



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 8

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AUG 04 2009

Ref: EPR-SR

**ACTION MEMORANDUM AMENDMENT**

**SUBJECT:** Action Memorandum Amendment Requesting Approval to Address Amphibole Asbestos Contamination at the Cabinet View Country Club Golf Course for the Time-Critical Removal Action at the Libby Asbestos Site - Libby, Lincoln County, Montana.

**FROM:** Carol Rushin *Carol Rushin*  
Acting Regional Administrator

**THROUGH:** James E. Woolford, Director *James E. Woolford*  
Office of Superfund Remediation and Technology Innovation  
Deborah Y. Dietrich, Director *Deborah Y. Dietrich*  
Office of Emergency Management

**TO:** Mathy V. Stanislaus, Assistant Administrator  
Office of Solid Waste and Emergency Response

Re: Site ID#: BC  
Category of Removal: Time Critical, NPL, EPA Fund-Lead

**I. INTRODUCTION**

The purpose of this Action Memorandum Amendment is to request and document your approval for increasing the scope of the removal action described in earlier Action Memoranda by adding a time-critical removal action at the Cabinet View Country Club Golf Course within the Libby Asbestos Superfund Site (Site) in Lincoln County, MT. The most recent Action Memorandum Amendment addressing property cleanups in Libby, approved June 17, 2009, set forth the need and scope for additional residential and commercial property cleanup activities at the Site and increased the funding ceiling. Those cleanup activities are progressing and are still of a time critical nature. This Action Memorandum addresses a particularly large cleanup within the Libby Site, the Cabinet View Country Club Golf Course (CVCC or "Golf Course").

Soil sampling conducted in 2007 at the CVCC indicates that the nine greens and eighteen tee boxes on the front nine of the Golf Course constructed in 1956 contain a drainage layer (within 4 inches of the surface) of Libby Amphibole (LA)-bearing Libby vermiculite. The estimated volume of contaminated material is 16,000 cubic yards. Restoration costs at the Golf Course are expected to be higher than those for a typical cleanup of a commercial property due to golf course design requirements. The back nine holes of the Golf Course were constructed in 2007. Asbestos contaminated materials from the mine were not used in the construction of this portion of the Golf Course.

## **II. SITE CONDITIONS AND BACKGROUND**

### **A. Site Description**

The Site consists of seven operable units (OUs). OU4 comprises the residential, public, and commercial properties found in and around the town of Libby which are contaminated with LA. OU7 includes the town of Troy, Montana, and the immediate surrounding area. Troy is located 15 miles west of Libby and the town has a population of 957. The remaining OUs are all areas that are impacted by the mining, processing and transportation of LA containing vermiculite.

The initial Action Memorandum (May 23, 2000) and subsequent Amendments (July 2001, May 2002, May 2006, June 2006, September, 2008, and June, 2009) provide basic descriptions of the vermiculite mine, vermiculite processing facilities, several contaminated properties, and the conditions found throughout the Libby valley. For many decades, the asbestos-contaminated vermiculite was utilized throughout town in many public places such as school tracks, public parks, and baseball fields. Vermiculite mine tailings were also placed at some of these locations. Vermiculite insulation was also used in residences, public buildings, and schools.

This Action Memorandum Amendment addresses LA contamination at the front nine holes of the CVCC Golf Course. Apparently, because of its availability and physical characteristics, vermiculite waste was used as a sub-grade drainage feature in all of the original greens and tee boxes. As a result, LA contamination exists on these features, as well as in the areas immediately around them and along drainage paths leading away from them.

The CVCC Golf Course is open from April 1 through October 31 each year. Approximately 15,000 rounds of golf are played annually. The CVCC employs up to a dozen maintenance personnel who mow, rake, and tend to the course, including the contaminated areas.

Visible vermiculite is found throughout the original nine holes of the Golf Course. Specifically, visible vermiculite is found surrounding most greens, along portions of fairway, rough, in treed areas, in several flowerbeds, and in most bunkers.

EPA's contractors conducted a pre-design inspection of the Golf Course in July 2007. A

preliminary property-specific removal design, with specific excavation cut-lines, volume estimates, and a restoration plan has been completed. The design estimates that 16,000 cubic yards of asbestos contaminated material will be removed from the Golf Course.

#### B. Other Actions to Date

The initial Action Memorandum (May 23, 2000) and subsequent Amendments (July 2001, May 2002, May 2006, June 2006, September, 2008, and June 2009) provide basic descriptions of the vermiculite mine, vermiculite processing facilities, several contaminated properties, and the conditions found throughout the Libby valley. To date, no cleanup actions have been conducted at the Golf Course.

