UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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Explanation of Significant Differences

Residential Populated Areas, Operable Unit 9
California Gulch Superfund Site
Lake County, CO

September 2009

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Residential and Commercial Populated Areas, Operable Unit 9
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1. Introduction

This Explanation of Significant Differences (ESD) presents the details of an addition to the remedy selected in the September 2, 1999 Record of Decision (ROD) for Residential Populated Areas, Operable Unit 9 (OU9), of the California Gulch Superfund Site (Site) in Lake County, CO.

Operable Unit 9 includes those portions of the Site where the land use is residential or that are currently zoned as residential/populated areas and as low-density residential areas. Future land use of OU9 is expected to continue to be residential.

This ESD, prepared in accordance with Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and with Part 300, Section 435(c)(2)(i) of Title 40 of the *Code of Federal Regulations,* 40 CFR 300.435(c)(2)(i), documents significant differences to the ROD. This ESD documents the decision to require institutional controls for 17 mine waste piles within OU9. These mine waste piles have soils at the surface that are under the 3500 mg/Kg lead residential action level but may have lead contamination at depth that exceeds the residential lead action level. This ESD does not change or alter any element of the Lake County Community Health Program (LCCHP).

The U.S. Environmental Protection Agency (EPA) is the lead agency for this ESD. The State of Colorado, through the Colorado Department of Public Health and the Environment (CDPHE) is the support agency for this ESD.

2. Site History, Contamination, and Selected Remedy

The Site is located 100 miles southwest of Denver in Lake County, Colorado. The Site covers 18 square miles and includes the City of Leadville, various parts of the Leadville Historic Mining District and Stringtown. The Site also includes a section of the Arkansas River from the confluence of California Gulch to the confluence of Two-Bit Gulch. The Site was placed on the National Priorities List due to concerns about the impact of mine drainage on surface waters in California Gulch and the impact of heavy metals loading in the Arkansas River.

Pursuant to a 1994 Consent Decree, EPA divided the Site into the 12 Operable Units (OUs). OUs 1 through 11 were designated to facilitate source remediation and correspond with areas of responsibility. OU12, which covers the entire Site, was designated to address Site-wide Surface and Groundwater.

OU9 Residential Populated Areas, of the California Gulch site includes portions of the Site where the land use is residential or that are currently zoned as residential-populated areas and as low-density residential areas. Potentially impacted areas within OU9 included residential yards, vacant lots, parks, school yards, playgrounds, and community use areas, including unpaved streets and alleys. In addition, 38 mine waste piles were identified within OU9.

The primary contaminant of concern for OU9 is lead in soil, dust, paint, and water. The risk assessment determined the following action levels for the media of concern.

Soil	–	3,500 mg/Kg
Dust	–	2,000 mg/Kg
Paint	–	6 mg/cm^2
Tap Water	–	15 micrograms/l

An Engineering Evaluation/Cost Analysis was prepared in 1995 to evaluate removal action alternatives for the 38 mine waste piles identified in the populated areas within OU9. During the Mine Remedial Investigation, 8 of the 38 piles were found to be stockpiles of construction materials or to not pose a threat to human health or the environment. However, one pile representing this group was evaluated with the remaining 30 piles as a control to confirm the EE/CA's findings. An Action Memorandum issued by the EPA in August 1996 selected a non-time-critical removal action requiring the removal of 14 piles with surface lead concentrations greater than 3,500 mg/Kg. Implementation of this removal action began in 1997 with the removal of four mine waste piles. The removal of the remaining ten mine waste piles was completed in 1999. The material excavated from the mine waste piles was taken to a repository for disposal and the excavated area revegetated.

The OU9 ROD, signed on September 2, 1999, was primarily focused on describing the Lake County Community Health Program (LCCHP), the selected remedy for Operable Unit 9. The LCCHP did not address the mine waste piles in OU9 because the ROD found that the selected removal actions for the 38 mine waste piles were consistent with the performance of the final remedial action selected for OU9. Additionally, these removal actions were considered the final remedies for mine waste piles within OU9.

3. Basis for and Description of Significant Differences

In one instance since the ROD, residential development occurred on one property where a mine waste pile (#207) was left in place in OU9. The property owner contacted EPA before working on this mine waste pile. Prior sampling of this material showed subsurface lead levels near or exceeding the 3500 mg/Kg soil action level for OU9 in this property owner's mine waste pile. This alerted EPA and CDPHE that subsurface lead levels within the remaining 17 mine waste piles may be above the 3500 mg/Kg action level and that excavation or movement of these piles could present an unacceptable risk. As long as the piles were left undisturbed, the surface soils with lead levels less than the 3500 mg/Kg level act as an effective cap.

