UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

MEMORANDUM

DATE:

SUBJECT: Request for a Time-Critical Removal Action at Oak Ridge High School, El Dorado Hills, El Dorado County, California

FROM: Dan Suter, On-Scene Coordinator
Emergency Response Section (SFD-9-2)

THROUGH: Peter Guria, Chief
Emergency Response Section (SFD-9-2)

TO: Daniel Meer, Chief
Response, Planning & Assessment Branch (SFD-9)

I. PURPOSE

The purpose of this Action Memorandum is to obtain approval to spend up to $1,269,500 in direct costs to mitigate threats to human health and the environment posed by the presence of asbestos, a hazardous substance and known carcinogen, in soils at the Oak Ridge High School Site ("Site"). The Site is located at 1120 Harvard Way in El Dorado Hills, El Dorado County, California 95762.

The Action Memorandum would serve as approval for expenditures of U.S. EPA to take actions described herein to abate imminent and substantial endangerment posed by hazardous substances at the Site. The proposed removal of hazardous substances would be taken pursuant to Section 104(a)(1) of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. § 9604(a)(1), and Section 300.415 of the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"), 40 CFR § 300.415.

II. SITE CONDITIONS AND BACKGROUND

Site Status: Non-NPL
Category of Removal: Time-Critical
CERCLIS ID: CA000906055
SITE ID: LG

A. Site Description

1. Physical Location

The Site is located at 1120 Harvard Way, El Dorado Hills, El Dorado County, California, 38' 40" North 121' 4" West. See Figure 1 for the Site Location Map.

2. Site Characteristics

The Site is owned by the El Dorado Union School District (the "District"). The Site encompasses a high school campus of approximately 49 acres. Former grading and construction have exposed or left exposed soils containing actinolite, chrysotile and tremolite asbestos. Many areas of the campus have undergone mitigation; however other areas of asbestos containing soil remain exposed. These areas are the subject of this action.

The Site is bordered by housing subdivisions to the west, north, and south, and schools to the east and south. The school to the south is immediately adjacent to the Site. The geology of the area is known to include asbestos-bearing formations. These formations are known to contain amphibole and chrysotile asbestos.

3. Removal Site Evaluation

On November 6, 2003, US EPA OSC Hedy Salter and the Superfund Technical Assistance and Response Team ("START") contractor conducted a Site walk to identify areas of exposed soil that could contain asbestos that could become airborne with disturbance and pose a threat of human exposure. EPA identified several areas with these qualities.

On November 24 and 25, 2003, OSC Salter and START took soil samples in all of the areas of exposed soil identified during the site walk. The objective of the sampling was to quantify levels of asbestos in soil. The areas were divided into seventy-two 5,000 square foot (sf) decision units and 158 soil samples were taken, including quality control samples. Split samples were provided to the school district's contractor. Out of seventy-two decision unit areas, twenty-two contain asbestos in concentrations exceeding one percent by weight. EPA considers material containing one percent or more of asbestos by weight to be a hazardous substance subject to EPA's response authority under CERCLA. Additionally, as discussed below, EPA may consider lesser

concentrations to merit a response action. The distribution of material containing asbestos in concentrations exceeding one percent by weight demonstrates that the contaminated soil is not confined to one area of the Site. The soil asbestos concentrations are not uniform throughout the Site. The exposed soil throughout the Site needs to be remediated.

4. Release or Threatened Release Into the Environment of a Hazardous Substance, or Pollutant or Contaminant

Analytical results from samples collected ranged from non-detect to 6.2 per cent in total asbestos content. The asbestos found is primarily actinolite, an amphibole, with chrysotile, tremolite, and anthophyllite also present in some samples. The complete set of data is appended to this memorandum.

Asbestos in exposed soils at the Site may release into the environment and threaten public health and welfare because of the erosion of exposed soil by water and wind, the tracking of mud by humans and maintenance vehicles, and the generation of dust by human and mechanical activity throughout the Site.

Although measured ambient airborne levels of asbestos generally are relatively low and consistent with similar geologic areas in California, recent construction of soccer fields at the Site occurred in an area with an observed tremolite asbestos vein. Activity-based personal monitoring results from a July 24, 2003 sampling event at the Site demonstrated the potential for significant airborne asbestos exposures from activities such as outdoor athletics, construction and maintenance. These sampling results indicated a range of values from less than 0.0005 asbestos structures per cc to 0.1 asbestos structure per cc (equivalent to the OSHA time-weighted Permissible Exposure Limit over an eight-hour period (29 C.F.R. § 1910.1001(c))). A total of thirty-eight samples were collected, of which nine samples exceeded 0.01 asbestos structures per cc. By way of comparison, the California Air Resources Board (“CARB”) reported average ambient levels of asbestos in El Dorado County of 0.006 structures per cc.