#### C. Current Actions

The Region plans on cleaning up between 100 and 150 properties and three additional creek segments in 2009. This is the only planned activity at the Golf Course.

#### D. State, Local, and Other Authorities' Roles

There are no significant changes in roles from the June, 2009 Action Memorandum Amendment. The Montana Department of Environmental Quality (MDEQ) has taken the lead role for the investigation and screening of Troy (OU7). The Agency for Toxic Substances and Disease Registry (ATSDR); the United States Geological Survey (USGS); and the National Institute for Occupational Safety and Health (NIOSH) are active participants in the Libby Action Plan (LAP), which is a suite of scientific studies aimed at expanding our knowledge of the toxicity of LA. The USGS also provides EPA with technical assistance regarding the mineralogy, morphology, and measurement of LA. Lincoln County and the City of Libby are active in several local advisory groups and coordinate directly with EPA on many issues regarding the removal actions and remedial investigations. In addition to its lead role for Troy, the MDEQ coordinates with EPA on the implementation of all removal actions and remedial investigations.

### **III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES**

Despite considerable progress on cleanup, conditions in Libby still present significant threats to public health. EPA has considered all of the factors described in Section 300.415(b)(ii) of the NCP, and has determined the following factor continues to be present at the Libby Asbestos Site.

#### A. Threats to Public Health or Welfare:

The human health risk associated with asbestos exposure to Golf Course workers was evaluated based on the outdoor activity based sampling conducted throughout OU4 during the Summer 2007 and Spring 2008. The outdoor activity based sampling evaluated exposure to asbestos for a range of soil concentrations and activities. Using the combined exposure for

mowing, raking and digging for the asbestos-contaminated soil identified at the Golf Course, the cancer risk was estimated to be in the range of 6 to 8 times  $10^{-4}$  for Golf Course workers. This risk calculation was based on the current IRIS toxicity value for asbestos and an exposure period of 2 hours per day, 150 days per year for 30 years. The exposure period applied is greater than the estimated residential exposure of 2 hours per day, 20 days per year. Current methodology for calculating risks associated with asbestos exposure was applied (OSWER Directive #9200.0-68, September 2008, Framework for Investigating Asbestos Contaminated Superfund Sites); the risk calculations were based on the mean exposure point concentration rather than 95% upper confidence level, likely resulting in underestimating the risk. Due to the multiple pathways an individual may be exposed to asbestos in Libby and the large range in measured asbestos exposure concentrations, the overall cancer risk to Golf Course workers and others may be higher.

Recreational golfers also are likely to be exposed to asbestos where present in soil at the Golf Course. The activity based sampling conducted in OU4 does not specifically model the asbestos exposure experienced by golfers. However, this exposure is likely to be less than that experienced by the Golf Course worker, because the period of exposure for the golfer is much less than that of the Golf Course worker. Furthermore, the activities conducted by the golfer are typically lower energy than those of the Golf Course worker, and therefore likely to result in lower asbestos exposures than a worker.

Libby amphibole asbestos fibers from the Libby mine site are hazardous to humans as evidenced by the occurrence of asbestos-related disease in area residents and workers. Workers and area residents exposed to asbestos fibers from the Libby mine site have been found to have increased mortality and morbidity from asbestos-related conditions, including asbestosis, pleural fibrosis, lung cancer, and mesothelioma. Asbestos-related lung diseases have also been observed in area residents with no direct occupational exposures, including family members of mine workers, and even in those with no known association with the vermiculite mining or processing activities (Weis, 2001; Miller, 2005; ATSDR 2002; ATSDR 2005).

#### **IV. ENDANGERMENT DETERMINATION**

The actual or threatened releases from this Site, if not addressed by continuing to implement the time-critical Removal Actions set forth in the original Action Memorandum and subsequent Amendments, may present an imminent and substantial endangerment to public health or welfare or the environment. The original Action Memorandum for the Site, dated May 23, 2000 (EPA Region 8, 2000), as well as subsequent Amendments and the Administrative Record, describe in detail evidence of the toxicity associated with exposure to LA, the large number of human exposure pathways, the significantly elevated disease rate in Libby residents, and the variety of conditions present in and around Libby that could lead to continuing exposures.

## V. EXEMPTION FROM STATUTORY LIMITS

The Libby Action Memorandum dated May 23, 2000, provided the documentation required to meet the NCP Section 300.415(b) criteria for a Removal Action. That Action Memorandum also provided EPA's determination regarding the applicability of the emergency exemption at CERCLA Section 104(c)(1)(A) [NCP Section 300.415(b)(5)(i)]. The May 2002 Action Memorandum Amendment provided EPA's determination concerning the consistency exemption at CERCLA Section 104(c)(1) [NCP Section 300.415(b)(5)(ii)]. These provisions continue to apply to the Golf Course removal action. The June, 2009 Action Memorandum Amendment included a ceiling increase for additional residential/commercial properties, including the Golf Course, under the previously granted statutory limits exemption.

