



**EXPLANATION OF
SIGNIFICANT DIFFERENCES
SMUGGLER MOUNTAIN
OPERABLE UNIT 1
ASPEN, PITKIN COUNTY,
COLORADO**

FILE PLAN

5.6

United States
Environmental Protection Agency
Region VIII

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INTRODUCTION

The purpose of this document is to explain the significant differences between the Smuggler Mountain Superfund Site cleanup remedy selected by the U.S. Environmental Protection Agency (EPA) in the Record of Decision (ROD)

as modified by the 1989 and 1990 Explanations of Significant Differences (ESDs) and 1991 Minor Modification. It addresses how the remedy will be implemented in light of additional public comment, including the public health recommendations of the Technical Advisory Committee (TAC).

**MAJOR CHANGES IN THE REMEDY THAT ARE PROPOSED
IN THIS EXPLANATION OF SIGNIFICANT DIFFERENCES**

The Operable Unit 1 (OU 1) remedial action, selected in the ROD and modified by the previous ESDs and minor modification, is being changed as follows:

- 1) The Pitkin County Health Department will institute a blood lead surveillance program for young children.
- 2) The berm area will be capped with clean soil and revegetated. Common-use areas of exposed mine waste, including the Mollie Gibson Park, will also be covered, revegetated and monitored.
- 3) Vegetable gardens should be planted in at least 12 inches of clean soil.
- 4) The Aspen/Pitkin Environmental Health Department will evaluate site construction

projects or land use changes to determine whether they present a threat of soil exposure to young children.

- 5) EPA will make a final determination regarding remediation of the OU 1 residential soils. This determination will be based on EPA's review of lead speciation studies that have been completed, bioavailability studies that are to be completed in 1993-1994, and review of the Pitkin County Health Department's blood lead and dust monitoring program.

INTRODUCTION

(continued)

Under Section 117 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act, EPA is required to publish an Explanation of Significant Differences when significant changes are proposed to the previously selected remedy.

The ESD shall be placed in the administrative record file for the site. This ESD, as well as the ROD, previous ESDs, the TAC Report, and major documents pertaining to activities at the Smuggler Site are available at the Pitkin County Library, the Aspen/Pitkin Environmental Health Department, and the EPA Superfund Records Center in the Denver EPA office.

SITE HISTORY AND CONTAMINATION PROBLEM

The Smuggler Mountain Superfund Site is located in the northeastern portion of Aspen on the southwestern flank of Smuggler Mountain. Waste rock and tailings from mines on Smuggler Mountain are exposed, covered or mixed with native soils across the site. The site is largely developed with large and small condominium units, mobile home parks, a tennis club, and numerous single family residences.

Soil analyses in the early 1980's, conducted first by residents and then later by EPA and the Potentially Responsible Parties (PRP's), identified concentrations of lead as high as 65,000 parts per million (ppm), well above EPA's cleanup level of 1,000 ppm. Elevated levels of cadmium were also found in the soils. The site was placed on the National Priorities List (NPL) in May 1986. A ROD was issued in September 1986, and a remedy for soil cleanup was selected.

SUMMARY OF THE RECORD OF DECISION

The objectives of the remedy selected in the 1986 ROD were to isolate waste materials with lead concentrations greater than 1,000 ppm by requiring:

- 1) removal and disposal of soils and tailings with lead concentrations greater than 5,000 ppm in an on-site repository,
- 2) capping of soils with lead concentrations between 1,000 and 5,000 ppm with 6 to 12 inches of clean soil and revegetation.
- 3) continued monitoring of the ground water,
- 4) provision of an alternate water supply for residences with domestic wells and,
- 5) operation and maintenance of the remedy through regular inspections as well as through land use restrictions, known as institutional controls.

The 1986 ROD selected a soil cleanup level for lead concentrations exceeding 1,000 ppm based on information in the Endangerment Assessment and Remedial Investigation/Feasibility Study and on recommendations by the Agency for Toxic Substances and Disease Registry (ATSDR).

The ROD divided the Site into two OUs: OU 1 is mostly residential; OU 2 includes the mine site on Smuggler Mountain. The ROD also required ground water monitoring as a result of suspected ground water contamination. Further consideration of the ground water was deferred to OU 2. However, current site conditions suggest that the ground water contamination identified earlier was due to the high natural metals content in the soils, or the result of well materials. Accordingly, ground water remediation will not be included in this ESD or as part of any response action at the site.

