mining operations on those lands, the EIS evaluates the potential impacts of mining the tract because mining is a logical consequence of issuing a lease for a maintenance tract of federal coal (FEIS at 1.1.2). The EIS presents BLM's analysis of environmental impacts under the authority of NEPA and associated rule and guidelines.

The FEIS explains the extent of BLM's decision-making authority to lease coal on federal lands and our mission under our various mineral leasing laws which is to encourage the development of domestic coal reserves and the reduction of US dependence on foreign sources of energy.

Energy projections have indicated that even with a considerably more optimistic projection for renewable sources, coal use continues to be projected as the largest portion of the domestic electric fuel mix until at least 2035 which is past the time the Hay Creek II tract is to be mined.

The FEIS addresses a full range of alternatives to the lease by application submitted by the applicant. The range includes an alternative which would represent all lands that include coal reserves that are comparable to those applied for, which may be efficiently recovered with the LBA, which may enhance competitive interest in the tract, and which could be bypassed if not leased. On the other end of the range is the No Action Alternative where BLM would not lease the coal in the Hay Creek II LBA.

The environmental effects and impacts associated with the wide variety of renewable electric generation technologies are well beyond the scope of this EIS. Individual projects associated with alternative electric generation technologies would be evaluated separately under their own National Environmental Policy Act (NEPA) process as each project is proposed and would be analyzed on their own merit. In order for a renewable energy project to come to fruition, the resource must be in place and there must be a valid proponent to propose, support, and fund the project. BLM does not manage the renewable energy resources in the vicinity of the Buckskin mine. Renewable energy resources such as wind and solar are managed by the surface owner, not by the BLM.

Alternatives to consider under this analysis are limited to alternatives associated with leasing the applied for Hay Creek II LBA. Because of the split estate situation in the Powder River Basin, the BLM is not the surface owner and only holds some of the mineral rights. The range of alternatives available for consideration in this case are limited to leasing coal or not leasing coal. As the Interior Board of Land Appeals recently held, "agencies enjoy considerable discretion in defining the purpose of, and need for, a particular project. When BLM is asked to approve an application or permit, it should consider the needs and goals of the parties involved

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in the application or permit, as well as the public interest” and “It is BLM’s purpose and need for action that determines the range of alternatives and provides a basis for the selection of an alternative in a decision.” Powder River Basin Resource Council, 183 IBLA 242 (March 14, 2013). Therefore we have presented in detail the following alternatives to the proposed action, The No Action Alternative – not leasing the coal, and leasing less than or more than applied for tract.

While Rawhide Mine is next to the Buckskin mine, reconfiguring the LBA to be next to the Rawhide Mine in an attempt to generate competition would decrease the value of the coal resource. Rawhide Mine has enough coal to maintain production for at least 6 to 10 years at its current rate of production. Due to its location, the available competitor for the Hay Creek II LBA is the minimum fair market value bid set by the BLM which the bidder(s) must meet or exceed to lease the Hay Creek II tract.

For a discussion of the impacts of the different alternatives please see each resource sections discussion of each alternative. For a summary of disturbance, please see the EIS in section 3.0 starting on page 3-1 with attention to table 3.0-2 starting on page 3-8.

2B

The White Energy project is a proposed binderless coal plant which at the time of the environmental impact statement (EIS) was undergoing a feasibility study. The White Energy project has been addressed in the EIS. The proposed White Energy project discussion is on page 4-17 in section 4.1.1.2. As of January 2013, the White Energy project is still a proposal. The permitting of the proposed White Energy project would be directed by the Wyoming Department of Environmental Quality (WDEQ) as a state project. Air quality permitting would also be under the WDEQ. All federal and state air quality laws and regulations would apply and would be enforced by the WDEQ or the U.S. Environmental Protection Agency (EPA). In July of 2011 the WDEQ sent notification that the WDEQ would not be acting on the proposal due to inactivity.

2C

An environmental analysis of the proposed Luca Technologies process is beyond the scope of the Buckskin Mine Hay Creek II Coal LBA EIS. Any development on or in federal coal by Luca would require federal authorization and any federal actions will be evaluated in a NEPA analysis.

Luca Technologies’ application for the Rough Draw project was rejected in May of 2012. While Luca is in the process of submitting another application for authorization to use federal coal, it has not yet done so and any further application(s) for methanogenesis projects will be subject to NEPA review and analysis.

