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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
IDAHO OPERATIONS OFFICE
1435 N. Orchard St.
Boise, Idaho 83706

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D.E.Q. STATE WASTE
MANAGEMENT & REMEDIATION DIVISION

ACTION MEMORANDUM

SUBJECT: Request for Approval of Time-Critical Removal Action at the Monarch Stamp Mill, Atlanta, Idaho

FROM: Greg Weigel
On-Scene Coordinator
Idaho Operations Office

THRU: Chris D. Field, Manager *Ch D Field*
Emergency Response Unit
Office of Environmental Cleanup

TO: Daniel D. Opalski, Director
Office of Environmental Cleanup

RE: SSID: 10EA

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of a proposed time-critical removal action at the Monarch Stamp Mill Site (Site), Elmore County, Atlanta, Idaho. This proposed action is to contain, consolidate and isolate exposed mine tailings with elevated concentrations of arsenic and mercury.

II. SITE CONDITIONS AND BACKGROUND

The CERCLIS ID # for this site is ID0001413723. This Action Memorandum is for a proposed time-critical removal action.

A. Site Description

1. Removal site evaluation

The U.S. Forest Service has conducted various site investigation activities at the Monarch Stamp Mill site. In January, 1996 they completed a "Subsurface Investigation Monarch Mill

Tailings Site.” The report documented mercury concentrations in tailings at the Site as high as 29,500 mg/kg. Arsenic concentrations were as high as 10,900 mg/kg. The report calculated the total volume of tailings at the site at approximately 22,500 cubic yards.

In June, 2001, the Forest Service completed a “Final Site Investigation Report for the Monarch Stamp Mill Tailings Site.” The purpose of this report was to review existing information regarding the Site and assess the need for CERCLA cleanup action. The report documented specific environmental and human health threats posed by conditions at the Site.

On May 5, 2006, the EPA OSC, along with the EPA Idaho Mine Sites Coordinator and Forest Service OSC, visited the Site to evaluate current conditions. It was observed that tailings three to five feet thick are exposed in the cut bank of the Middle Fork of the Boise River at the Site. Tailings had obviously calved off at various locations into the river, and continued to be subject to erosion and downstream migration.

3. Site characteristics

The Site is a mixed-ownership former mill site, located partially on private land and partially on National Forest System lands within the established boundaries of the Boise National Forest. Significant physical characteristics of the Site include the ruins of the former mill, the exposed tailings which cover an area approximately 550 feet by 350 feet on a flat bench area adjacent to the Middle Fork of the Boise River, and a cut bank which is formed by approximately 3 to 5 feet thick of tailings along approximately 500 feet of the South bank of the Middle Fork of the Boise River. Site access is via a private access road from the Middle Fork Road, approximately 1 mile west of the town of Atlanta. The Site is in Sections 3 and 4, Township 5 North, Range 8 East of the Boise Meridian. Elevation of the Site is approximately 5,200 feet.

4. Site history

The Site was used for milling silver and gold ore from about the 1860s intermittently through at least 1936. Ore was brought to the Site from nearby mines. Mercury was used in the milling process to amalgamate free gold from the crushed ore. Mill tailings were not contained and were allowed to flow onto the adjacent down-gradient bench area and into the Middle Fork of the Boise River.

The private portion of the Site is presently owned by Mr. Israel Ray of Caldwell, Idaho, who purchased the property within the last year from the estate of the previous owner, who died recently. Mr. Ray has not conducted any mining/milling activity at the property, nor made any significant improvements to the property during his ownership.

5. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

The contaminants of concern – arsenic and mercury - are hazardous substances as defined by sections 101(14) and 101(33) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. section 9601(14) and (33). Exposed tailings with elevated concentrations of arsenic and mercury (arsenic concentrations are as high as 10,900 mg/kg, and mercury concentrations as high as 29,500 mg/kg) form a cut bank along approximately 500 feet of the Middle Fork of the Boise River, where they are subject to erosion into the River.

6. NPL status

This is not a National Priorities List (NPL) site. The Site has not been scored for NPL inclusion. No remedial activities are in progress or anticipated at this time.

7. Maps, pictures and other graphic representations

See Figures 1 and 2 for vicinity map and site map.

B. Other Actions to Date

A site investigation was completed by the U.S. Forest Service in 2001. No cleanup activities have taken place at the Site.

