

**MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY COAL AND URANIUM PROGRAM  
CHECKLIST ENVIRONMENTAL ASSESSMENT  
FOR COAL PROSPECTING PERMIT**

**PERMITTEE:** Spring Creek Coal

**SITE:** Spring Creek Mine

**PERMIT ID:** X2011336

**CITY/TOWN:** Decker, MT

**DATE:** September 8, 2011

**COUNTY:** Big Horn

**LOCATION:** T8S R39E Sections 4, 5, 8, 9, 13, 15, 16, 17, 20, 21, 22, 28, 35

T9S R39E Sections 1, 2, 11, 12

T9S R40E Sections 6, 7

**PROPERTY OWNERSHIP:**

Federal  State  Private  County  Tribal

**TYPE AND PURPOSE OF ACTION:**

Cloud Peak Energy proposes to conduct prospecting operations to determine the location, quantity, and quality of coal in an area west, south, and north of the existing Spring Creek Mine. Cloud Peak Energy plans to drill two prospecting holes (one for geotechnical evaluation and one for core) at each of 44 locations. Drilling will be to depths approximately between 300 and 600 feet with an average well depth of 450 feet. Each drill site is bonded for one acre of disturbance even though the actual area of disturbance will likely be a fraction of the area (~ 0.1 acre per site). A total of 44 acres are bonded for the prospecting project.

This Environmental Assessment only evaluates potential impacts from the 88 holes listed in the short form application. Holes requiring a long form prospecting application will be addressed with a separate Environmental Assessment.

**Reclamation Plan:**

This work and reclamation would be done pursuant to Sub-Chapter 10 of the Strip and Underground Mine and Reclamation Act: Prospecting (ARM 17.24.1001 and ARM 17.24.1005). Reclamation is described in the Application and adheres to all applicable regulations. Excavation is not expected; however, if it is needed it will be kept to a minimum (e.g. mud pits). All surface disturbances will be reclaimed and broadcast seeded. Drill cuttings will be spread over the ground surface to less than one-half inch in thickness and all boreholes will be abandoned pursuant to ARM 17.24.1005. A bond of \$35,358 has been posted for this drilling project.

**IMPACTS ON THE PHYSICAL ENVIRONMENT**

<b>RESOURCE</b>	<b>[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES</b>
<p><b>1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:</b> Are soils present which are fragile, erosive, susceptible to compaction, or unstable? Are there unusual or unstable geologic features? Are there special reclamation considerations?</p>	<p>[N] The proposed locations are within an area of steep to rolling hills that run approximately northwest to southeast and also form a series of relatively flat plateaus. The area ranges in elevation from approximately 3700 ft to 4200 ft (Mean Sea Level Elevation). The hills are dissected by ephemeral drainages, with steep slopes and heavily eroded bedrock outcrops at some locations throughout the area.</p> <p>The area is in the northern part of the coal-rich Powder River Basin. The predominant geologic units are the Fort Union Formation and the younger Wasatch Formation. Soils in the area range from loam to sand with some areas covered by scoria gravel. Soils on the tops of the hills are typically poorly developed, and the soils in the area have been noted as being extremely erosive. Drainage bottoms contain colluvial sediments. Soil would not be removed or salvaged with the drill holes, and the impact to soils from drilling operations would be minimal.</p>
<p><b>2. WATER QUALITY, QUANTITY AND DISTRIBUTION:</b> Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?</p>	<p>[N] The area is dissected by ephemeral and intermittent drainages which flow in response to precipitation or snowmelt events. The major drainages covered by the prospecting permit are Spring Creek, North Fork Spring Creek, South Fork Spring Creek, Pearson Creek, and Pond Creek. Many of the creeks in the area, such as Spring Creek, contain springs and seeps. Springs often emerge at the base of outcroppings of highly fractured and permeable scoria deposits. The nearest perennial water source is the Tongue River approximately 4 miles to the east.</p> <p>Stock and domestic water in the area are supplied by wells and springs. Wells are often completed in coal seams which offer the best aquifer in the area. Water wells are typically completed between 60 and 300 ft deep in the Anderson or Dietz coal seams. Coal bed methane wells are also located within and nearby the prospecting area. These wells are completed in coal seams deeper than the proposed prospecting wells would penetrate. Impacts to the local groundwater system from prospecting activities are expected to be minimal. Prospecting wells would be properly abandoned with bentonite chips and flow within the aquifers is not expected to be altered as a result of drilling activities. Artesian conditions are not expected to be encountered during drilling. Wells with artesian conditions or with a loss of circulation would be appropriately abandoned using cement grout in compliance with ARM 17.24.1005(c)(i).</p>
<p><b>3. AIR QUALITY:</b> Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?</p>	<p>[N] Air quality in the area is primarily impacted by mining operations from Spring Creek Mine and Decker Mine. It is anticipated that the short-term prospecting operations would have minimal additional impact on the local air quality. Dust would be produced by vehicle travel and activity related to the drilling and abandonment operations. It is expected that dust formation</p>

