UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

CONTAINS ENFORCEMENT-SENSITIVE INFORMATION

MEMORANDUM

DATE:

SUBJ: Request for a Removal Action
Mt. Norris Boy Scout Reservation Site, Eden Mills, Lamoille County, VT
Action Memorandum

FROM: Gary Lipson, On-Scene Coordinator
Emergency Response and Removal Section II

THRU: Steven R. Novick, Chief
Emergency Response and Removal Section II

Arthur V. Johnson III, Chief
Emergency Planning & Response Branch

TO: James T. Owens III, Director
Office of Site Remediation and Restoration

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of the proposed removal action at the Mt. Norris Boy Scout Reservation Site (the Site), which is located at Boy Scout Camp Road and VT Route 100 in Eden Mills, Lamoille County, VT. Hazardous substances present in indoor air and dust and potentially exterior surface soils at the Site, if not addressed by implementing the response actions selected in this Action Memorandum, will continue to pose a threat to human health and the environment.

This proposed removal action is considered nationally significant or precedent setting because the action mitigates asbestos as the principle contaminant of

SDMS DocID 462817

concern. Therefore, EPA Headquarters concurrence regarding the conducting of a removal action has been requested and received.

There has been no use of the OSC's $200,000 warrant authority.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID# : VTN000105934
SITE ID# : 01FX
CATEGORY : Time-Critical

A. Site Description

1. Removal site evaluation

In 2007 and 2008, US EPA Region 1 conducted a removal action at the Vermont Asbestos Group (VAG) Mine Site in Eden and Lowell, VT. The mine which closed in 1993, contains millions of tons of waste rock tailings with varying % levels of asbestos. The purpose of that removal was to contain or filter asbestos laden precipitation run-off water from leaving the mine property and affected nearby surface water.

During the VAG removal action, evidence indicated that these potentially contaminated mine tailings had been moved off-site for many years to be used for a variety of purposes, including fill, road cover, grading material, etc. Ongoing inquiries by the VT Department of Environmental Conservation (DEC) led to conversations with officials of a boy scout camp, located approximately three miles from the mine. The officials stated that mine tailings had been brought to the camp an unknown number of years ago to be used as parking lot and potentially road cover material. The parking lot was later capped with asphalt.

On March 10, 2009, EPA received a letter from the DEC Waste Management Division requesting EPA assistance in conducting appropriate asbestos sampling and evaluation at the Mt. Norris Boy Scout Reservation. The Scout

Camp is owned by the Boy Scouts of America (BSA), a private, non-profit organization. It is operated locally by the BSA, Green Mountain Council, Waterbury, VT.

Until recently, under EPA regulations and guidance regarding asbestos, soil samples were analyzed by polarized light microscopy (PLM). Results were reported as % asbestos by weight. Soil containing less than 1% asbestos was considered below the level of concern and soil containing equal to or greater than 1% asbestos was to be the basis for a removal action. In 2004, EPA issued a document[1] which stated

> "...and it was concluded that the 1% threshold for asbestos in soil/debris as an action level may not be protective of human health in all instances of site cleanups. The 1% threshold is not risk-based and an accurate exposure value could only be determined through site sampling techniques that generate fibers from soil and bulk samples. Therefore we recommend the development of risk-based, site specific action levels to determine if response actions for asbestos in soil/debris should be undertaken. Recent data from the Libby site and other sites provide evidence that soil/debris containing significantly less than 1% asbestos can release unacceptable air concentrations of all types of asbestos fibers (i.e., serpentine/chrysotile and amphibole/tremolite)."

When appropriate, EPA now characterizes site-specific potential health risks by evaluating the concentrations of asbestos fibers measured in air with estimates of exposure and toxicity. The concentrations of asbestos in air are measured by conducting Activity Based Sampling (ABS) which is collecting air samples while performing activities that mimic normal site actions.

From March 24-26, 2009, the first round of sampling was conducted at the Site. This included ABS and microvac dust sampling from within seven (7) on-site buildings, considered to be representative of all the buildings. The activity consisted of sweeping the floor for a specified amount of time and

[1] EPA.2004.Clarifying Cleanup Goals and Identification of New Assessment Tools for Evaluating Asbestos at Superfund Cleanups. OSWER 9345.4-05

accompanying air sample collection via personnel pumps (breathing zone) and near-by fixed station pumps. In addition, five-point composite soil samples were collected outside and near the access points to the seven structures as well as from three camping areas and from an athletic field. Due to the snow and ice cover on the majority of the ground cover of the Site, neither exterior ABS nor extensive soil sampling was conducted at that time.

