

**Special Bulletin A Polrep #1**

WRG4 Vermiculite Ravine Site  
Ellwood-Koppel Road  
Wayne Township, Lawrence County, PA 16117  
Latitude: 40.859833 north  
Longitude: - 80.302259 west

**DATE:** September 29, 2009

**FROM:** Deborah Lindsey, On-Scene Coordinator  
Western Response Branch (3HS32)

**TO:** Regional Response Center, U. S. EPA Region III

**SUBJECT:** Notification of \$250,000 Emergency CERCLA Removal Action at the WRG4 Vermiculite Ravine Site

**ATTN:** Karen Melvin, Acting Associate Director  
Office of Preparedness and Response (3HS30)

Fran Burns, Chief  
Western Response Branch (3HS32)

**I. ISSUE**

In conjunction with an on-going removal action at the WRG4 Vermiculite Site located in Ellwood City, Lawrence County, Pennsylvania, the On-Scene Coordinator (OSC) conducted a removal site evaluation in an adjacent ravine area to determine if asbestos contamination has migrated off site and to characterize any threats posed by any off-site migration. The removal site evaluation was performed in accordance with Section 300.410 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. § 300.410 and has identified a threat to public health or welfare or the environment due to the uncontrolled presence of hazardous substances, pollutants and/or contaminants that have migrated from the WRG4 Vermiculite Site and into the adjacent ravine. The proposed removal action addresses the need to mitigate the potential threats posed by fibrous amphibole asbestos that has been released into the environment from the migration of vermiculite ore and asbestos-contamination soil into the ravine from the WRG4 Vermiculite Site.

The OSC has determined that the Site meets the criteria of Section 300.415 of the NCP for initiating a Removal Action. As a result of the conditions, pursuant to Section 104 of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) as amended, 42 USC Section § 9604, an emergency removal action is needed at the Site. Pursuant to the redelegation of Authority 14-2, the OSC has authorized an emergency action in the amount of \$250,000 to initiate actions to prevent, minimize, stabilize or eliminate the release or

threat of release from the Site and to protect public health, welfare and/or the environment.

## **II. BACKGROUND**

### **A. Site Description**

The WRG4 Vermiculite Ravine Site is an undeveloped piece of property with an address description as Ellwood-Koppel Road in Wayne Township, PA. The property is triangular in shape and is described as a ravine since it has steep hillsides leading down to a hollow. The northern side of the ravine is approximately 75 feet to the bottom of the ravine with a 1.5:1 slope and borders an active railroad line operated by the Buffalo & Pittsburgh Railroad and owned by CSX Transportation. The southeast side of the ravine is approximately 30 feet to the bottom of the ravine with a 2:1 slope and borders an abandoned railroad spur once known as the Ellwood City Branch line owned and operated by the Pittsburgh & Lake Erie Railroad. The ravine is also located to the west and downgradient from the WRG4 Vermiculite Site where a cleanup of asbestos-contaminated soil has been completed.

### **B. Site Background**

EPA has been conducting investigations at current and former vermiculite facilities in the United States which received vermiculite ore from the W.R. Grace mine in Libby, Montana. Vermiculite ore from the Libby mines has been found to contain asbestos minerals that when processed results in the release of fibrous amphibole asbestos into the air, soil and associated waste product.

As a result of EPA's investigations into the former W.R. Grace vermiculite exfoliation facilities, EPA determined that a former vermiculite facility located in Ellwood City, Pennsylvania received vermiculite ore from the Libby mine and operated as an exfoliating facility from approximately 1954 to 1969. EPA further determined that large amounts of vermiculite, in both the expanded and unexpanded form, were present in both the surface and subsurface soils of the former vermiculite facility and adjacent properties including the Moose Lodge and the former Pittsburgh & Lake Erie Railroad (PLERR) Ellwood City Branch Line. Analytical results reported measurable amounts of asbestos in the both the surface and subsurface soils samples at levels which posed a threat to public health or welfare or the environment. EPA initiated a cleanup at the former vermiculite facility and adjacent properties to mitigate the potential threats posed by fibrous amphibole asbestos.

As the cleanup progressed at the former vermiculite facility and adjacent properties, a resident expressed concern regarding the potential for asbestos contamination to be located within a ravine that is adjacent to the former PLERR Ellwood City Branch Line spur. The ravine is currently used by ATVs and dirt bikes for recreational purposes as well as by trespassers as evidenced by signs of campfires, trash and beer bottles. It was determined that soil sampling in the ravine was warranted based on its proximity to the contaminated hillside above the ravine, the evidence of ATV and dirt bikes on both the contaminated hillside and in the ravine, the

center of the ravine as a drainage pathway and the potential for wind dispersion from the tops of both sides of the ravine.