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	would be minimized by the limited amount of vehicle (drill rig, water truck, support vehicles, etc.) traffic.
<p><b>4. VEGETATION COVER, QUANTITY AND QUALITY:</b> Will vegetative communities be significantly impacted? Are any rare plants or cover types present?</p>	<p>[N] Native grassland and sagebrush are the dominant vegetation types in the area with stands of juniper and ponderosa pines. The small disturbance area of the drill sites would not result in a significant disturbance to the greater vegetative community. <i>Astragalus barrii</i>, a plant species potentially at risk for Montana and its global distribution, has been previously found in the greater Spring Creek Mine area. However, the small and dispersed disturbance area is unlikely to impact this species.</p>
<p><b>5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:</b> Is there substantial use of the area by important wildlife, birds or fish?</p>	<p>[N] Wildlife surveys over the Spring Creek Mine have been conducted each year since permitting. Annual wildlife reports from 1994-2009 have documented twenty-three species of special concern including: Black-Tailed Prairie Dog, American White Pelican, Great Blue Heron, Bald Eagle, Golden Eagle, Ferruginous Hawk, Peregrine Falcon, Northern Goshawk, Greater Sage Grouse, Long-Billed Curlew, Franklin's Gull, Burrowing Owl, Lewis's Woodpecker, Red-Headed Woodpecker, Pinyon Jay, Blue-Gray Gnatcatcher, Sage Thrasher, Loggerhead Shrike, Brewer's Sparrow, Plains Spadefoot Toad, Great Plains Toad, Short-Horned Lizard, and Northern Sagebrush Lizard.</p> <p>Impacts to these species and all wildlife are expected to be minimal or non-existent since the area of disturbance at each site and in total is so small and activity at each drill site would be limited to only a few days. Additionally, vehicles would be kept to established roads whenever possible which would further limit impacts to wildlife. The creation or significant enhancement of existing roads is not allowed under the prospecting permit.</p>
<p><b>6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:</b> Are any federally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?</p>	<p>[N] Currently the Black-Footed Ferret is Federally listed as an endangered species, and the majority of Eastern Montana is considered suitable habitat. No black-footed ferrets have been documented within the immediate area of the Spring Creek Mine. No drill sites are located in wetlands.</p>
<p><b>7. HISTORICAL AND ARCHAEOLOGICAL SITES:</b> Are any historical, archaeological or paleontological resources present?</p>	<p>[Y] Cloud Peak Energy Resources, LLC contracted GCM Services, Inc. to conduct an archaeological inspection of all the drill sites and unimproved road or off road access routes. The survey identified one new cultural property and three previously known sites near the prospecting operations. None of the sites are eligible for the National Register of Historic Places (NRHP). Cloud Peak Energy has agreed to comply with recommendations by GCM Services to move drill locations 1115C and 1113C by at least 100</p>

### IMPACTS ON THE PHYSICAL ENVIRONMENT

RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
	and 200 feet respectively in order to minimize impacts on identified cultural resources.
<b>8. AESTHETICS:</b> Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?	[N] Proposed drilling activity would take place along the top of major ridges and hills and within drainages over 6 miles from the nearest town of Decker, MT, over 2 miles from Highway 314, and 4 miles from the Tongue River Reservoir, a local recreational lake. Drilling would not be visible from any of these locations. Some localized noise would be associated with drilling activities but would not be excessive and would not be heard from any populated area.
<b>9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:</b> Will the project use resources that are limited in the area? Are there other activities nearby that will affect the project?	[N] Project work would not use any resources which are considered limited in the area. This work would not place any demands upon the resources of land, water or air.
<b>10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES:</b> Are there other activities nearby that will affect the project?	[N] The project area is remote and used for mainly ranching and wildlife habitat. Nearby mining activities include coal mining and coal bed methane production. Neither of these mining activities would be affected by the prospecting.

### IMPACTS ON THE HUMAN POPULATION

RESOURCE	POTENTIAL IMPACTS AND MITIGATION MEASURES
<b>11. HUMAN HEALTH AND SAFETY:</b> Will this project add to health and safety risks in the area?	[N] The prospecting area is remote and no additional human health and safety risks are expected; there are typical health and safety risks associated with the actual operation of the prospecting equipment and other vehicles. No harmful chemicals or materials would be used during the prospecting activities.
<b>12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION:</b> Will the project add to or alter these activities?	[N] The prospecting area is remote and with the exception of livestock grazing there are no industrial or commercial activities near the proposed prospecting area. Increased traffic and activity at the drill sites may temporarily disturb nearby livestock, but this disturbance is expected to be minimal.
<b>13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:</b> Will the project	[N] The project would not result in any additional local jobs nor would it result in the elimination of any jobs. Drilling would require approximately 3 - 5 workers. Besides the workers operating the drill rig, other support jobs would include operation of heavy equipment (e.g. semi tractor trailers, water

