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AUG 1 2 2008

Ref: EPR-SR

ACTION MEMORANDUM AMENDMENT

SUBJECT: Action Memorandum Amendment Request: Approval to Address Amphibole Asbestos Contamination in Certain Creeks for the Time-Critical Removal Action at the Libby Asbestos Site - Libby, Lincoln County, Montana

FROM: Carol Rushin
Acting Regional Administrator

THROUGH: James E. Woolford, Director
Office of Superfund Remediation and Technology Innovation

Deborah Dietrich, Director
Office of Emergency Management

TO: Susan Parker Bodine, 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 approval of an action and funding request for public areas within the Libby Asbestos Site (Site) in Lincoln County, Montana. There are other Action Memoranda and Amendments addressing commercial, public, and residential property cleanups in Libby, the latest dated May 15, 2006 (approved June 2, 2006) which set forth the need and scope for additional cleanup activities at the Site. Those cleanup activities are progressing and are still of a time critical nature as there are a significant number of properties that meet the current Site Removal Triggers (see Administrative Record, Cleanup Criteria Memo, December 15, 2003). Those Action Memoranda are related to the commercial and residential properties. This Action Memorandum is for public/recreational areas that have different sources of contamination as described below.

Ongoing Remedial Investigations have discovered that portions of riprap used to stabilize the banks of at least three local creeks were quarried from a syenite formation at the former vermiculite mine. This material contains numerous rocks comprised of nearly 100% Libby amphibole asbestos (LA) that when encountered creates potential exposures to Libby amphibole

asbestos. For Administrative purposes, there will be three Action Memoranda Amendments prepared separately. This Action Memorandum Amendment will cover the creeks. The second will address the ongoing commercial and residential cleanups in Libby, as well as in the nearby Town of Troy, Montana. The third will address a particularly large cleanup within the Libby Site, the Cabinet View Country Club Golf Course (CVCC or "Golf Course").

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

1. The overall Libby Site.

The Libby Site ("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 approximately 957. There are approximately 1,100 residential, public, and commercial properties within the Troy Study Area Boundary that are being investigated to determine whether cleanup is required This investigation started last year in 2007. The investigation in Troy may be expanded as further investigation is completed to determine the nature and extent of contamination. The remaining OUs are all areas that are impacted by the mining, processing and transportation of vermiculite.

The initial Action Memorandum (May 23, 2000) and subsequent Amendments (July 2001, May 2002, May 2006, and June 2006) provide basic descriptions of the vermiculite mine, vermiculite processing facilities, several contaminated properties, and the conditions found throughout the Libby valley. LA-containing mine wastes, as well as off-specification intermediate products (largely un-exfoliated vermiculite concentrate) were made available, and hence, widely distributed, throughout southern Lincoln County for use as fill material and/or as a soil conditioner. Thus, when the Site was listed on the National Priorities List (NPL), it included the nearby town of Troy.

2. The creeks in and around Libby

In addition to the residential and commercial properties of Troy and Libby, another situation has arisen in Libby that needs to be addressed as part of the ongoing Site response actions. In the winter of 1995-96, southern Lincoln County experienced flooding in almost all of its creeks. In response, Lincoln County and the US Army Corps of Engineers (USACE) undertook flood control and stream bed stabilization efforts in the Spring/Summer of 1996. Repair work was performed on at least five creeks: Libby Creek, Granite Creek, Flower Creek, Parmenter Creek, and Callahan Creek. Records indicate that one of the three sources of riprap used for this work was a quarry operated by the Kootenai Development Corporation (KDC) within the boundaries of the former vermiculite mine. Portions of this quarry area contain intrusive veins of LA.

While the record is not clear on how much of this material was actually used, the State mining permit allowed for up to 50,000 yds^3 to be quarried. Initial field inspections conducted by EPA contractors in July and August 2007 found LA-bearing rocks in three of the five creeks: Flower Creek, Granite Creek, and Callahan Creek. Rocks of nearly pure LA as well as rocks that contain intrusive veins of LA, were found incorporated into the riprap. Preliminary inspections of Granite Creek found LA bearing materials along an approximately 500 foot stretch of the west bank, just upstream of the Highway 2 Bridge. On Callahan Creek only one localized deposit was found on the east bank just downstream of the Highway 2 crossing. The material was widely distributed on Flower Creek, starting from where Flower Creek enters the populated area to the middle of Libby where Balsam Street crosses over Flower Creek (Creek Investigation Report, CDM 2007). EPA continues to work with Lincoln County and the USACE to assemble the available records of the projects, as well as to interview the personnel involved with the project. Further investigation as to the extent of contamination of all the creeks should be completed in 2008.