EPA and CDPHE have determined that institutional controls are needed for the mine waste piles that were left in place within OU9 to protect human health and the environment. The objectives of the institutional controls are as follows:

1. Prevent construction of any type of residential dwelling or facility for human occupancy on the mine waste piles unless appropriate plans are approved by EPA or CDPHE; and

2. Maintain the integrity of current or future remedies.

The specific mine waste piles where institutional controls will be necessary are shown on the map in Appendix A, outlined in green (lead concentrations (Pb) < 2000 mg/Kg) and yellow (Pb > 2000-3500 mg/Kg). Mine waste piles shown in green (Pb < 2000 mg/Kg) include piles; 12, 23, 31, 34, 36, 331, and 339. Mine waste piles shown in yellow (Pb < 2000-3500 mg/Kg) include piles: 13, 18, 20, 27, 32, 33, 35, 207, and 340. (Note: waste pile 329 (shown in green) is the control pile that contains construction materials.)

Lake County recently amended its Land Use Code to provide specific protections for remedy elements in OUs 3 & 8 that EPA and CDPHE have identified as engineered remedies. Lake County has offered to extend those protections to OU9. Since the top six inches of the mine waste piles were found to be below the residential action level, each pile's surface soil is acting in the manner of an engineered cap and does not represent a source of lead exposure. For purposes of the Lake County Land Use Code, these 17 mine waste piles will be designated as engineered remedies. Extending the Lake County Land Use Code provisions to OU9 would meet the IC objectives set out above.

4. Support Agency Comments

CDPHE supports the EPA's decision to modify the remedy for the California Gulch OU9.

5. Statutory Determinations

Under CERCLA Section 121, EPA must select a remedy that is protective of human health and the environment that complies with Applicable or Relevant and Appropriate Requirements (ARARS), and is cost effective. EPA believes that the modification to the ROD for the mine waste piles in OU9 is appropriate and the remedy will remain protective of human health and the environment. The selected remedy will continue to comply with federal and state requirements that are applicable and relevant and appropriate to the remedial action. This ESD does not fundamentally alter the remedy selected in the ROD with respect to scope, performance or cost.

Section 121 also states that EPA must select a remedy that uses permanent solutions, alternative treatment technologies, or resource recovery technologies to the maximum extent practicable. In addition, CERCLA prefers remedies that include treatment that permanently and significantly reduces the volume, toxicity, or mobility of hazardous wastes as a principal element of the remedy. For sites where hazardous substances, pollutants or contamination remain on-site, EPA must conduct five-year reviews consistent with the CERCLA and the NCP. The purpose of the five-year review is to determine whether the remedy being implemented at a site is protective of

human health and the environment.

6. Public Participation Compliance

EPA will publish a notice in the Herald Democrat newspaper that describes the ESD and its availability for review (under Section 117(c) of CERCLA, 42 U.S.C. Section 9617). A formal public comment period is not required when issuing an ESD. This ESD and all documents that support the changes and clarifications are contained in the Administrative Record of the California Gulch Superfund Site (under CFR 40, Section 300.435(c)(2)(i)).

EPA will publish a notice of availability and a brief description of the ESD in the Leadville Herald Democrat. This ESD and supporting documents will become a part of the California Gulch Administrative Record file and information repository.

Comprehensive information on the Site is available at the:

U.S. EPA, Region 8, Superfund Records Center
1595 Wynkoop Street
Denver, CO 80202-1120
303.312.6473 or toll free 800.227.8917
Viewing hours: 8:00 a.m. to 4:30 p.m., M-F, excluding holidays

and

Lake County Public Library
1115 Harrison Avenue
Leadville, CO 80461
(719) 486-0569

7. References

1987. California Gulch Remedial Investigation, Leadville, Colorado, CH2M Hill, May.

1992. Soil Inventory and Map, California Gulch Study Area, Leadville, Colorado, Walsh and Associates, May.

1993. Final Smelter Remedial Investigation Report, California Gulch Site, Leadville, Colorado, Walsh and Associates, April.

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ASARCO, Incorporated, 2001. Removal Action Completion Report, Operable Unit 9, California Gulch Superfund Site, Leadville, Colorado. Prepared by MFG, Inc. July.