C. State and Local Authorities' Roles

State or local government funding is not available for conducting this proposed removal action. This is a joint EPA/Forest Service proposed action. The U.S. Forest Service will provide funding for that portion of the work to be conducted on their administered public land, and will provide other services in support of the action, including taking the lead for Endangered Species Act consultation and development of a Biological Assessment, conducting a cultural resources survey of the site, and conducting necessary topographical and river reference section surveys for project design. Additionally, Trout Unlimited (TU), a non-governmental trout and salmon conservation organization, is interested in using their volunteer and limited financial resources to follow-up the proposed removal action with additional work to enhance riparian habitat at the Site. Such work may include the planting of willows and other riparian vegetation along the constructed river bank and flood plain.

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

Conditions at this site meet the criteria for a time-critical removal action as stated in the

National Contingency Plan (NCP), 40 CFR Section 300.415, as follows:

A. Threats to Public Health or Welfare

1. Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby populations or the food chain (300.415(b)(2)(i)). The Site is located within one mile of the town of Atlanta, Idaho (population 37 year-round; 350 seasonal) and the Forest Service Riverside Campground. No one resides at the Site. However, the Forest Service suspects that residents of Atlanta may be using the sandy tailings material from the Site for driveways and walkways, and possibly beneath playground equipment and sandboxes. Primary access to the Site is restricted via a locked gate across the access road. The Site may, however, be accessed by 4-wheel drive and ATV vehicles from the east, where there is no restriction to access or posting. Recreational visitors may occasionally visit the Site.

The U.S. Bureau of Land Management has developed screening criteria for metals in soils based on various recreational and residential use scenarios. Arsenic concentrations in all samples of tailings at the Site exceed the BLM Risk Management Criteria for residents, campers, and ATV drivers. The highest mercury concentration at the Site exceeds the BLM Risk Management Criteria for residents and campers. Additionally, arsenic concentrations at the Site exceed EPA Region 9 Preliminary Remediation Goals (PRGs) for residential soils by a factor of more than 20,000. Mercury concentrations exceed PRGs for mercury in residential soils by a factor of more than 1,000.

2. High levels of hazardous substances or pollutants in soils largely at or near the surface that may migrate(300.415(b)(2)(iv)). Arsenic concentrations at the Site are as high as 10,900 mg/kg. Mercury concentrations in tailings at the Site are as high as 29,500 mg/kg. Concentrations of mercury near the surface (1 to 6 feet) are as high as 121 mg/kg. Concentrations of arsenic near the surface (1 to 2 feet) are as high as 3,690 mg/kg. A cut bank of tailings is exposed along the Middle Fork Boise River. Tailings have at various times calved off from the bank into the River as a result of hydraulic erosion. Additionally, the fine-grained tailings material is susceptible to airborne transportation and deposition at nearby residences and the Forest Service Riverside Campground.

3. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released (300.415(b)(2)(v)). The Site is adjacent to the Middle Fork Boise River. Tailings form the south bank of the River along the Site, and extend from the normal high water mark to the top of the bank approximately 3 to 5 feet deep. Severe flooding and/or flash flooding on the River could cause substantial erosion of the tailings bank and the consequent migration of a large volume of tailings down the Middle Fork Boise River.

4. The availability of other appropriate Federal or State response mechanisms to respond to the release (300.415(b)(2)(vii)). The U.S. Forest Service is contributing 50% of the resources

to respond to this release, as approximately 50% of the tailings volume to be addressed by the proposed action exists on Forest Service administered public property. There are no other appropriate Federal or State response mechanisms that have the resources to respond to this release.

B. Threats to the Environment

1. Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby populations or the food chain (300.415(b)(2)(i)). Tailings with high concentrations of arsenic and mercury have eroded and continue to be subject to erosion into the Middle Fork Boise River. The State of Idaho has identified the Middle Fork Boise River as a Class 1 stream, indicating that it contains valuable fisheries and water quality should be protected. The Middle Fork Boise River provides a trout and whitefish sport fishery. The River is habitat for Bull Trout, a federally listed endangered species. Arsenic concentrations in sediments of the Middle Fork Boise River near the Site exceed chronic exposure criteria for aquatic life. While metals contamination in the Middle Fork Boise River likely originates from many sources in the area, the Site is an obvious contributor.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this Site may present an imminent and substantial endangerment to public health or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

The objectives of the proposed action are to: (1) Isolate and stabilize tailings that are in contact with and adjacent to the Middle Fork of the Boise River and mitigate the threat of continued erosion and off-site migration; (2) Consolidate the tailings pile and construct a permanent clean cover to mitigate the threat of direct contact by recreational users of the Site, and; (3) Re-vegetate the covered tailings pile, the river bank and other disturbed areas to minimize future wind and hydraulic erosion at the site.

It is envisioned that, upon completion of the proposed removal action, additional re-vegetation and habitat enhancement work will be performed by Trout Unlimited in the riparian zone adjacent to the Middle Fork Boise River. These tasks will be scoped separately and are not included within this Action Memo.