The creeks in Libby see an abundance of recreational use. As Libby has no swimming pool, the creeks tend to be popular swimming locations in summer months. Typically, children use the riprap along the bottom and banks of the creeks to construct small temporary dams. This creates a "swimming hole" behind the dams. Some of these dams are located in areas observed to have the LA bearing riprap. Given the force of the water, and the nature of the use, the dams are quite transitory. Thus, they are quite often built, deconstructed, moved, and re-built throughout the summer months. This tends to increase the frequency of direct contact with the LA-bearing rocks and therefore as discussed below in more detail, the potential for exposure to high levels of respirable LA fibers.

B. Other Actions to Date

In general, the previous Action Memoranda related to the commercial, public and residential properties. Each provide a description of various activities at the Site and their progress at the time of their writing. An update is also provided in the 2008 Action Memorandum Amendment addressing the Libby/Troy OUs. For the creeks, beginning in July 2007, members of EPA's Environmental Response Team undertook an Activity Based Sampling investigation in Flower Creek. This investigation found that exposure to total LA reached 3.8 f/cc (see Creek ABS Data, Administrative Record) during the building of a small "dam" as is typical for children in Libby in the summertime. As a result, there has been extensive and ongoing community outreach regarding the potential for exposure and warning signs have been posted, however, this is hardly an effective long-term deterrent for this exposure. In addition, parts of the riprap material in Flower Creek have been covered with plastic to further reduce exposure.

C. Current Actions

EPA Region 8 began the 2008 construction season in April 2008. Work on the creeks is scheduled to begin in early August 2008. Prior to construction, the contractor will perform some clearing and grubbing of each of the response areas for the creeks.

The work on Granite Creek is scheduled to begin August 2008. After the clearing and grubbing, removal of some identified LA rocks and vermiculite will take place and then approximately 1400 lineal feet of levee will be covered with an encapsulant (approximately 3" of shotcrete) which will bind the sediments and other materials of concern that are embedded and inaccessible without total removal of the levee. A 30" layer of Class III riprap will be added to this once the shotcrete is poured. Once EPA's activities are completed, the USACE will follow up with normal scheduled repairs.

Callahan Creek will follow the same procedures as Granite Creek and is scheduled to occur shortly after Granite Creek is completed.

The work on Flower Creek will occur after Callahan Creek and it has six areas of LA material that have been identified for total removal and replacement. One of the reasons that the Flower Creek LA material will be totally removed and replaced is because there are residential yards adjacent to it and it has a more aggressive spring melt flow. As a result, the encapsulant material will not work as effectively due to hydraulic problems and the narrowing of the creek. By removing the LA material, it also allows for removal of sediment that has been found adjacent and around the LA riprap material.

D. State, Local, and Other Authorities' Roles

There are no significant changes in roles from the May 2006 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 Geologic Service (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 their lead role for Troy, the MDEQ coordinates with EPA on the implementation of all removal actions and remedial investigations. The USACE will assist EPA with the actions on the creeks by providing rip/rap material for flood control and stream bed stabilization once the contaminated material is removed or encapsulated. In addition, the USACE will be placing rip rap material on both Granite and Callahan Creeks as part of their flood control work.

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 at least two of the factors continue to be present at the Libby Asbestos Site (including Troy):

A. Threats to Public Health or Welfare:

A discussion of the type and nature of the risks posed throughout the Libby Asbestos Site has been provided in the previous Action Memoranda. In the period since the last Action Memorandum Amendment for the Site, there have been fires and other incidents that have released LA into the environment. In addition, based on findings from the summer of 2007, it is also clear that there is the potential for people who disturb rocks in the streams to be exposed to high concentrations of LA, especially while playing in the area's creeks and specifically building dams. In July 2007, members of EPA's Environmental Response Team undertook an Activity Based Sampling investigation in Flower Creek. This investigation found that exposure to total LA reached as high as 3.8 f/cc (see Creek ABS Data, Administrative Record) during the building of a small "dam" in Libby's creeks in the summertime. While considerable public outreach has been conducted and warning signs have been posted, this is hardly an effective long-term deterrent for this exposure.