The remedy selected in the ROD was solely for OU 1. During the remedial design, additional technical information showed that the selected remedy was not implementable. The ROD was modified in the March 1989 ESD. This ESD was issued to accommodate the unexpectedly high volume of soils with lead concentrations over 1,000 ppm. EPA planned to remove the top two feet of soils containing more than 1,000 ppm lead in the residential areas and added an additional on-site repository for the extra volume of soil.

The Aspen community was concerned with the changes and submitted an alternative proposal to EPA for site clean up. This prompted EPA to change the remedy in a second ESD issued in May, 1990. from two feet to one foot of soil removal, and the placement of a geotextile liner between the clean soil, containing less than 250 ppm lead, and the contaminated soil. Several elements of the remedy proposed in the March 1989 ESD were changed in the May 1990 ESD. These changes consisted of a greater reliance on local land use restrictions known as Institutional Controls (ICs) and removal of six inches of contaminated soil in the Hunter Creek and Centennial condominium areas. However, one foot of soil would still be removed elsewhere on the site.

The May 1990 ESD relied more on ICs. Pitkin County adopted ICs in May 1991, but they were repealed based on citizen concern about the need for any remedy.

EPA issued a Minor Modification to the remedy in October 1991 that recognized that landowners could implement land use controls rather than local government. The October 1991 Minor Modification provided for implementation of institutional controls by the adoption and enforcement of local ordinances by Pitkin County or the City of Aspen, by compliance with EPA approved Operation and Maintenance plans by private parties or by the use of EPA's enforcement authority.

Some citizens contended that the cleanup, with heavy equipment and dust, would be more hazardous than living with the health risk at the site. To address the community's concerns, the TAC, an independent panel of six nationally recognized lead experts and three technical advisors, was convened in October 1992. The TAC released a final report in January 1993.

SUMMARY OF THE TAC REPORT

The TAC published a final report in January 1993. EPA reviewed this report and accepted the recommended public health actions. The TAC recommended that:

- 1) A program of blood lead surveillance be instituted for young children.
- 2) The highly contaminated berm area be capped with clean soil, revegetated, and be monitored to ensure its integrity. The Mollie Gibson Park and other common-use areas of exposed mine waste be covered and monitored.
- 3) Vegetable gardens be planted in at least 12 inches of clean soil.
- 4) Soil testing be made available to residents of the Site upon request.
- 5) The Aspen/Pitkin Environmental Health Department evaluate proposed site use changes for possible soil exposure changes to young children.
- 6) If studies demonstrate that lead-bearing materials at this Site have or can be made to have very low bioavailability, the above actions/recommendations be reviewed and perhaps modified.

CURRENT EXPLANATION OF SIGNIFICANT DIFFERENCES

- 1) The Pitkin County Health Department will institute a blood lead surveillance program for young children and an indoor dust sampling program. Neither program was part of the May 1990 ESD.
- 2) Pitkin County will cap the berm with clean soil and revegetate and maintain it. Common-use areas of exposed mine waste, including the Mollie Gibson Park, will also be covered, revegetated and monitored. The May 1990 ESD required removing the contaminated berm material and depositing it in a secure repository. The primary goal of the ROD and its previous modifications was to break the exposure pathway between humans and the contaminated material. This change can be implemented without compromising that goal. Inspection and maintenance will be necessary to ensure the effectiveness of

this remedy.

- 3) Vegetable gardens will be planted in at least 12 inches of clean soil. In the May 1990 ESD, flowers and vegetables were to be planted in raised-bed gardens that were at least six inches above the soil and vegetative cover. Together raised-bed gardens and one foot of clean soil were to provide at least 18 inches of clean soil. EPA has determined that 12 inches will be sufficient to break this potential pathway of exposure.
- 4) The Aspen/Pitkin Environmental Health Department will evaluate proposed construction projects or land use changes for the threat of soil exposure to young children. EPA will oversee the Department's efforts. The May 1990 ESD called for both EPA's and the Aspen/Pitkin Environmental Health Department's evaluation.
- 5) Lead speciation studies for the Smuggler Site have been completed, and bioavailability studies will be completed in 1993-1994. Upon completion of these studies and review of the blood lead and dust monitoring performed by the Pitkin County Health Department, EPA will determine the need for further residential soils cleanup. If EPA determines that the remedial actions in the May 1990 ESD need to be implemented, the TAC will be reconvened to review and comment on the findings of these studies. Based upon the TAC's review and additional public comment, EPA will make a final determination regarding cleanup of the OU 1 residential soils.
- 6) Ground water monitoring will cease at OU 1. A ground water corrective action will not be implemented at the site.