The overall approach for the removal action involves: (1) selective excavation of tailings along the Middle Fork Boise River to create clean buffer that is between 20 and 50 feet wide; (2) selective excavation of thin accumulations of tailings from upland areas on the perimeter of the Site to reduce the footprint of the remaining area of tailings; (3) grading and shaping the tailings area to promote runoff; (4) stabilization of the tailings as needed near the river to prevent erosion during spring high flow; (5) creation of a hydraulically stable river bank and flood plain area where tailings were removed; (6) placement of a minimum 12 inch cover of imported clean fill over the remaining tailings; (7) re-vegetation of disturbed areas

Prior to initiation of construction, storm water best management practices (BMPs) will be implemented to control delivery of sediment and other pollutants to surface waters.

Excavation activities will target removal of tailings from near the bank of the Middle Fork Boise River, and the thin veneer of tailings on the perimeter of the Site. Removal depths are anticipated to be up to 5 to 7 feet in the area near the River, and 2 to 12 inches along the perimeter of the Site. Tailings near the River will be pulled back or excavated to create a clean buffer wide enough such that spring high flows will not erode or endanger the stability of the tailings.

Excavated materials will be placed on top of remaining exposed tailings at the Site and stabilized in place. No tailings will be hauled off-site or permanently placed in areas of the Site that are clean. These actions will collectively reduce the footprint of the area where tailings are stored and to which a soil cover will be applied. The final configuration and size of the tailings repository is not known at this time but will likely cover a combination of both private and Forest Service-managed lands. The final configuration is expected to result in a net shifting of tailings volume from Forest Service-managed lands to private land.

Selective excavation will involve removal of visual tailings in upland and riparian areas down to the underlying native soil. Following removal of visual tailings, arsenic concentrations at the base of the excavation will be measured in the field using portable X-ray fluorescence (XRF) analytical techniques to verify that tailings have been removed. Samples may be collected and send to a laboratory for conventional analysis to assess the accuracy and precision of the portable XRF techniques.

Following excavation, the Site will be graded and shaped to promote natural drainage and to eliminate depressions. Excavation activities in the area facing the River may result in a steeper slope or face 5 to 7 feet high. This area may need to be stabilized to prevent erosion. Other areas of the Site where tailings remain in place will be covered with a minimum of 12 inches of growth media. Disturbed areas will be re-vegetated with an appropriate mix of native plant species that are suited to the soil conditions and climate.

Design and construction of a hydraulically stable river bank and flood plain area where tailings are excavated will be critical to long-term Site stability. Rock barbs to deflect river

energy and fabric-enclosed soil construction in approximately 1-foot lifts may be utilized, along with other engineered structural features, to develop a stable stream bank. EPA and the Forest Service intend to coordinate with Trout Unlimited (TU), so that the proposed removal action contributes to, or at a minimum does not preclude, additional habitat enhancement work that TU is considering for the Site after completion of the EPA/Forest Service proposed action.

Fill material for the cover will be obtained from a nearby colluvial borrow area to be identified by the Forest Service OSC. Fill material used for the cover will be clean (not contaminated with tailings), consist of material that is suitable for recreational use and that will support re-vegetation. The work to be performed will include development of the borrow area, and final reclamation, including re-vegetation.

2. Contribution to remedial performance

No long-term remedial actions are planned for this Site at this time. The proposed time-critical removal action is to contain, consolidate and isolate the tailings and contaminated soils on site. This is consistent with the presumptive remedy for low-level threat metals in soils (not targeted for treatment), as identified in EPA's Presumptive Remedy for Metals-in-Soil Sites document (September, 1999).

3. Description of alternative technologies

Engineering alternatives that have been considered include removing the tailings for off-site hazardous waste disposal. The volume of material involved and transportation and disposal costs make this alternative impracticable from a budgetary and financial perspective.

4. Engineering Evaluation/Cost Analysis (EE/CA)

This proposed action is for time-critical removal action, and an EE/CA therefore is not required.

5. Applicable or relevant and appropriate requirements (ARARS)

The NCP requires that removal actions attain ARARs under federal or state environmental or facility siting laws to the extent practicable, considering the exigencies of the situation. The proposed removal action will attain or exceed ARARs, to the extent practicable. Below is a summary of potential Federal and State ARARs that have been identified or otherwise considered for this project:

- a.) Federal Water Quality Standards (40 CFR Part 131). 40 CFR Parts 131.33 and 131.36 provides federally promulgated water quality standards applicable to the Middle Fork Boise River and its tributaries. The proposed removal action will help ensure that these standards are met to the greatest extent practicable.