While there is no specific regulatory response action level or “trigger level” for concentrations of asbestos in areas with naturally occurring asbestos, EPA considered many of the following items as also indicative of a substantial endangerment based on the levels of asbestos within soils at the Site:

1) The CARB amended its Asbestos Airborne Toxics Control Measure (“ATCM”) to apply to "restricted material." Restricted material includes ultramafic rock and any material that has been tested and found to have an asbestos content of 0.25 percent or greater, as measured by polarized light microscopy ("PLM");

2) The California Department of Toxic Substances Control (“DTSC”) used a measure much less than one per cent by weight to test backfill for use at the soccer fields at the Site. While not a determination by DTSC of safe levels of asbestos in soil or

of adequate clean up standards, this action by DTSC suggests a concern that even very low concentrations by weight in soils may be dangerous, and that levels should be conservative to ensure sufficient protection of children and employees at the Site, and others within the community. In a laboratory setting, it has been suggested that concentrations of only 0.001 per cent asbestos in soil are capable of releasing dangerous levels of asbestos fibers into the air (0.01 fibers/cubic centimeter ("f/cc")) when disturbed. Addison, et al (1988) THE RELEASE OF DISPERSED ASBESTOS FIBERS FROM SOILS, Edinburgh: Institute of Occupational Medicine, IOM Report TM88/14 (the "Addison Report").

3) The federal National Emission Standards for Hazardous Air Pollutants for asbestos defines "friable asbestos material" generally as greater than one per cent by weight as measured by PLM. 40 C.F.R. § 61.141. Similarly, OSHA regulations define "asbestos containing material" to be those materials that include more than one per cent by weight asbestos. 29 C.F.R. 1910.1001. However, this definition is based on then-available detection limits and not any risk assessment. As suggested by the Addison Report, significantly lower levels by weight in soil may cause a release of hazardous concentrations of asbestos into the air. At this Site, the July 24, 2003 activity-based sampling event indicated that potentially hazardous concentrations may occur in the air from outdoor athletics, construction and maintenance.

4) Out of seventy-two decision units, twenty-two results indicate asbestos concentrations exceeding one per cent by weight.

5. NPL Status

This Site is not on the National Priorities List. A countywide Preliminary Assessment / Site Investigation is planned by EPA for 2004.

B. <u>Other Actions to Date</u>

The District performed mitigation activities at the Site in the summer and fall of 2003. Mitigation included capping and grading of two soccer fields constructed within tremolite deposits; capping, excavating, and landscaping other areas of campus identified as having visible asbestos containing rock or soil; testing and mitigation of the track, baseball diamond, tennis courts, and basketball court; and cleaning and testing of classrooms. This work was performed under the direction of the El Dorado County Air Pollution Control District in compliance with the ATCM for mitigation of dust emissions from construction activities in asbestos containing soils.

C. State and Local Authorities' Roles

1. State and Local Actions to Date

The mitigation measures performed in 2003 by the District were under the direction of the El Dorado County Air Pollution Control District in compliance with the State's ATCM.

DTSC conducted a visual inspection of the Site early in 2003 to locate areas of asbestos contamination that could be visibly identified. DTSC also provided technical assistance to the local Air District in their oversight of the mitigation activities.

The CARB conducted ambient air sampling during the soccer field mitigation activities on site.

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

Current Site conditions pose the threat of potential future releases of hazardous substances. These substances include actinolite, chrysotile and tremolite asbestos present within exposed surface soils. The likelihood of direct human exposure, via inhalation of hazardous substances, and the threat of potential future releases and migration of those substances, pose an imminent and substantial endangerment to public health or welfare, or the environment based on the factors set forth in the NCP, 40 CFR § 300.415(b)(2). These factors include:

1. Actual or Potential Exposure to Hazardous Substances or Pollutants or Contaminants by Nearby Populations or the Food Chain

As described in Section II.A.4, high concentrations of asbestos exist in exposed surface soils at the site. Much of this material is easily disturbed and therefore likely to result in human exposure via inhalation. The threat of future releases of asbestos from the Site is on-going. Erosion of exposed soil by water and wind, tracking of mud by humans and maintenance vehicles, and dust generation by human and mechanical activity can create releases of respirable dust or soil capable of generating respirable dust. Construction involving soil disturbance and maintenance activities such as the use of leaf blowers on exposed soil can release dust into the air. Normal student activities such as running on dusty pathways can cause releases as well. Hazardous substances may be entrained in this naturally and mechanically generated dust.