PROTECTIVENESS OF THE REMEDY

EPA has determined that the remedy included in this ESD is sufficient to protect human health and the environment. A final determination of the

protectiveness of these response actions and the need to implement the additional OU 1 response actions contained in the May 1990 ESD will be made in the future. Completion of presently ongoing bioavailability studies and monitoring of the Aspen residents is necessary for EPA's final determination. This determination will be made in accordance with the periodic review provision of CERCLA, Section 121(c).

SUPPORTING AGENCY COMMENTS

The Colorado Department of Health has reviewed the significant differences contained in this 1993 ESD and has provided comments to EPA. The Colorado Department of Health supports implementation of the remedy as presented in this ESD.

STATUTORY DETERMINATIONS

EPA has evaluated the cleanup presented in this ESD against nine criteria for acceptance.

- 1) **Overall Protection of Human Health and the Environment.** EPA has determined that the remedy will be protective of human health and the environment because it breaks the exposure pathway by preventing direct contact with contaminated soils and tailings. This remedy complies with the recommended health advisory by ATSDR for cleanup of soils contaminated with lead. This remedy requires remediation of certain common-use areas where mine waste materials are exposed.
- 2) **Compliance with Applicable or Relevant and Appropriate Requirements (ARARS).** The cleanup meets the statutory and regulatory evaluation criteria for selection of a remedy. Because hazardous substances will remain at the site, EPA will conduct periodic inspections of the site to ensure that the remedy remains protective of human health and the environment. EPA is required to conduct such reviews under Section 121(c) of CERCLA and the NCP.
- 3) **Short-Term Effectiveness.** During construction of this remedy, dust levels may increase slightly. Stringent health and safety measures and monitoring will minimize dust levels

and ensure the safety of both the workers and the residents.

4) **Long-Term Effectiveness and Permanence.** Contaminated material will remain onsite after completion of the remedy. The long-term effectiveness and permanence of the remedy is ensured by monitoring and maintenance of the clean soil cap and vegetative cover.

5) **Reduction of Toxicity, Mobility, or Volume through Treatment.** Because treatment of the principal threats at the site was determined to not be practicable, this remedy does not satisfy the statutory preference for treatment as a principle element of the remedy. However, this revised remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this site.

6) **Implementability.** EPA has determined that the remedy is fully implementable. The materials and services needed are available, and the remedy is technically and administratively feasible.

7) **Cost.** The cost of implementing the remedial actions identified in this ESD is estimated to be \$1.3 million. The remedy is considered to be cost effective.

8) **State Acceptance.** The Colorado Department of Health has reviewed and accepts the remedy.

9) **Community Acceptance.** The community accepted the recommendations of the TAC. The remedy implements those recommendations.

SCHEDULE FOR SITE CLEANUP

Implementation of this portion of the OU 1 remedy is expected to be initiated during the 1993 and 1994 construction seasons.

FOR MORE INFORMATION

All major documents pertaining to the Smuggler Site are available at the following information repositories:

Aspen/Pitkin Environmental Health Department
130 S. Galena St.
Aspen, CO 81611
(303) 925-2020

Pitkin County Library
120 E. Main st.
Aspen, CO 81611
(303) 925-7124

EPA Superfund Records Center
999 18th St., Suite 500
Denver, CO 80202
(303) 293-1807

QUESTIONS about this site should be directed to:

Rob Henneke,
Office of External Affairs (8OEA)
U.S. Environmental Protection Agency
999 18th, Suite 500
Denver, CO 80202

TELEPHONE: 303-294-1129
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or

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TELEPHONE: 303-293-1512
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