When evaluating the ABS data, exposure assumptions are site-specific. In this case, two site specific exposure scenarios were evaluated: seasonal exposure was assumed for campers and staff, and full-time residential exposure was assumed for the Ranger and his family as they are the only full-time residents at the camp.

Estimates of toxicity are based on the potential for asbestos to cause cancer. The risks are characterized as the incremental chance of getting cancer over a lifetime as a result of site-specific exposure. EPA generally considers risks of one in ten thousand (1 in 10,000 or $1x10^{-4}$) to one in a million (1 in 1,000,000 or $1x10^{-6}$) to be an acceptable range.

Dust. Asbestos fibers were detected in all seven buildings tested ranging from <996 structures/cm^2 to >1,000,000 s/cm^2. Five of the seven concentrations exceeded 10,000 s/cm^2 and three of the seven exceeded 100,000 s/cm^2. However, there is currently no methodology to assess potential human health hazards utilizing microvac dust concentrations. Limited studies of workplaces and residences regarding surface contamination by chrysotile asbestos indicate that levels of asbestos in settled dust as determined by the microvac technique are considered low if less than 1,000 structures per cubic centimeter (s/cm^2). Levels above 10,000 s/cm^2 are generally above background and levels above 100,000 s/cm^2 are considered elevated and indicative of a release or presence of significant contamination.[2] Given the very high concentrations of asbestos fibers in some cabins, the dust may be a reservoir of fibers that potentially could be released to air in the future.

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[2] Millette, James. Hays, Steve. 1994. Settled Dust Sampling and Analysis. Lewis Publishers, CRC Press.

Indoor Air (camping/staff/dining structures). Concentrations of asbestos fibers in air samples collected from all of the buildings tested (with the exception of the Ranger's house) ranged from non-detect to 0.2 fibers per cubic centimeter (0.2 f/cc). Based on conservative exposure assumptions, the maximum concentration detected exceeds the Superfund cancer acceptable risk range of $1x10^{-4}$ to $1x10^{-6}$. Most of the remaining sampling results were marginal, but within the generally acceptable Superfund cancer risk range.

Indoor Air (Ranger's House). The concentration of asbestos fibers in air ranged from 0.003 f/cc to 0.088 f/cc which exceeds the Superfund cancer acceptable risk range of $1x10^{-4}$ to $1x10^{-6}$.

Soil. Asbestos was not detected in any of the soil samples above the .25% detection level. Since ABS could not be conducted during this initial phase of the site investigation, additional soil sampling followed up by ABS was conducted at the Site in June and July, 2009.

2. Physical location

The Site is located in Eden Mills, VT, at Boy Scout Camp Road and Route 100. The latitude and longitude respectively is 44° 43' 32.2" and 72° 29' 41.5".

3. Site characteristics

The scout camp is approximately 952 acres. The main section of camp which includes the camping areas, activity fields, gathering areas (campfire, chapel, muster, etc.) and cabins (handicrafts, nature, health, etc.), and the Camp Ranger's residence, is located on approximately 550 acres that are bounded to the north by Vermont Route 100, to the west by Lake Eden, and to the north, east and south by woodland and residential property. The remaining estimated 402 acres are located along the north side of Route 100.

The camp which has been in operation since approximately 1950 is active, but was closed for this season due to the concern of potentially airborne asbestos in the cabins and in soil throughout the camp. In total, approximately 1,000 scouts and staff attend the camp each summer, although the scouts camp for one week periods.

Lake Eden is used for recreational purposes including boating, swimming, and fishing. It is surrounded by part and full time residences as well as private campgrounds and seasonal camping.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

The contaminant of concern at this site is asbestos which is a CERCLA hazardous substance as defined by 40 CFR §302.4. The prevalent form of asbestos at this site is chrysotile. As mentioned in Section II. A.1. above, asbestos was detected in indoor air and dust within a number of the on-site buildings. The maximum indoor air concentration detected was .2 fibers/cc and the maximum concentration of asbestos in dust was greater than 1,000,000 structures/cm^2.

The results from exterior soil sampling have been received and the majority of the data related to the ABS is expected by August 31, 2009. ABS results may support additional outdoor actions at the site.