The first-in-time first-in-right principle applies to conflicts between oil and gas development and coal development. The BLM manages federal lands on a multiple-use basis, in accordance with federal regulations. In response to conflicts between oil and gas and coal lease holders, BLM policy advocates optimizing the recovery of all minerals to ensure that the public receives a reasonable return for these publicly owned resources. Optimal recovery of coal and oil and gas resources requires negotiation and cooperation between the oil and gas lessees and the coal lessees.

2D

Air quality is permitted, monitored and enforced by OSM and the WDEQ under agreements with the U.S. Environmental Protection Agency (EPA). Information regarding WDEQ air quality regulations can be found on their website at <http://deq.state.wy.us/aqd/> with particular attention paid to the Air Quality Program Links provided on the Air Quality Division home page.

BLM is engaged in efforts with WDEQ, EPA, and other agencies to better monitor and characterize pollutants, including ozone and PM, in the PRB:

- The BLM - Wyoming installed a 2B Ozone Monitor at its existing Sheridan Wyoming Air Resource Monitoring Systems (WARMS) monitoring site in January 2013. Monitoring data from the Sheridan ozone monitor will be provided to the WDEQ-Air Quality Division and also submitted to EPA's Air Quality System (AQS) Data Mart. Data from this location can be used to evaluate cross-border transport and conditions upwind of the PRB.
- In late 2012, the Basin and Newcastle WARMS monitoring sites were upgraded to be fully compliant with, and part of, the Clean Air Status and Trends Network (CASTNET) system supported by the EPA. CASTNET provides long-term monitoring of air quality in rural areas to determine trends in atmospheric pollutant concentrations, including ozone, in order to evaluate the effectiveness of national and regional air pollution control programs. The BLM continues to work collaboratively with the EPA and Federal Land Managers to address ozone concerns in the region.
- The PRB Coal Review Phase II will assess the cumulative air quality impacts of proposed future development activities in the PRB for years 2020 and 2030. Results are anticipated to be available in summer 2013 and may be used as part of the cumulative air quality assessment component of future project-specific NEPA analyses. The BLM commits to leveraging the data from PRB II, as well as other modeling efforts being conducted in the region for project-specific NEPA analyses, to assess regional air quality and air quality related values. Pending completion of these modeling analyses, the BLM, in cooperation with an interagency review team, will evaluate impacts from proposed federal actions and identify additional emission mitigation measures necessary to prevent any modeled violations of the National Ambient Air Quality Standards (NAAQS) or Wyoming Ambient Air Quality Standards (WAAQS) or the need for a more refined modeling analyses.

- The BLM is creating the Air Resource Management Plan (ARMP) which will be part of the new Buffalo RMP. The ARMP will address current issues and conditions within the region and ensure future BLM air analyses are robust and comprehensive. The ARMP will be available spring 2013 for review and comment.

The FEIS describes the mechanisms used by the WDEQ to ensure that NAAQS are not violated. One mechanism is monitoring, which the FEIS describes in detail. An extensive monitoring network exists in the PRB and WDEQ requires this monitoring information to document the quality of air resources in the vicinity of PRB mines. Tables 3.4-2 and 3.4-3 display monitoring results at the Buckskin and surrounding mines. Note that while the values highlighted in Tables 3.4-2 and 3.4-3 reflect exceedances, they do not indicate a violation of a standard. Under the PM10 24-hour NAAQS, a violation of the standard does not occur unless $150 \mu\text{g}/\text{m}^3$ is exceeded more than once per year on average over three years. Subsequently, a violation of the NAAQS can only be supported and justified to EPA through the collection of actual monitoring data. While exceedances have occurred at some monitors, the exceedances do not constitute a violation of the NAAQS until it can be demonstrated, through monitoring, that the regulatory standard has been violated.

Data from a WDEQ monitor in Campbell County are shown in the following table, which displays the ten highest daily maximum PM10 values from July 2003 to June 2012. Note that all maximum values are well below the 24-hr PM10 NAAQS of $150 \mu\text{g}/\text{m}^3$. According to recent communication with the WDEQ, the WDEQ considers a representative 24-hr PM10 background concentration for the High Plains District of the BLM to be approximately $41 \mu\text{g}/\text{m}^3$.