## VI. PROPOSED ACTIONS AND ESTIMATED COSTS

### A. Proposed Action Description

The Action Memorandum Amendment from May 2002 sets forth the basic scope for the current set of Removal Actions at the Libby Asbestos Site. The current set of Action Memorandum Amendments, including the Creeks Action Memorandum Amendment, acknowledges that more properties require cleanup than originally anticipated. This Action Memorandum Amendment addresses the CVCC Golf Course.

The CVCC Golf Course was one of the properties identified in the 2002 Contaminant Screening Survey with the presence of visible vermiculite in special use areas. Given its size and scope, and the complexity of conducting an appropriate restoration on a Golf Course, the CVCC work will be designed and implemented separately from typical commercial properties.

The removal of asbestos contamination will be conducted by the EPA. Due to the special construction requirements for the restoration of the Golf Course, the Golf Course restoration will be managed by the CVCC. The federal funds allocated to the Golf Course restoration was based on a government cost estimate to restore the Golf Course to its original configuration. The funds will be placed in an escrow account which can be drawn upon as the restoration work progresses. EPA will provide oversight to assure that federal funds are use properly by the CVCC. The CVCC will be responsible for costs associated with improvements to the Golf Course.

### B. Contribution to remedial performance

The Site was made final on the NPL in October 2002. While cleanup at the Site continues to be conducted using removal authority, the Site was transitioned to the Region 8 Remedial Program after final listing on the NPL. It is expected that the cleanup approaches used during removal actions will be similar to, and consistent with, those used during remedial actions.

### C. Description of alternative technologies

EPA attempts to employ the most appropriate technologies for addressing risks, but there are no known viable alternative technologies available at this time for addressing asbestos.

### D. EE/CA

No EE/CA is required.

### E. Applicable or relevant and appropriate requirements

See the Federal and State ARARs identified and/or discussed in the original Action Memorandum dated May 23, 2000.

### F. Project Schedule

Work on the Golf Course will begin during the 2009 construction season, and is to be completed in 2010.

### G. Estimated Costs

The estimated extramural cost to conduct the Removal Action at the Golf Course is \$2.0 Million. The funding ceiling increase approved under the June 2009 Action Memorandum Amendment raised the overall site ceiling to \$333,491,500, which includes sufficient funding to complete the Removal Action at the Golf Course.

## **VII. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN**

Delayed action will result in continued human exposure to LA resulting in unacceptable risk. This will continue to burden an already impacted community.

## **VIII. OUTSTANDING POLICY ISSUES**

There are no new policy issues or considerations.

## **IX. ENFORCEMENT**

A separate enforcement summary has been prepared by the Site Attorney.

## **X. RECOMMENDATION**

This decision document represents the selected removal action for the removal of Libby Amphibole asbestos sources from the Golf Course at the Libby Asbestos Site in Lincoln County, Montana. The proposed removal actions have been developed in accordance with CERCLA as

amended and are consistent with the NCP. The decision is based on the Administrative Record for the Site. Conditions at the Site continue to meet the NCP [40 CFR § 300.415(b)] criteria for a removal action.

Approve: Mathy Stanislaus Date: 8/13/08  
Mathy V. Stanislaus,  
Assistant Administrator  
Office of Solid Waste and Emergency Response

Disapprove: \_\_\_\_\_ Date: \_\_\_\_\_  
Mathy V. Stanislaus,  
Assistant Administrator  
Office of Solid Waste and Emergency Response

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CDM, 2002. Sampling and Analysis Plan, Remedial Investigation, Contaminant Screening Study, Libby Asbestos Site, Operable Unit 4. April 30, 2002.

CDM 2003a. Sampling and Analysis Plan, Revision 1, Remedial Investigation, Contaminant Screening Study, Libby Asbestos Site, Operable Unit 4. May, 2003

CDM 2003b. Pre-Design Inspection Work Plan, Libby Asbestos Site, November 25, 2003.

CDM 2003c. Sampling and Analysis Plan Addendum, Post-Cleanup Evaluation Sampling, Remedial Investigation, Contaminant Screening Study, Libby Asbestos Site, Operable Unit 4. December. 1, 2003.

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Miller, 2005. Amphibole Mineral Fiber Contamination of Various Source Materials in Residential and Commercial Areas of Libby Pose an Imminent and Substantial Endangerment to Public Health. Memorandum from Aubrey Miller, USEPA Regional Medical Officer and

Site. Dated 9/29/2005.

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