5. NPL status

The Mt. Norris Boy Scout Reservation Site is not currently on the National Priorities List nor is it likely to be added to the NPL.

B. Other Actions to Date

1. Previous actions

During a time critical removal action at the VAG Mine Site, approximately three miles away, in nearby Eden and Lowell, VT, in 2007 and 2008, evidence was received by the US EPA regarding the disposition of asbestos laden mine tailings. Information was relayed to EPA by the DEC that tailings had previously been brought to the Scout Camp and used as cover material on the main parking lot. The period of time when the tailings were used is unknown, but it was also reported that the parking lot was subsequently covered with asphalt. Additional conversations indicated that tailings may have also been used as road cover at various locations throughout the camp.

On March 10, 2009, subsequent to an informational phone call between EPA, the DEC, and the Green Mountain Council of the BSA, a Scout Executive and CEO of the Council wrote to DEC requesting that asbestos testing be done on the property. This was followed by a letter to EPA from the Sites Program Manager of the DEC Waste Management Division, requesting that the EPA Removal Program conduct the appropriate asbestos testing and evaluation at the Site.

From March 24-26, 2009, the first round of sampling was conducted at the Site. This included Activity Based Sampling (ABS) and microvac dust sampling from within seven (7) on-site buildings, considered to be representative of the more than 30 buildings on-site. The activity consisted of sweeping for a specified amount of time and accompanying air sample collection via personnel pumps (breathing zone) and near-by fixed station pumps. In addition, five-point composite soil samples were collected outside and near the access points to the seven buildings as well as from three camping areas and from an athletic field. This sampling event was conducted early in the season in an attempt to characterize the situation and if there were no outstanding issues, allow the camp to host their normal summer scouting activities. Neither exterior ABS nor extensive soil sampling was conducted at that time due to the snow and ice cover on the majority of the ground cover of the Site.

From June 16-18, and 24-25, 2009, the previously conducted indoor sampling effort was followed up with exterior soil sample collection and on July 20 and 21, 2009, exterior ABS. These sampling efforts were conducted not only to

determine the source of the indoor asbestos but to determine if there was any asbestos present in outdoor locations that would continue to pose a risk to the camp inhabitants.

During the June sampling events, soil samples were collected at numerous locations and analyzed via PLM and Transmission Electron Microscopy (TEM). All samples consisted of a minimum of 10 aliquots:

Roadways

- 44 samples were collected from roads throughout the camp (surface (0-6") and subsurface (6"-12"))
- All sections were sampled including the Main Road, Handicrafts Road, Equinox Road, Mt Mansfield Camping Road, and the Shotgun Range Road
- Roadway samples included runoff/erosion deposition areas

Camping/Active use areas

- 11 individual camping areas were sampled (Equinox, Sugarbush, Mad River, Mansfield, Mt. Ellen, Jay Peak, Bromley, Okemo, Belvidere, Stratton, Ascutney)
- 22 active use areas were sampled. These include fields, recreation areas, and gathering points

Background sample locations

- sample stations were selected in consultation with the State of Vermont
- 5 background samples were collected

During the July sampling event, seven locations were selected for ABS. The locations and activity employed are listed below:

Main Parking Lot:	Sweeping
Dining Hall (East and West entrances):	Raking
Main Road section 3250'-3500':	Raking
Keysar Road:	Raking
Mt Mansfield Road:	Raking
Campfire Area:	Walking
Volleyball Court	Shuffling

2. Current actions

At the time of the writing of this Action Memorandum, the PLM and TEM results from the soil sampling have been received although the validated results will not be available until September 2009. The raw data from samples collected during ABS activities are not expected to be received for a minimum of one month and when weather conditions allow, ABS will be conducted at two additional locations. The unvalidated soil data at this time is indicating that the majority of the samples are < 1% asbestos, although experience on a national scale has shown that ABS can indicate releasable fibers at a level that can cause concern for human health, even at soil concentrations below 1%[3]. Therefore, the total extent of proposed cleanup will not be finalized until ABS data is received and interpreted.

C. State and Local Authorities' Roles

1. State and local actions to date

During the removal action at the nearby VAG Mine, the DEC began inquiring about anecdotal reports that mine tailings had been distributed over the course of many years to a number of yet unknown locations. This information was

[3] EPA OSWER Directive #9200.0-68, September 2008, Framework for Investigating Asbestos-Contaminated Superfund Sites states: "Sampling at multiple sites has shown that even when soils are non-detect by PLM, concentrations of asbestos in the air via ABS may result in unacceptable health risks."

later substantiated when documentation provided by the state showed that upwards of forty communities received these tailings. The state inquiries led to discussions with scout camp officials and it was determined that the tailings had been brought to the camp years ago and used as parking lot fill material and potentially road cover. The parking lot in question had been asphalted over some years later.