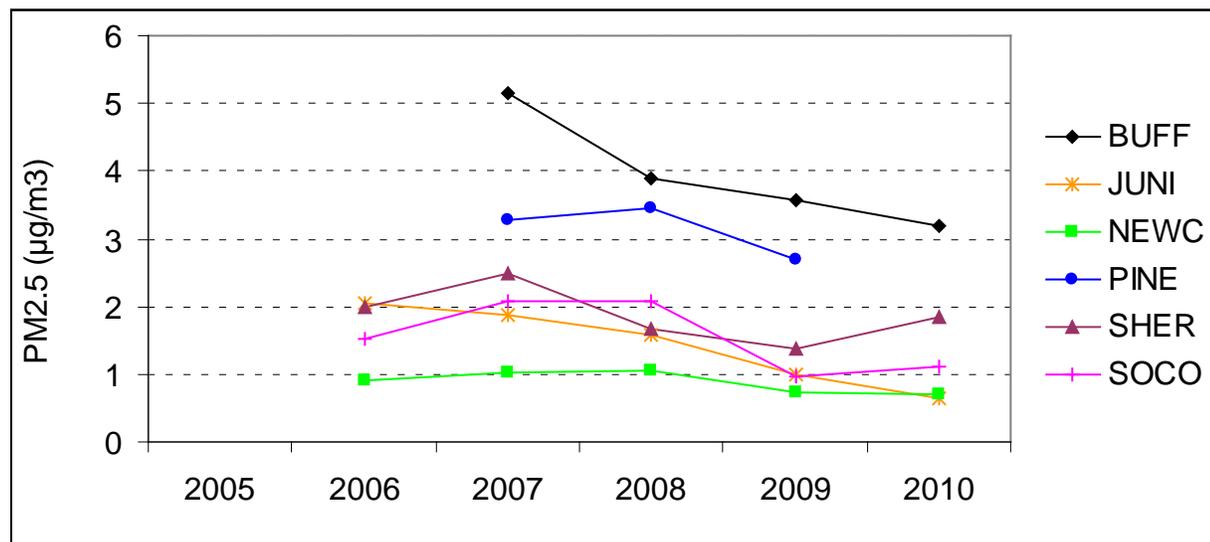
Ten Highest Daily PM10 Max Values at the Campbell County Monitor

Final Validation (07/17/2003—06/30/2012)

number	date	value ($\mu\text{g}/\text{m}^3$)
1	6/27/2012	59.3
2	6/28/2012	53.3
3	4/11/2012	50.4
4	6/4/2012	50.3
5	6/30/2012	47.6
6	8/24/2011	47.5
7	4/10/2012	47.2
8	5/15/2012	45.5
9	6/26/2012	44.8
10	9/17/2009	44.5

The BLM operates multiple monitors as part of the BLM's WARMS. PM2.5 data from these monitors are shown in the following chart. With the exception of the Pinedale monitor (PINE), all monitors are located in the High Plains District of the BLM.

Annual Average Speciated Filter Pack Measurements at Wyoming WARMS Sites, 2006—2010.



Because the WARMS PM_{2.5} particulate monitoring is not performed according to EPA reference or equivalent methods, data cannot be used to establish regulatory compliance. However, data can be used as an indicator of concentrations present. Note that all annual averages were less than 6 µg/m³, much lower than the PM_{2.5} annual NAAQS of 15 µg/m³.

Another mechanism for ensuring compliance with the NAAQS is through the permitting and compliance process. Coal permitting is handled through the Office of Surface Mining Reclamation and Enforcement (OSM) and the WDEQ. The WDEQ requires that surface mine permits compile detailed emissions inventories and demonstrate compliance with the NAAQS before permit amendments are granted. In the 2006 WDEQ issued a permit modification for the Buckskin Mine using the modeling analysis to demonstrate that applicable air quality standards would be attained. Additionally, WDEQ used a best available control technology (BACT) to determine the appropriate emissions controls for mining operations. An air quality permit modification will be required to support compliance with ambient standards before additional mining activities are authorized.

During the permitting process, mitigation measures are established. The current Buckskin Mine permit (Air Quality Permit MD-11186) includes multiple provisions for emissions controls, including but not limited to:

- Limits on particulate emissions for specific emissions sources (e.g., silos).
- Opacity limits for emissions from baghouses and truck dumps.
- Requirements for daily observations of visible emissions.
- Treatment of permanent and temporary routes with dust suppressant.

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- Annual submission of reports detailing road dust control efforts.
- Actions to limit wind erosion from disturbed acres.
- Requirement for an ambient PM10 monitoring program and meteorological station.