Analytical results indicate that concentrations of asbestos identified in the soil exceed regulatory levels including the ATCM of 0.25 percent and EPA's presumed asbestos cleanup level of 1.0 per cent. Direct human contact via inhalation with dust containing asbestos in these concentrations may result in lung and respiratory tract diseases including lung cancer and malignant mesothelioma, a cancer of the pleural or

peritoneal cavity. These diseases can occur two to three decades after one or more inhalation exposures to asbestos. It is therefore of critical concern to prevent the exposure of children and young people.

Exposed soils containing asbestos at the Site are readily accessible to students, faculty, staff and visitors. These areas include athletic areas, roads, walkways, and student-made pathways. Maintenance equipment stored in sheds next to the track routinely tracks mud and dirt from contaminated areas onto the track and other areas of campus. During normal daily activities on campus students, faculty and other workers can track mud and dirt indoors for example on shoes, athletic equipment, and bicycle tires.

In addition, soils from the Site may be transported off Site due to normal human activity.

2. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released

Analytical results from soil analysis suggest that several areas of exposed soil on the Site contain hazardous substances, actinolite, chrysotile and tremolite asbestos. During the dry season dust containing asbestos could be dispersed by wind, and during the rainy season asbestos containing soils could be dispersed by tracking mud and runoff. This contamination could enter classrooms and generate dust.

3. Availability of other appropriate Federal or State response mechanisms to respond to the release

No other federal or state response mechanisms are available to respond to the potential release at this site.

IV. ENDANGERMENT DETERMINATION

Actual and threatened releases of hazardous substances from this Site, if not addressed by implementing a time-critical removal action may continue to present an imminent and substantial endangerment to public health or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. <u>Proposed Actions</u>

1. Proposed Action Description

EPA proposes to mitigate imminent and substantial threats to human health or welfare, or the environment by taking steps to prevent the release of hazardous substances to the surrounding environment where there is a high likelihood of direct

human contact. The removal action will include the following actions:

A. Mitigate threat of exposure to asbestos from asbestos-containing exposed soils by one or more of the following: capping; excavation, disposal and backfill; landscaping;

B. Site preparation and mobilization, which includes establishing power, communications, security, staging clean fill, topsoil, replacement vegetation, work trailers and all necessary equipment;

C. Perform air monitoring and sampling in accordance with OSHA requirements during all phases of the removal action, especially when there is a potential for airborne releases. Operational controls such as dust containment or suppression will be used to abate fugitive dust emissions;

D. To ensure Site safety and to minimize resident inconvenience a rolling removal will be implemented. Utilizing vacuum, hydraulic and mechanical means the containment of asbestos contaminated soil will occur throughout the Site. Areas beneath impermeable surfaces will be left in place. Photo documentation of before excavation and after landscaping will occur;

E. Prepare hazardous substances for proper transportation for containment on Site. Conduct post mitigation cleaning of indoor areas and outdoor paved areas;

F. Conduct post-mitigation indoor and outdoor air sampling; and

G. Require post-mitigation maintenance of remediated areas by responsible party.

2. Contribution to Remedial Performance

Long term remedial action at the Oak Ridge High School Site is not currently anticipated; however, EPA is considering including the Site in its county-wide Superfund Preliminary Assessment/Site Investigation. This removal action would complete all soil clean-up activities at the Site.

<u>The long-term cleanup plan for the Site:</u>

It is expected that this removal action will eliminate any threat of direct or indirect contact or inhalation of hazardous substances at the Site. There is no known groundwater contamination at the Site.

<u>Threats that will require attention prior to the start of a long-term cleanup:</u>

There is no long-term cleanup planned for this Site.

The extent to which the removal will ensure that threats are adequately abated:

The removal action will eliminate threats of exposure from asbestos containing exposed soil at the Site.

Consistency with the long-term remedy:

U.S. EPA asserts that the time-critical removal proposed for the Site is consistent with agency-wide policy on addressing asbestos contamination.

3. Description of Alternative Technologies

No alternative technologies are being considered for this removal action.

4. Applicable or Relevant and Appropriate Requirements (ARARs)

Section 300.415(j) of the NCP provides that removal actions must attain ARARs to the extent practicable, considering the exigencies of the situation.

Section 300.5 of the NCP defines applicable requirements as cleanup standards, standards of control, and other substantive environmental protection requirements, criteria or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location or other circumstances at a CERCLA site.

Cleanup standards for the exposed soils will be based on the ATCM and the EPA cleanup standards for asbestos as a hazardous material.

Section 300.5 of the NCP defines relevant and appropriate requirements as cleanup standards, standards of control and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not “applicable” to a hazardous substance, pollutant, or contaminant, remedial action, location, or other circumstances at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site and are well-suited to the particular site.