In addition, once EPA received the initial data confirming the presence of asbestos within the structures, DEC contracted with an environmental consulting firm that is licensed in the State of Vermont to conduct asbestos inspections. The company sampled all possible asbestos containing material (ACM) within the on-site buildings per State of Vermont regulations for asbestos. This was done to determine if building materials might have been the source of the asbestos detected in the indoor air and dust. The results indicated that there was very little ACM in the buildings and it was concluded that the minimal ACM did not have an appreciable affect on the previously detected higher concentrations of airborne asbestos.

2. Potential for continued State/local response

The DEC has stated that they will assist continuing response actions by supplying personnel, providing technical assistance, liaise with other state agencies, and continuing with their on-going investigation. Local BSA officials have also expressed their willingness to assist which may include painting/sealing interior building surfaces after the buildings have been cleaned.

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

Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants; [§300.415(b)(2)(i)];

As described earlier in this memorandum, the concentration of asbestos in indoor air (and dust) is considered a potential threat to human health. The population at risk includes young men of boy scout age, and teenage and adult staff. The total number of summer participants is approximately 1,000 with the staff serving the entire summer and the scout campers attending camp for minimum of one week. The scout ranger and his family reside at the camp year round.

Studies in humans and animals indicate that inhalation of asbestos fibers may lead to fibrotic lung disease (asbestosis), pleural plaques and thickening, and cancer of the lung, the pleura, and the peritoneum. Several government offices and regulatory agencies have considered all of the evidence regarding the carcinogenicity of asbestos. The Department of Health and Human Services (DHHS) has determined that asbestos is known to be a human carcinogen. The EPA has also determined that asbestos is a human carcinogen and the International Agency for Research on Cancer (IARC) has determined that asbestos is carcinogenic to humans[4].

High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate; [§300.415(b)(2)(iv)];

EPA headquarters guidance for asbestos cleanups no longer defines high levels of asbestos is soils as 1% or any alternative concentration, but instead recommends that ABS data be used to determine if unacceptable health risks exist or may exist at any given level of asbestos in soils, including levels below 1%. Ongoing ABS data evaluation will be used to define those areas of the site where asbestos fibers could potentially be released from the soil at a high enough concentration to be considered an unacceptable human health risk from the air/inhalation pathway.

Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released [§300.415(b)(2)(v)];

Since asbestos fibers of concern are in the microscopic range, they are extremely subject to windy conditions and air flow. Many of the on-site buildings are not air

[4] Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human services, Public Health Service, Toxicological Profile for Asbestos, September 2001.

tight and are subject to any air movement. In addition, the high concentrations of asbestos in dust within the buildings acts as a source of continuing contamination with wind/air flow exacerbating the situation.

The availability of other appropriate Federal or State response mechanisms to respond to the release [§300.415(b)(2)(vii)];

Representatives of the VT DEC have stated that they do not have the resources for mitigation of the scout camp and there is no other federal response mechanism.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.[5]

[5] In accordance with OSWER Directive 9360.0-34, an endangerment determination is made based on collaboration with a trained risk assessor.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

- Conduct site walk with cleanup contractor to determine timing and staffing and equipment needs.

On-Site Buildings

- Use negative air machines during building cleanup where applicable (e.g., not in a lean-to/three sided building);
- Use HEPA vacuum cleaners on all interior surfaces;
- Mop/wet wipe all interior surfaces;
- Conduct post cleanup sampling in a representative number of structures;
- Properly dispose of dust retentive items as appropriate (e.g., staff foam mattresses) and replace with similar items;
- Conduct post cleanup sealing/painting on interior building surfaces as appropriate. When post cleanup sampling data is available and results indicate safe re-occupancy levels, the boy scout council has indicated a willingness to conduct these tasks.

Roadways/Activity Areas

- Based on impending analytical results, cover sections of road or activity areas with an appropriate material, including but not limited to gravel, asphalt, and loam. This activity may include the excavation and disposal/moving of current surface material to

maintain a proper grade. In addition, due to severe drainage issues, modifications may have to be made to some areas to protect any cover material that may be applied. These modifications could include the installation of additional culverts, cleaning out and ironing of swales to move water to appropriate run-off areas, and creating basins to evenly distribute the flow of water.