Greenhouse Gases (GHG)

The issue of regulating CO₂ is currently being addressed by the U.S. Environmental Protection Agency (EPA). In Wyoming, the Wyoming Department of Environmental Quality (WDEQ) is responsible for enforcing state and federal air quality environmental laws, including provisions of the Clean Air Act and its implementing regulations. The agreement on the regulation of GHG, particulates and other emissions between the EPA and WDEQ is such that whichever agency has the more stringent emissions standards will be the enforcing body for those standards.

Currently the EPA and the WDEQ are implementing regulations to address emissions from power plants and other large stationary sources. Specific information on these regulatory initiatives, as well as proposed regulations, can be found at <http://www.epa.gov/climatechange/EPAactivities/regulatory-initiatives.html> for the EPA and at <http://deq.state.wy.us/aqd/> for the WDEQ.

EPA regulatory initiatives include:

The Proposed Carbon Pollution Standard for New Power Plants. On March 27, 2012, EPA proposed a Carbon Pollution Standard for New Power Plants that would, for the first time, set national limits on the amount of carbon pollution that power plants can emit. The proposed rule applies only to new hydrocarbon fuel fired electric utility generating units. For more information, go to <http://epa.gov/carbonpollutionstandard/index.html>.

The Final Greenhouse Gas Tailoring Rule. On May 13, 2010, EPA set greenhouse gas emissions thresholds to define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule "tailors" the requirements of these Clean Air Act permitting programs to limit covered facilities to the nation's largest greenhouse gas emitters: power plants, refineries, and cement production facilities. For more information, go to <http://www.epa.gov/NSR/actions.html#may10>.

The Greenhouse Gas Reporting Program. The Greenhouse Gas Reporting Program collects greenhouse gas data from large emission sources across a range of industry sectors, as well as suppliers of products that would emit greenhouse gases if released or combusted. Greenhouse gas data are available through the Greenhouse Gas Reporting Program Data Publication Tool. For more information, go to <http://www.epa.gov/ghgreporting/>.

Reclamation is discussed in the Buckskin Mine Hay Creek II Coal Lease Application Environmental Impact Statement (EIS) in section 1.1.3.4 on page 1.13. The EIS document can be found on line at:

<http://www.blm.gov/wy/st/en/info/NEPA/documents/hpd/HayCreekII.html>.

Bond release cannot be used as a measure of reclamation success because reclamation can be successful without the mine going through the process of bond release. There is no requirement, once reclamation has achieved all benchmarks, for the mine to proceed through the bond releasing process. Therefore, one must look at the number of acres reclaimed at each phase of reclamation rather than the number of acres released from bond in order to determine the amount of reclamation success. As the federal district court for the District of Columbia ruled in Powder River Basin Resource Council's (PRBRC) similar challenge to the West Antelope II lease by application decision, "BLM provided a realistic and detailed appraisal of land and hydrologic disturbance and reclamation" and noted in a footnote that "In any event, the applicable statutory and regulatory framework does not contemplate instant reclamation or reclamation on an acre-by-acre basis as surface mining activities proceed. Rather, reclamation is supposed to occur "as contemporaneous as practicable." 30 C.F.R. § 816.100; see also 30 U.S.C. § 1202(e). BLM's consideration of alternatives and mitigation measures was reasonable in light of this framework and the scope of the contemplated action. See *Theodore Roosevelt Conservation*, 661 F.3d at 73 ("[W]e review both an agency's definition of its objectives and its selection of alternatives under the rule of reason.") (quotation marks and citation omitted)." *WildEarth Guardians et al v. Salazar*, Civil Action No. 10-01174 (CKK) Civil Action No. 11-00037 (CKK) (July 30, 2012).

The Office of Surface Mining Reclamation and Enforcement (OSM) and the Wyoming Department of Environmental Quality (WDEQ) regulate and enforce reclamation of surface coal mines. Table 1-3 on page 1-16 provides a general summary of reclaimed acreages at the Buckskin Mine and their respective stages of bond release along with a definition of what each phase of bond release describes.

