

Record of Decision
Part 2 – The Decision Summary

performed using sediment from the Southern Goose Pond mine waste area were found to be acutely toxic and the third was inconclusive. Food chain modeling for fish-eating and insect-eating birds revealed hazard quotients above Site specific effect based concentrations, which suggests a significant potential for adverse impacts to these receptors. Samples collected from pore water also reveal levels of contaminants above National Recommended Water Quality Criteria for copper and zinc. Biota tissue samples obtained from fish and clams document that the contaminants of concern, particularly lead, are accumulating in the Site biota at concentrations much higher than background. Concentrations of lead in the biota found within and adjacent to Southern Good Pond mine waste area are substantially above background and higher than other areas of the Site. Figure 18 identifies the areas found to have acute toxicity and biota tissue above background.

As such, actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment. Figure 4 identifies the areas that present a threat to Human Health and the Environment that are targeted for consideration in OU1.

H. REMEDIATION OBJECTIVES

Based on preliminary information relating to the types of contaminants, environmental media of concern and potential exposure pathways, response action objectives (RAOs) were developed to aid in the development and screening of alternatives. These RAOs were developed to mitigate, restore and/or prevent existing and future potential threats to human health and the environment.

EPA develops Remedial Action Objectives (RAOs) for each cleanup action. The specific RAOs for OU1 are presented in Section 2.2 of the OU1 FS and are summarized below:

- Protect current and future recreational visitors by preventing direct contact and incidental ingestion of site soils and waste material containing PCBs that represent a non-cancer threat with a HQ greater than 1 and a cancer risk greater than 1×10^{-6} using the site-specific risk assessment assumptions for current and future recreational use.
- Protect current residents by preventing direct contact and incidental ingestion of site soils and waste material in the current Residential Use Area of the Site containing lead that would result in greater than 5 percent of the exposed population with a blood lead level above 10 ug/dl, or the Maine Solid Waste Lead Remediation Regulations, whichever is lower, using the site-specific risk assessment assumptions for current and future residential use.
- Protect current residents by preventing direct contact and incidental ingestion of site soils and waste material in the current Residential Use Area of the Site containing arsenic above background levels that represent a non-cancer threat with a HQ greater than 1 and a cancer risk greater than 1.4×10^{-5} using the site-specific risk assessment assumptions for current and future residential use.

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- Prevent exposure of biota to sediment, including the sediment/soil in the salt marsh, with concentrations of copper, lead, or zinc that may represent a threat to insectivorous and piscivorous birds, fish, and other aquatic organisms.
- Minimize acid rock drainage from mineralized waste rock and tailings that may act as a continuing source of copper, lead, and zinc to groundwater, surface water, and sediment.
- Stabilize the Tailings Impoundment berm to achieve acceptable stability criteria.
- Comply with all Federal and State ARARs, including achieving closure standards under State mining regulations.

I. DEVELOPMENT AND SCREENING OF ALTERNATIVES

1. Statutory Requirements/Response Objectives

Under its legal authorities, EPA's primary responsibility at Superfund sites is to undertake remedial actions that are protective of human health and the environment. In addition, Section 121 of CERCLA establishes several other statutory requirements and preferences, including: a requirement that EPA's remedial action, when complete, must comply with all Federal environmental and more stringent State environmental and facility siting standards, requirements, criteria or limitations, unless a waiver is invoked; a requirement that EPA select a remedial action that is cost-effective and that utilizes permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and a preference for remedies in which treatment which permanently and significantly reduces the volume, toxicity or mobility of the hazardous substances is a principal element over remedies not involving such treatment. Response alternatives were developed to be consistent with these statutory mandates.

2. Technology and Alternative Development and Screening

CERCLA and the NCP set forth the process by which remedial actions are evaluated and selected. In accordance with these requirements, a range of alternatives were developed for the Site.

With respect to the response action, the OU1 RI/FS developed a limited number of remedial alternatives that attain Site cleanup levels within different time frames using different technologies, as well as a no-action alternative.

As discussed in Section 2 of the OU1 Feasibility Study Report, technology options were identified, assessed and screened based on implementability, effectiveness and cost. The sediment screening process identified only one sediment technology as appropriate for sediment remediation. In particular, the screening confirmed that *in-situ* capping and monitored natural recovery were not suitable based on site conditions. The majority of the salt marsh and the southern Goose Pond sediment does not have a sufficient depth of water to allow a one foot cover to accumulate. A cover of that thickness could change much of the salt marsh to upland. Section 3 of the OU1 Feasibility Study Report presented the remedial alternatives, developed by combining the technologies identified in the previous screening process, that fit the alternative



**U.S. ENVIRONMENTAL PROTECTION AGENCY
EPA NEW ENGLAND**

RECORD OF DECISION

OPERABLE UNIT 1

CALLAHAN MINE SUPERFUND SITE

SEPTEMBER 2009

Callahan Mine

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