A total of fifty-seven (57) surface soil samples were collected and analyzed by the California Air Resources Board (CARB) Method 435 with modifications. Specific asbestos fibers that were to be identified and quantified included chrysotile, amosite, crocidolite, anthophyllite, tremolite and actinolite. Soil samples results reported that 38 of the 57 samples were non-detect for asbestos fibers. The remaining 19 samples reported actinolite asbestos fibers ranging from 0.25% to 3.25%. Actinolite is one of the forms of asbestos associated with the Libby vermiculite.

Based on the analytical results, the asbestos contamination does not appear to be throughout the ravine. The area of contamination is estimated at 0.4 acres. The contamination appears to be centered on the southwest slope adjacent to the former railroad spur and follows some of the ATV trails on the northern slope. It also does not appear that the surface water drainage in the ravine is spreading the contamination in a westerly direction.

With no established regulatory or health based standards to guide the determination of acceptable asbestos concentrations in surface soil or subsurface soils, the OSC has evaluated the analytical data against the ATSDR health consultation conducted for the adjacent properties. The previous ATSDR consultation stated that studies have shown that disturbing soil containing < 1% amphibole asbestos can suspend fibers at levels of health concern and that it is extremely difficult to predict airborne concentrations based on asbestos concentrations in the soil. The ATSDR public health consultation also stated that Libby asbestos generally does not break down in the environment at an appreciable rate and that management of the buried waste material should be handled in a manner that provides some level of assurance that the material will never be disturbed through activities such as construction or redevelopment. The ATSDR's health consultation concluded that the asbestos contamination at the adjacent properties (aka the WRG4 Vermiculite Site) could pose a public health hazard if buried/covered asbestos contaminated waste rock were aggressively disturbed and asbestos fiber released to the air and recommended removal and/or containment of asbestos containing materials on-site.

Since the levels of asbestos contamination in the soils located within the ravine are equal to or greater than the levels found on the adjacent properties, the OSC has made a determination that a removal action is warranted to mitigate the potential threats posed by fibrous amphibole asbestos-contaminated soils located within the ravine.

### **C. Types of Substances Present**

Asbestos is a hazardous substance as defined by 40 C.F.R. Section 302.4 of the NCP. As a result of the presence of asbestos in surface soils at the Site, there has been an actual and/or threatened release of hazardous substances into the environment. Amphibole asbestos (tremolite/actinolite) has been detected at this Site. Asbestos is of potential concern because chronic inhalation exposure to excessive levels of asbestos fibers suspended in air can result in lung diseases such as asbestosis, mesothelioma and lung cancer. Exposures via ingestion and dermal contact are

considered to be of lesser concern. Characteristics of amphibole asbestos that are of concern are fibers that are greater than 5 microns in length and have an aspect ratio (length to diameter) of greater than 5 to 1.

**D. National Priorities List**

The Site is not presently on the National Priorities List (NPL) and has not been proposed for listing to the NPL. The OSC will forward appropriate information to the site assessment program for followup as needed.

**E. State and Local Authorities Role**

The OSC has coordinated with the Pennsylvania Department of Environmental Protection (PADEP) and local officials regarding the anticipated actions at the Site and will continue to update them on the status of the actions.

**III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT**

Section 300.415 of the NCP, 40 C.F.R. § 300.415, lists the factors to be considered in determining the appropriateness of a Removal Action. Specifically, paragraphs (b) (2) (i), (v), and (vii) of Section 300.415 apply as follows to the conditions as they exist at the WRG4 Vermiculite Ravine Site.

Section 300.415(b)(2)(i) *“Actual or potential exposure to nearby human populations, animals or the food chain from hazardous substances or pollutants or contaminants”*

Vermiculite, in both the expanded and unexpanded form, has been detected both visually and through analytical analysis in the surface soils on the slopes and within the ravine area. The surface soils contain measured asbestos levels scattered within the ravine. There is documented evidence of recreational all terrain vehicles, dirt bike recreational activities and trespassing within the ravine making a direct exposure to the amphibole asbestos found in the surface soils when disturbed. The route of exposure that represents the greatest health concern is the inhalation of airborne fibers, dispersed from soil by the action of pedestrian or vehicular traffic and wind dispersion. In addition to the dispersion of fibers into the air, the frictional forces of foot and vehicular traffic on these surfaces would be expected to facilitate the breakdown of the amphibole asbestos bundles into smaller and more respirable fibers over time. Air dispersion of asbestos fibers could potentially impact any recreational users of the Site as well as any trespassers. Asbestos is of concern because chronic inhalation exposure to excessive levels of asbestos fibers suspended in air can result in lung diseases such as asbestosis, mesothelioma and lung cancer.