Reclamation is regulated by OSM and the WDEQ. Most lands in the Wyoming coal mines are under DEQ Bond Release Category 5. A description of bond release procedures for coal mining operations can be found at <http://deq.state.wy.us/lqd/guidelns/Guide20.pdf>. As stated in the WDEQ Coal Standard Operating Procedure No. 5.4:

"Contemporaneous reclamation has long been a topic of concern. Twice in recent years it has been a subject of oversight by OSM. This has been in response to citizen concerns that mines, particularly in the Powder River Basin, are not being reclaimed contemporaneously. The result of the latest oversight indicated that while the mines were found to be in compliance with their permits, the permits were deficient. The permits were confusing and terminology and maps in the different permits were inconsistent. This makes it extremely difficult for the general public to understand the permit requirements.

Because of the findings by OSM in the 1997 Evaluation Year oversight report, LQD agreed to develop standardized permit review criteria to ensure that the regulations concerning contemporaneous reclamation are consistently addressed in each permit.”

Further Information and the above quotation on state reclamation requirements and guidelines can be found at <http://deq.state.wy.us/lqd/guidelines.asp> and <http://deq.state.wy.us/lqd/Guidelns/csop544.pdf>.

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Implementation of mitigation measures takes place during the permitting process. Coal mine permitting is handled through OSM and WDEQ. Aquifer restoration is part of the reclamation process. Please see above response.

The WDEQ, Land Quality Division (LQD) regulations require that the surface coal mining operator provide a plan to ensure the protection of the quantity and quality of, and rights to, surface water and groundwater both within and adjacent to the permit area. The Buckskin Mine Plan (LQD Permit No. 500) includes: restoration of the approximate recharge capacity of the permit area, recording and reporting water quantity and quality data, and a mitigation plan to provide alternative sources of water where the protection of quantity and quality cannot be insured. Accordingly, mining at the Buckskin Mine will continue to be conducted in such a manner as to minimize disturbance of the hydrologic balance outside the permit area, to assure the protection or replacement of water rights, and to support approved postmining land uses.

LQD does not anticipate surface water rights downstream from the permit area will be damaged by the Buckskin Mine activities. In the unlikely event Buckskin Mine operations cause contamination, diminution, or interruption of a legitimate water right of an owner of interest in real property, Buckskin Mine will replace the affected water supply in accordance with state law.

Mining will physically remove the Anderson coal aquifer, Canyon coal aquifer, and overburden aquifers in the coal recovery area. These premining aquifers will be replaced with a backfilled overburden aquifer. Backfill hydraulic conductivities (permeabilities) are expected to vary widely but eventually they will approximate the range of values found for the premining coal aquifers as the backfill re-saturates and compacts. Backfill groundwater quality will likely meet criteria for livestock use (WDEQ-WQD Rules and Regulations, Chapter 8). Given the expected final saturation thickness, the backfill aquifer is expected to be able to supply sufficient water to supply post-mining stock wells.

Buckskin Mine acknowledges that groundwater drawdown in overburden strata above Anderson coal is much more likely to occur near to and due to its mining than due to any coal bed natural gas operations. The yields of eighteen (18) groundwater wells identified Buckskin Mine's LQD Permit No. 500 (i.e. Table MP 5-1) could be significantly affected. Upon a well owner's request, the Buckskin Mine, at its expense, will replace any third-party water supply

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well experiencing yield failure and/or documented adverse water quality changes making the well unfit for its normal uses, provided that the well receives at least part of its supply from overburden strata positioned above the Anderson coal as identified by Buckskin or, in the absence of Anderson coal, laterally equivalent strata.

In summary, historically WDEQ and Wyoming State Engineer have found that mining at the Buckskin Mine will not cause permanent adverse impacts to the hydrologic system. Further information may be found in the Cumulative Hydrologic Impact Assessments (CHIA) located in the WDEQ website at <http://deq.state.wy.us/lqd/>.

Both surface water and groundwater are covered in the Environmental Impact Statement (EIS) in the Water Resources section 4.2.4 on page 4-53. There you will find the discussion on the cumulative environmental consequences of mining the Hay Creek II tract. Further information can be found in the Powder River Basin Coal Review located on line at http://www.blm.gov/wy/st/en/programs/energy/Coal_Resources/PRB_Coal/prbdocs.html.

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ES-29 is the Executive Summary for the environmental impact statement (EIS). The affected environment and environmental consequences analysis of wetlands in the EIS can be found in greater detail in section 3.7 (Wetlands) on page 3-100. The impacts to wetlands found in the Hay Creek II study area are disclosed in detail. Impacts to the environment, including wetlands, were considered before a decision on leasing was made.