LA 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).

B. Threats to the Environment

Work on an ecological risk assessment was initiated in September 2007. While currently no response actions are based on ecological impacts at the Site, this may change as data are collected and analyzed.

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, and this Action Memorandum Amendment 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 significantly elevated disease rate in Libby residents, and the variety of conditions present in and around Libby that lead to continuing exposures. This Action Memorandum Amendment specifically addresses the public health threat associated with the potentially high exposures to respirable LA that can occur when playing or building dams from the stream rocks that contain LA.

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)(2) criteria for a Removal Action. That Action Memorandum also provided EPA's determination regarding the applicability of CERCLA Section 104(c)(l) [NCP Section 300.415(b)(5)(i)]. As documented in the previous Action Memoranda, these provisions still apply to the creeks. The Action Memorandum Amendment for the Libby Site that is being prepared separately formally requests a ceiling increase under the already granted exemption from the statutory limits. Since this Action Memorandum Amendment is being prepared separately from the Libby Site Action Memorandum Amendment, it only shows costs that exceed the statutory limit for the creeks, not for the rest of the site..

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Action Description

EPA's action on the creeks will be a combination of monitoring, investigation, identification of LA-bearing rocks, removal of LA-bearing rocks and sediment, encapsulation of embedded material, and disposal. The USACE will be providing rip/rap material to replace the contaminated material once it is removed.

B. Contribution to Remedial Performance

The Site was made final on the NPL in October 2002. While cleanup across 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. Across the site it is expected that the cleanup approaches used during removal actions will be similar to, and consistent with, those that may be used during remedial actions. It is further expected that the removal action taken on these creeks will meet the long term protectiveness criteria for remedial action and given our present understanding under the present circumstances, it is the expectation that the creeks will need no additional remedial action following the removal actions described above.

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 Creeks is expected to begin during the summer of 2008 and will be finished by 2009.

G. Estimated Costs

This Amendment provides only a basic, cumulative amount for the removal ceiling documented in the June 2006 Action Memorandum Amendment.

This funding request is designed to cover the costs projected to cover cleanup work for the three creeks. Subsequent amendments will address the costs for additional property cleanups and the CVCC property.

Table 1. Proposed Removal Project Ceiling

Category	**Current Ceiling**	**Proposed Ceiling**
Extramural Costs		
Property Cleanups (1700 total)	$90,769,000	$90,769,000***
Creeks	$0	$ 3,000,000
Extramural Subtotal	$90,769,000	$93,769,000
Intramural Costs	$ 1,068,000	$ 100,000
Subtotal	$91,837,000	$93,869,000
Contingency @ 20%	N/A	$ 450,000
TOTAL	**$91,837,000**	**$94,319,000**

*** remains unchanged under this amendment

As documented in the May 2006 Action Memorandum Amendment (and in previous Action Memoranda), the Libby Asbestos Site has major investigative expenditures that do not count against the Site ceiling.

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

Delayed action will result in the ongoing potential for continued public exposure to high levels of LA. Failure to take action has the potential to increase risk to public health and 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 is being prepared by the Site Attorney.

X. RECOMMENDATION

This decision document represents the selected removal action for the removal of Libby Amphibole asbestos sources from public/recreational areas including but not limited to Flower Creek, Granite Creek, and Callahan Creek 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. The NCP [40 CFR § 300.415(b)(5)(i)] and [40 CFR § 300.415(b)(5)(ii)] criteria for exemptions from the statutory limits that have been previously documented continue to exist. I recommend your formal approval of the proposed removal action ceiling increase.

Approve: Susan P. Bodine Date: 9-24-08

Susan P. Bodine,
Assistant Administrator
Office of Solid Waste and Emergency Response

Disapprove: _____ Date: _____

Susan P. Bodine,
Assistant Administrator
Office of Solid Waste and Emergency Response