- In conjunction with the EPA off-site rule, all hazardous substances/items containing hazardous substances (e.g., wash water, mattresses, HEPA filters) will be disposed of in EPA approved off-site disposal facilities;

- Repair response-related damage should any occur;

- Demobilize personnel and equipment when site work is complete.

2. Community relations

Public outreach activities will include:

- Coordination of removal activities with VT DEC, Town of Eden, and Boy Scout Officials

- Coordination with VT DEC, Town of Eden, and Boy Scout Officials to determine the need for and subsequent issuances of press releases and/or newsletters with removal action progress status;

- OSC availability at the Site during removal activities to address questions and/or concerns from Boy Scout Officials/the public;

- Public information sessions and/or public meetings as necessary; and

- Maintenance of an EPA OSC web site.

3. Contribution to remedial performance

The cleanup proposed in this Action Memorandum is designed to mitigate the threats to human health and the environment posed by the Site. The actions taken at the Site would be consistent with and will not impede any future responses.

4. Description of alternative technologies

No alternative technologies have been identified for this removal action.

5. Applicable or relevant and appropriate requirements (ARARs)

Federal ARARs will be met to the extent practicable considering the exigencies of the situation. The OSC has asked for and will coordinate with State officials to identify additional State ARARs, if any, and will meet, to the extent practicable, each ARAR identified in a timely manner.

6. Project schedule

Cleanup of the on-site structures is expected to take up to three weeks from the time of site mobilization. Removal activities pertaining to capping or covering of roadways and/or activity areas is dependent upon the extent of contamination and could potentially take up to two months or more. As the location of this site is in northern Vermont, severe weather conditions could potentially interfere with these activities, leading to completion of some of these activities in the spring of 2010. Indoor and outdoor activities may be concurrent.

B. Estimated Costs

COST CATEGORY		CEILING
REGIONAL REMOVAL ALLOWANCE COSTS:		
ERRS Contractor		$450,000.00
Interagency Agreement		$ 0.00
OTHER EXTRAMURAL COSTS NOT FUNDED FROM THE REGIONAL ALLOWANCE:		
START Contractor		$150,000.00
Extramural Subtotal		$600,000.00
Extramural Contingency	10%	$60,000.00
TOTAL, REMOVAL ACTION CEILING		**$660,000.00**

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

Based on data from samples collected by EPA and after input from and discussions with an EPA risk assessor, the VT DEC and the VT Department of Health (DOH), officials from the BSA and the BSA Green Mountain Council closed the Mt. Norris Scout Reservation for the summer of 2009. It is an overall goal for Mt. Norris to be able to open again for the 2010 season. A delay or failure to act will not only increase public health risks for the staff that maintains the site but may impact the ability of the camp to reopen the following season.

VII. OUTSTANDING POLICY ISSUES

There are no precedent-setting policy issues associated with this site.

VIII. ENFORCEMENT ... For Internal Distribution Only

See attached Enforcement Strategy.

The total EPA costs for this removal action based on full-time accounting practices that will be eligible for cost recovery are estimated to be $ 660,000 (extramural costs) + $125,000 (EPA intramural costs) = $785,000 X 1.361 (regional indirect rate) = **$1,068,385** [6].

IX. RECOMMENDATION

This decision document represents the selected removal action for the Mt. Norris Scout Reservation Site in Eden Mills, VT, developed in accordance with CERCLA, as amended, and is not inconsistent with the National Contingency Plan. The basis for this decision will be documented in the administrative record to be established for the Site.

Conditions at the Site meet the NCP Section 300.415 (b) criteria for a removal action based on the following factors:

Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants [§300.415(b)(2)(i)];

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[6]Direct Costs include direct extramural costs $660,000 and direct intramural costs $125,000. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site specific costs 36.1% x $785,000, consistent with the full accounting methodology effective October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.

High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate[7]*; [§300.415(b)(2)(iv)];*

Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released [§300.415(b)(2)(v)];

The availability of other appropriate Federal or State response mechanisms to respond to the release [§300.415(b)(2)(vii)];

I recommend that you approve the proposed removal action. The total removal action project ceiling if approved will be $660,000.

APPROVAL: _____ DATE: 9/4/09

DISAPPROVAL: _____ DATE:

[7] Pending ABS data evaluation