Section 300.415(b)(2)(v) *“Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.”*

The beginning of fall weather and cooler temperatures is causing the vegetation and leaves to diminish. With less vegetative ground cover and windier conditions in the fall months, surface soils are more exposed and there is a greater potential for asbestos to become airborne and available for inhalation. Heavy rainfall, snow melt or other forms of run-off inducing events would also tend to wash the fibers from the surface soils onto the adjacent properties where they could also become airborne during the dry summer season.

Section 300.415(b)(2)(vii)                      *“The availability of other appropriate federal or state response mechanisms to respond to the release.”*

The Pennsylvania Department of Environmental Protection has been consulted regarding the removal action at the Site and agrees that EPA resources are necessary to ensure that the threats posed by the Site are mitigated in a timely manner. EPA will conduct its actions in cooperation with State and local authorities.

#### **IV. DETERMINATION OF EMERGENCY**

The OSC has determined, based upon the information gathered, sampling results and visual assessment that a hazardous substance has been released into the environment and that the threat will continue until appropriate measures are taken. The Site conditions constitute an emergency.

#### **V. PROPOSED ACTIONS AND ESTIMATED COSTS**

##### **A. Actions**

The following actions will be conducted at the Site to support the removal activities:

1. Provide field office, support facilities and utility services while performing the necessary removal activities;
2. Site security sufficient to preclude access by trespassers or by persons not conducting or overseeing the removal action and prevent access to those areas for safety of public during non-working hours by securing the Site from the public using visible fencing, lighting, and/or security guards during the removal action;
3. Clear, remove & dispose of Site debris, vegetation and obstructions in order to safely and efficiently perform the necessary removal activities.
4. Excavate and remove asbestos-contaminated soils to an estimated depth of no more than two feet below grade unless surface conditions warrant an adjustment to the depth of excavation and fill all excavated areas with clean fill material and/or gravel.
5. Suppress dust during all removal activities.

6. Minimize erosion of soil through installation and maintenance of temporary erosion and sedimentation controls and features during removal actions and permanent erosion and sedimentation controls and features after removal of the contaminated soil (e.g., silt fencing, vegetative cover).
7. Sample and consolidate or otherwise prepare the excavated contaminated soils, vegetation and tree debris for appropriate off-Site disposal pursuant to Section 121(d)(3) of CERCLA and 40 CFR 300.440.
8. Dispose of off-Site all excavated contaminated soils, vegetation and tree debris pursuant to CERCLA Section 121 (d)(3) and 40 C.F.R. 300.440.
9. Restore the surface features to pre-existing conditions as appropriate .

**B. Estimated Costs**

ERRS	\$ 223,000
START	\$ 22,000
Unallocated	\$ 5,000
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Total	\$250,000

**C. Contribution to Remedial Performance**

A remedial action is not anticipated and therefore the removal action will not interfere with any remedial actions that may occur in the future and any actions will be consistent with the requirement of Section 104(a)(2) of CERCLA, 42 U.S.C. § 104(a)(2), which states that a removal action should contribute to the efficient performance of any long term action, should a remedial action occur.

**D. Compliance with ARARS**

The removal action will comply with all Applicable or Relevant and Appropriate Requirements (ARARs), to the extent practicable, considering the exigencies of the situation.

**VI. EXPECTED CHANGE IN THE SITUATION SHOULD NO ACTION BE TAKEN OR THE ACTION IS DELAYED**

If the actions described above are not conducted, there would be a continuing potential threat to human health. Asbestos, which is a hazardous substance, will continue to be exposed on the surface of the Site. Substantial release of hazardous substances into the environment may occur from disturbances from trespassers and recreational users of ATV vehicles. These

potential releases pose a significant threat to the human population in close proximity to the Site area.

## **VII. OUTSTANDING POLICY ISSUES**

Asbestos removal actions have been completed around the country at numerous removal sites which were initiated under Section 300.415 of the NCP. This removal does not set a precedent or constitute a nationally significant issue other than being part of this national effort. Because of the potentially broad impact of the vermiculite ore with high levels of amphibole asbestos mined from the Libby, Montana deposits, EPA Region III is coordinating with EPA Headquarters and other regions to assure a consistent approach to vermiculite issues. There are no outstanding policy issues related to the proposed Removal Actions at this Site.

## **VIII. ENFORCEMENT STATUS**

The OSC will coordinate with the Office of Enforcement and Cost Recovery regarding removal enforcement actions pertaining to the Site.

Because the conditions at the WRG4 Vermiculite Ravine Site meet conditions set forth in Section 300.415 of the National Contingency Plan for an immediate removal, the OSC has initiated funding for this Removal Action.



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Deborah Lindsey, OSC  
U.S. EPA, Region III  
Wheeling, WV 26003