Section 300.415(l) of the NCP provides that, to the extent practicable, post-removal Site control should be provided prior to the initiation of the removal action. Post-removal Site control includes actions necessary to ensure the effectiveness and integrity of the removal action after the completion of the on-Site response. Post-removal Site control may be conducted by the affected state or political subdivision, local units of governement, or any responsible parties at the Site. EPA’s on-scene coordinator is coordinating the post-removal Site control with the District.

Because CERCLA on-site response actions do not require permitting, only substantive requirements are considered as possible ARARs. Administrative requirements such as approval of, or consultation with administrative bodies, issuance of permits, documentation, reporting, record keeping, and enforcement are not ARARs for the CERCLA sections confined to the site.

The following additional ARARs have been identified for the proposed response action. All can be attained.

Federal ARARs: The CERCLA Off-Site Disposal Rule OSWER Directive 9347.3-8FS; and the U.S. Department of Transportation of Hazardous Materials Regulations 49 CFR Part 171, 172 and 173.

State ARARs: CARB ATCM for Construction, Grading, Quarrying, and Surface Mining Operations (17 Cal Code Reg Sec 93105) as enforced by the El Dorado County APCD under section 39666(d) of the California Health and Safety Code.

5. Project Schedule

It is estimated that removal activities will take approximately 45 working days to complete.

B. Estimated Costs

Regional Removal Allowance Costs

Cleanup Contractor	$ 995,000
Contingency (10%)	$ 99,500
Subtotal	$ 1,094,500

Extramural Costs Not Funded from the Regional Allowance

START Contractor	$ 150,000
TOTAL, Extramural Project Ceiling	$ 1,244,500

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

Given the Site conditions, the nature of the hazardous substances documented on Site, and the potential exposure pathways to populations described in Sections III and IV above, actual or threatened releases of hazardous substances from the Site, if not addressed by implementing the response actions selected in this Action Memorandum, may present an imminent and substantial endangerment to public health or welfare, or the environment.

VII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues with the Site identified at this time.

VIII. ENFORCEMENT

Please see the attached Confidential Enforcement Addendum for a discussion regarding potentially responsible parties. In addition to the extramural costs estimated for the proposed action, a cost recovery enforcement action also may recover the following intramural costs:

Intramural Costs[1]

U.S. EPA Direct Costs	$ 25,000
U.S. EPA Indirect Costs (35.28%)	$ 447,880
TOTAL Intramural Costs	$ 472,880

The total U.S. EPA extramural and intramural costs for this removal action, based on full-cost accounting practices, that will be eligible for cost recovery are estimated to be $1,717,380.

IX. U.S. EPA RECOMMENDATION

This decision document represents the selected removal action for the Oak Ridge High School Site, El Dorado Hills, El Dorado County, California developed in accordance with CERCLA as amended, and not inconsistent with the NCP. This decision is based on the Administrative Record for the Site.

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1. Direct costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgement 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 costs from this estimate will affect the United States' right to cost recovery.

Because conditions at the Site meet the NCP criteria for a time-critical removal action, EPA enforcement staff recommend the approval of the removal action proposed in this Action Memorandum. The total project ceiling if approved will be $1,717,380, of which an estimated $1,094,500 comes from the Regional Removal Allowance. Approval may be indicated by signing below.

Approve: _____ _____
Daniel Meer, Chief Date
Response, Planning and Assessment Branch

Disapprove: _____ _____
Daniel Meer, Chief Date
Response, Planning and Assessment Branch

Enforcement Addendum

Attachments:

1. Index to the Administrative Record
2. Figure 1: Site Location Map
3. Figure 2: Aerial Photo of ORHS Campus
4. Removal Assessment Analytical Results Table

cc: L. Boynton, USEPA, OERR, HQ
DOI
E. Lowry, Director, DTSC

bcc: D. Suter, SFD-9-2
A. Helmlinger, ORC-3
C. Reich, SFD-9-2
C. Temple, SFD-9-2
Site File

ATTACHMENT I
INDEX TO THE ADMINISTRATIVE RECORD

1. START Removal Assessment Report (pending).

2. EPA Emergency Response Section (ERS) and Superfund Technical Assistance and Response Team (START) Emergency Response Quality Assurance Sampling Plan for Soil and Water Sampling - Oak Ridge High School Site, November 18, 2003.

3. Addison, et al (1988) THE RELEASE OF DISPERSED ASBESTOS FIBERS FROM SOILS, Edinburgh: Institute of Occupational Medicine, IOM Report TM88/14.