

November 1, 2004

Mr. T. W. Hardgrove
Pathfinder Mines Corporation
935 Pendell Boulevard
P.O. Box 730
Mills, Wyoming 82644

SUBJECT: PATHFINDER MINES CORPORATION - REQUEST FOR ADDITIONAL INFORMATION CONCERNING ALTERNATIVE CONCENTRATION LIMITS APPLICATION FOR THE SHIRLEY BASIN, WYOMING SITE (TAC LU0049)

Dear Mr. Hardgrove:

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the November 14, 2003, response to NRC comments provided by Pathfinder Mines Corporation (PMC) concerning the request for Alternative Concentration Limits (ACLs) for the Shirley Basin site. The Wyoming Department of Environmental Quality, Water Quality Division, has also reviewed the document and provided comments to us dated September 20, 2004. To allow staff to continue its evaluation of the ACLs application, additional information is necessary. The specific items required at this time are discussed in the enclosure. Additional information may be required after the Spring Creek assessment has been submitted and reviewed.

So that staff can complete the ACL evaluation in a timely manner, please provide your response, or a schedule for your response, within 30 days. If you have any questions concerning this letter or the enclosure, please contact me at (301) 415-6606 or via e-mail to esb@nrc.gov.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Sincerely,

/RA/

Elaine Brummett, Project Manager
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket No.: 40-6622
License No.: SUA-442

Enclosure: Request for Additional Information

cc: John Wagner, WDEQ, WQD

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NAME	E. Brummett		B. Garrett		B. von Till	
DATE	10/28/04		10/28/04		11/1/04	

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**REQUEST FOR ADDITIONAL INFORMATION
PATHFINDER MINES CORPORATION
SHIRLEY BASIN, WYOMING
ALTERNATIVE CONCENTRATION LIMITS APPLICATION**

1. Action:

There is still a concern with the potential contaminant migration from the tailings area under Spring Creek, or within the alluvial aquifer adjacent to the creek, that could lead to harmful exposures in the future. Pathfinder Mines Corporation (PMC) should provide additional information on all potential contaminants from the tailings seepage, but particularly the uranium found on the northeast side of Spring Creek. Data and maps indicating the hydraulic gradient across Spring Creek for both surface and ground water would be useful to document flow systems and the fate of contaminants within the system. Also, document other potential sources of the uranium detected in wells across the creek from the tailings impoundment.

Basis:

10 CFR Part 40, Appendix A Criterion 5(B)6(b), states that in making the potential hazard finding, the Commission will consider potential adverse effects on hydraulically-connected surface water quality considering, in part,

- The hydrogeological characteristics of the facility and the surrounding land;
- The quantity and quality of groundwater and the direction of groundwater flow;
- The proximity of the licensed site to surface waters;
- The current and future uses of surface waters in the area and any water quality standards established for those surface waters;
- The existing quality of surface water, including other sources of contamination and their cumulative impact on surface water quality;
- The potential for health risks caused by human exposure to waste constituents;
- The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and
- The persistence and permanence of the potential adverse effects.

Enclosure

2. Action:

Propose additional monitoring wells along the expected flow paths from the tailings impoundment to the long-Term Care Boundary and along the east and northeast side of Spring Creek, where justified.

Basis:

It is necessary to ensure that contaminants do not exceed standards when the existing pump back system is shut off. Early detection of unexpected elevated contaminant concentrations is essential to provide adequate time to perform correction action.

3. Action:

The licensee should commit to leave the existing pump back systems intact and operational for at least 1 year after approval of the ACL application, or until license termination, whichever is longer. Also, the Department of Energy (DOE) should be consulted on whether the systems should remain intact after DOE assumes control of the site.

Basis:

The pump back systems would be essential to perform corrective action if unexpected elevated contaminant concentrations are detected that could lead to any standards being exceeded. The DOE may consider the pump back systems an important component to the Long-Term Maintenance and Surveillance Plan.

4. Action:

Several terms were used in the submittal of November 14, 2003, to describe predicted exceedances at the POE. Define what was meant by the terms "brief intervals" and "special conditions" in that context. Also, indicate the likelihood of the occurrence of exceeding the surface or ground water standards at the POE given the degree of conservatism in the fate and transport modeling.

Basis:

There is concern that ending the current corrective action program will lead to exceedance of water standards for some constituents at or beyond the POE.