**IMPACTS ON THE HUMAN POPULATION**

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create, move or eliminate jobs? If so, estimated number.	truck), and geological and geophysical logging of each borehole. Upon completion of the drilling activities employment would return to pre-project levels.
<b>14. LOCAL AND STATE TAX BASE AND TAX REVENUES:</b> Will the project create or eliminate tax revenue?	[Y] Employment taxes would be paid to the employees, generating some additional tax revenues.
<b>15. DEMAND FOR GOVERNMENT SERVICES:</b> Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?	[N] The proposed work would not add substantial traffic to existing roads. The project work would be self sufficient and no public services would be required.
<b>16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:</b> Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	[N] No locally adopted environmental plans and goals are in effect.
<b>17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:</b> Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?	[N] Wilderness, recreational areas, public parks or historic sites are not nearby or accessed through the proposed prospecting area. Work in the proposed prospecting area would not adversely affect any publicly owned park or places included in the national register of historic sites.
<b>18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:</b> Will the project add to the population and require additional housing?	[N]. Field inspection by the Department confirmed that there are no buildings or structures near or within the proposed prospecting area. Additional housing would not be required; drilling personnel will lodge in the nearby city of Sheridan, WY.
<b>19. SOCIAL STRUCTURES AND MORES:</b> Is some disruption of native or traditional lifestyles or communities possible?	[N] Disruption of lifestyles is not expected since there is minimal human activity within or near the proposed prospecting area.
<b>20. CULTURAL UNIQUENESS AND DIVERSITY:</b> Will the action cause a shift in some unique quality of the area?	[N] Field inspection by the Department confirmed that the area is remote and the proposed work would not affect or shift any unique quality of the area.

<b>IMPACTS ON THE HUMAN POPULATION</b>	
<b>RESOURCE</b>	<b>POTENTIAL IMPACTS AND MITIGATION MEASURES</b>
<p><b>21. PRIVATE PROPERTY IMPACTS:</b> Are we regulating the use of private property under a regulatory statute adopted pursuant to the police power of the state? (Property management, grants of financial assistance, and the exercise of the power of eminent domain are not within this category.) If not, no further analysis is required.</p>	<p>[N] The proposed project area consists of private, state, and federal lands and mineral rights. Cloud Peak Energy has obtained access agreements from each of the private surface and mineral owners, the State of Montana, and from the Bureau of Land Management. Thus, the landowners and mineral owners have agreed to the proposed action.</p>
<p><b>22. PRIVATE PROPERTY IMPACTS:</b> Does the proposed regulatory action restrict the use of the regulated person's private property? If not, no further analysis is required.</p>	<p>[N] The proposed action would not restrict the use of the regulated person's private property.</p>
<p><b>23. PRIVATE PROPERTY IMPACTS:</b> Does the agency have legal discretion to impose or not impose the proposed restriction or discretion as to how the restriction will be imposed? If not, no further analysis is required. If so, the agency must determine if there are alternatives that would reduce, minimize or eliminate the restriction on the use of private property, and analyze such alternatives.</p>	<p>[Y] The Department has a level of discretion in its permitting decisions.</p>
<p><b>24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:</b></p>	<p>[N]</p>

**25. Alternatives Considered:**

- a) No Action: The prospecting permit would not be issued and no prospecting activity would be conducted. The mineral owners and Cloud Peak Energy would not have the additional information on the location, quality, and quantity of the coal resource they would like to develop; therefore, this would probably preclude any development of the coal resource until such information is gathered. The potential use of this coal reserve would not be realized. There were no issues identified during the analysis that would require the Department to deny the application.

- b) Approval: This proposed exploration work would begin under the authority of Prospecting Permit X2011336 and would be subject to requirements of that permit, including, but not limited to, access, drilling, borehole plugging and abandonment, reclamation, and bonding. The application was complete and the environmental analysis indicated that the permit application could be approved.
- c) Approval with Modification: The Department found no need to modify the permit from what was presented in the application; therefore, this alternative was not pursued.

**26. Public Involvement:** The Notice of Application was published September 7, 2011 in the Sheridan Press with a 10-day comment period following the final date of publication.

**27. Other Governmental Agencies with Jurisdiction:** U.S. Department of Interior, Bureau of Land Management; U.S. Department of the Interior, Office of Surface Mining

**28. Magnitude and Significance of Potential Impacts:** None Expected

**29. Cumulative Effects:** None

**Recommendation for Further Environmental Analysis:**

- EIS
- More Detailed EA
- No Further Analysis

**EA Checklist Prepared By:** Emily Hinz