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9/30/09
Date

Gary W. Baughman

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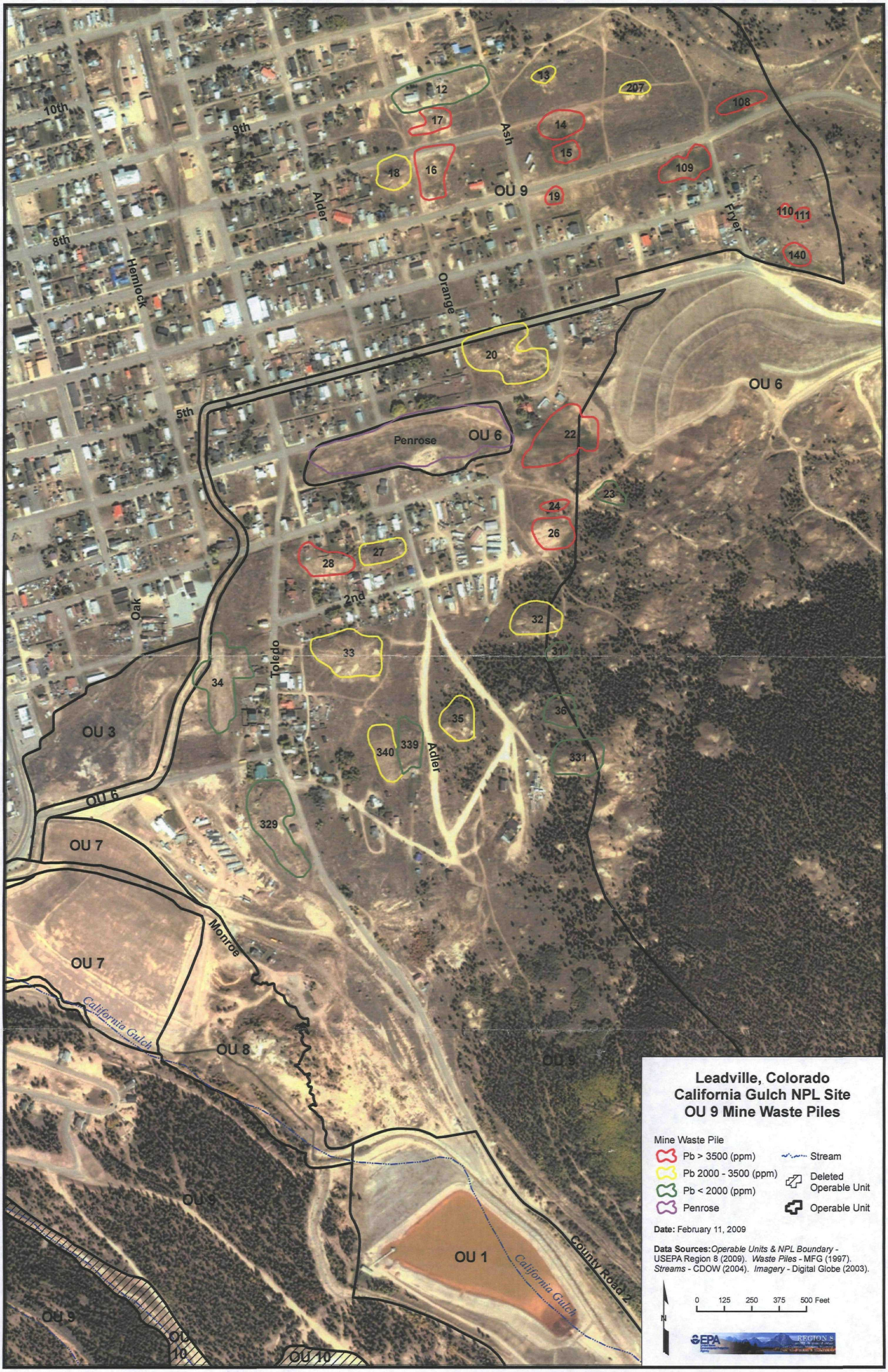
Colorado Department of Public Health and Environment

9/24/2009
Date


10th
9th
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Alder
Ash
Orange
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Penrose
OU 6
OU 9
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207
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111
140
20
22
23
24
26
27
28
2nd
32
31
33
34
Toledo
OU 3
35
36
340
339
331
Adler
329
OU 7
Oak
Monroe
California Gulch
OU 8
OU 1
County Road 2
OU 10
Leadville, Colorado
California Gulch NPL Site
OU 9 Mine Waste Piles
Mine Waste Pile
Pb > 3500 (ppm)
Pb 2000 - 3500 (ppm)
Pb < 2000 (ppm)
Penrose
Stream
Deleted Operable Unit
Operable Unit
Date: February 11, 2009
Data Sources: Operable Units & NPL Boundary - USEPA Region 8 (2009). Waste Piles - MFG (1997). Streams - CDOW (2004). Imagery - Digital Globe (2003).
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