

EXPLORATION TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

June 14, 2005

TO: Internal File

THRU: Stephen J. Demczak, Environmental Scientist III/Engineering, Team Lead

FROM: James D. Smith, Environmental Scientist III/Hydrology

RE: Minor Coal Exploration Lease ML-48258, PacifiCorp, Deer Creek Mine, Permit #C/015/0018, Task ID #2177

SUMMARY:

PacifiCorp originally submitted an exploration plan in March 2005 to drill a total of six exploration holes within the Mill Fork Coal Lease ML-48258 in 2005. However, development mining in the Mill Fork Lease intercepted a complex series of rock splits that required revision of the exploration plan to assist in the interpretation of the geology. PacifiCorp now proposes to reduce the total number of exploration holes from six to four. The plan is formatted to follow the applicable portions of Coal Exploration Rules R645-200 through R645-203.

The helicopter supported drilling is planned for July 15 to August 15 2005. The Permittee anticipates completing all drilling and reclamation activities associated with this project within 60 days following the date of implementation.

EXPLORATION TECHNICAL ANALYSIS:

SCOPE AND RESPONSIBILITIES

Regulatory Reference: 30 CFR 772.1; 30 CFR 772.10; 30 CFR 772.11; R645-100-400; R645-200-100; R645-200-200; R645-201-100.

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Analysis:

Coring and drilling will remove less than 250 tons of coal. The Permittee plans to drill four boreholes in lease ML-48258, a.k.a. the Mill Fork lease, to explore the Blind Canyon and Hiawatha Coal Seams and enter the Star Point Sandstone (Section R645-200-122; Minor Coal Exploration).

The Legal and Financial Volume contains a statement under R645-301-115: Status of Unsuitability Claims that in consultation with DOGM and federal agencies, no lands within or adjacent to the permit area have been identified as qualifying under R645-103-300 as areas unsuitable for surface effects of underground mining: a review of R645-103-300 confirms that these lands are suitable (i.e., not unsuitable) for coal mining and reclamation operations, so exploration on these lands is not subject to the requirements of R645-201-300. Therefore, this is minor coal exploration.

The Permittee has submitted a Notice of Intention to Conduct Minor Coal Exploration under the requirements of R645-201- 200. In Section R-645-200-200 of the submittal, the Permittee commits to comply with the requirements of R645-200 through R645-303. The Division has received and is reviewing the Notice of Intention to Conduct Minor Coal Exploration and will enforce the terms of said Notice, and will respond as appropriate. The Division is coordinating review of the Notice of Intention to Conduct Minor Coal Exploration with other government agencies, as appropriate.

Findings:

The Scope and Responsibilities section of the Notice of Intention to Conduct Minor Coal Exploration is adequate to meet the requirements of the R645 Rules.

REQUIREMENTS FOR NOTICE OF INTENTION TO CONDUCT MINOR COAL EXPLORATION

Regulatory Reference: 30 CFR 772.10; 30 CFR 772.11; R645-100-412; R645-201-200.

Analysis:

The Permittee has submitted a Notice of Intention to Conduct Minor Coal Exploration under the requirements of R645-201- 200. In Section R-645-200-200 of the submittal, the Permittee commits to comply with the requirements of R645-200 through R645-303. The Division has received and is reviewing the Notice of Intention to Conduct Minor Coal Exploration and will enforce the terms of said Notice, and will respond as appropriate. The

Division is coordinating review of the Notice of Intention to Conduct Minor Coal Exploration with other government agencies, as appropriate.

Findings:

The Information in the Requirements for Notice of Intention to Conduct Minor Coal Exploration section is adequate to meet the requirements of the R645 Rules.

OPERATIONAL STANDARDS

Regulatory Reference: 30 CFR 772.13; R645-202-100.

Analysis:

Diversions of Overland flows and streams

Exploration will be by helicopter-assisted drilling. Pads, pits, and roads will not be built. The drills used are diesel powered rotary drill rigs mounted on 6-ft by 8-ft skids. Maximum area for the drill sites will be approximately 40-ft by 40-ft. There may be some minimal disruption of overland flow in the immediate vicinity of the drilling operations caused by removal of deadfall and brush and minor digging with hand tools to allow effective leveling of the drilling equipment. The drill sites are relatively level, with slopes of 20 percent or less; therefore, minimal site preparation will be necessary. (Section R645-201-225; Drill Hole Access and Pad Construction *and* Drill Methods & Procedures).

There will be no diversion of streams or disturbance of stream courses. The Permittee will obtain water for drilling from drainages in the vicinity of the proposed drill holes. Water for the drill holes will be pumped and gravity-fed directly from drainages located near the drill holes or from Indian Creek. Pumps will be gasoline or diesel powered. Water will be stored in tanks at each drill site (Section R645-202-234; Diversions of Overland Flows).

If there are diversions of overland flows, they will be in compliance with R-645-301-742.3 (Section R645-202-234; Diversions of Overland Flows).

Hydrologic Balance

A Temporary Exchange Application for water rights will be filed and approved with the State of Utah, Division of Water Rights prior to commencement of operations. The Permittee will obtain water for drilling from drainages in the vicinity of the proposed drill holes. Water for the drill holes will be pumped and gravity fed directly from the unnamed drainages located near

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the drill holes or from a pump located near Indian Creek. Gasoline or diesel powered water pumps stationed near the creek or canal and will pump water to tanks located at each drill site. No disturbance is to be made to the stream course.

The amount of water required for the project is estimated at 40,000 gallons per hole; therefore, the maximum total quantity of water to be used is estimated at approximately 160,000 gallons or 0.49 acre-feet (Section R645-202-234; Diversions of Overland Flows).

Ground water is not anticipated. If present, ground water will be reported to DOGM and other appropriate agencies. The exploration holes are not intended to be water-monitoring wells; however, if ground water is found, a determination will be made regarding the possible transfer and modification of the drill hole to a monitoring well (R645-202-243; Reclamation of Boreholes).

Acid- or toxic forming materials

During drilling, water and drilling fluids will be recirculated to the extent possible. Any returned cuttings and other materials will be captured in a container at the drill site. All cuttings will be transported by helicopter to the staging area, and from there transported to the Deer Creek or Cottonwood Waste Rock sites for disposal.

Fuel and lubricant containers will be stored on trucks at the staging areas, or at the drill sites will be placed on brattice or other acceptable ground cover, located away from surface drainages and surrounded by brattice, earth berm, or another acceptable containment structure. Brattice or other similar material will be placed on the ground beneath the drill rig (Section R645-201-225; Fire Suppression Equipment and Drill Methods & Procedures).

Drilling will utilize water and, as necessary, a biodegradable polymer drilling "mud" such as MINEX 1330. MSDS are available upon request (Section R645-201-225; Drill Methods & Procedures).

Spilled fluids will be contained by brattice ground cover and silt fence, and berms will be built if necessary. Materials affected by spills will be removed from the site and disposed at an approved location. If contaminated soil is removed, the site will be recontoured and seeded with the appropriate seed mix (Section R645-201-225; Practices to Protect from Adverse Impacts and to Reclaim the Area).

Findings:

The Information on Operational Standards is adequate to meet the requirements of the R645 Rules.

RECLAMATION STANDARDS

Regulatory Reference: 30 CFR 772.13; R645-202-200.

Analysis:

Approximate original contour

If contaminated soil is removed, the site will be recontoured and seeded with the appropriate seed mix.

Revegetation

If contaminated soil is removed, the site will be recontoured and seeded with the appropriate seed mix.

Boreholes

The Permittee commits that each exploration hole, borehole, well, or other exposed opening created during exploration will be reclaimed in accordance with R645-301-529, R645-301-551, R645-301-631, R645-301-738, and R645-301-765. No mine openings or exploration openings will be created, so R645-301-529 and R645-301-551 do not apply. R645-301-738 and R645-301-765 do not apply because the Permittee has no intent or plan to turn these exploration boreholes into water monitoring wells.

Upon completion of down-hole procedures, each drill hole will be completely sealed from the bottom to ground level with cement and bentonite slurry mixtures, mixed in compliance with standard cement mixing tables. Enough cement will be used to completely seal the coal horizon; the remainder of the hole will be filled with bentonite slurry to within 5 ft of the surface and a cement surface plug will fill the top 5 ft. A brass monument marker with the hole number and year will be placed in the top of the cement surface plug. The Permittee will contact the BLM Price Field Office prior to completion to verify the abandonment procedures. The Permittee will have any variance from this procedure approved in advance by SITLA and DOGM (Section R645-202-243; Reclamation of Boreholes).

Facilities and Equipment

All facilities and equipment will be promptly removed from the exploration area when no longer needed for exploration, unless the Division determines facilities and equipment may remain to provide additional environmental data, reduce or control the on-site and off-site effects of the exploration activities, or facilitate future coal mining and reclamation operations by the

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person conducting the exploration. The Permittee does not anticipate needing this equipment for any exploration beyond the four planned bore holes (Section R645-202-243; Removal of Equipment).

Following completion of drilling and cementing of the holes, the drill rig, water hose, tanks, pumping stations, and all associated equipment and materials will be removed to the staging areas and transported from the area. All trash, cuttings, contaminated soil, and extraneous materials will be removed and disposed of at approved locations. The surface will be returned to original contour and re-seeded with the approved seed mix and deadfall scattered over the site (R645-201-225; Method of Exploration, Fire Suppression Equipment).

Findings:

Information on Reclamation Standards is sufficient to meet the requirements of the R645 Coal Rules.

RECOMMENDATIONS:

The Division should approve this Notice of Intention to Conduct Minor Coal Exploration.

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