- b.) Clean Water Act, Section 404. Under Section 404 of the Clean Water Act, any discharge of dredged or fill material to a navigable water of the United States must meet the requirements of a permit issued by the U.S. Army Corps of Engineers (USACE). Construction of the proposed removal action may involve adding fill material to the Middle Fork Boise River. Although a permit is not required under CERCLA Section 121(e), the substantive requirements of a permit would apply to the removal action. The EPA OSC will notify and coordinate with the USACE District Engineer's office.
- c.) Endangered Species Act, Section 7. The Middle Fork Boise River is habitat for Bull Trout, a federally listed endangered species. The Endangered Species Act (ESA) requires that each federal agency ensure, through consultation, that any action authorized, funded, or carried out by that agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat for endangered or threatened species. The Forest Service will take the lead in preparing a Biological Assessment and consultation with the U.S. Fish and Wildlife Service. It is expected that the Biological Assessment will conclude with a "not likely to adversely impact" determination with respect to Bull Trout. It is also expected that the Fish and Wildlife Service will concur with that determination.
- d.) National Historic Preservation Act, Section 106. The National Historic Preservation Act (NHPA) requires Federal agencies to take into account the effects of their undertakings on historic properties. The State Historic Preservation Officer (SHPO) advises and assists Federal agencies in carrying out their section 106 responsibilities and cooperates with such agencies, to ensure that historic properties are taken into consideration. Ruins at the former mill site at the Monarch Stamp Mill, including a rock wall and some old machinery, may qualify the Site for consideration under Section 106 of the NHPA. The Forest Service will take the lead in cultural resources survey of the Site and coordinating with the SHPO. It is not expected that proposed removal activities will impact any cultural resources at the Site.
- e.) Idaho Water Quality Standards (IDAPA 16.01.02). This rule designates uses which are to be protected in waters of the state and establishes standards of water quality protective of those uses. Restrictions are placed on human activities which may adversely affect water quality. State water quality standards include specific use designations for the Middle Fork Boise River. The Middle Fork Boise River is to be protected for uses including cold water biota, salmonid spawning, and primary contact recreation. It is not anticipated that the proposed removal action will negatively impact water quality, even in the short term. Coordination with Idaho Department of Environmental Quality and Department will ensure that applicable standards are met.

f.) Idaho Stream Channel Alteration Rules (IDAPA 37.03.07). These rules require that work which may alter a stream channel meet certain standards, as outlined in a permit. The standards which may be applicable to the proposed removal project include general construction procedures, use of riprap or gabions, installation of culverts and bridges, and removal of sand and gravel deposits. Coordination with the Idaho Department of Lands will ensure that these standards are properly considered.

6. Project Schedule

It is expected that the project will be started and completed in the late summer and fall of 2006. The OSC is anticipating a start date of no later than September 1, 2006, when water in the Middle Fork Boise River is at seasonal low levels, and while there is time to complete the action prior to the anticipation of significant snowfall in mid-November. Construction should take about 5 weeks.

B. Estimated Costs

The estimated EPA Extramural costs to complete the proposed project are itemized below:

<u>Extramural Contractor Costs:</u>		
Cleanup Contractor Costs (ERRS)		\$ 620,000
START Contractor Costs		\$ 80,000
Extramural Costs Contingency	(20% Contractor Costs)	\$ 140,000
 Total, Extramural Costs		 \$ 840,000
 <u>Requested Removal Project Ceiling</u>		 \$ 840,000

This proposed removal action is joint action between EPA and the U.S. Forest Service. It is estimated that 50% of the total tailings volume subject to the proposed action are on USFS administered public land, and 50% are on private land. Executive Order 12580 allows EPA to use funds from the Hazardous Substance Superfund to pay for removal actions for releases or threatened releases under the jurisdiction, custody, or control of Executive departments or agencies, such as the Forest Service, provided that such department or agency agree to reimburse the Superfund. EPA and the USFS are in the process of finalizing a Memorandum of Understanding (MOU) concerning the Monarch Stamp Mill site that provides a framework for coordination at the Site, including financial responsibilities. In accordance with the MOU, EPA will use its contractor and oversight resources for the cleanup on both private and public lands at the Site, and the USFS will provide funding to EPA in support of that portion of the work on USFS-administered land. USFS has already committed to providing \$310,000 funding directly to EPA via a Reimbursement or Advance of Funds Agreement. At the completion of the project when final costs are in, the Agreement will be amended to reflect one-half of actual final extramural costs.

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

Delayed action would result in continued potential for exposure by nearby populations and continued threat of erosion and off-Site migration of tailings to the Middle Fork Boise River.

VII. OUTSTANDING POLICY ISSUES

None

VIII. ENFORCEMENT

See attached "Confidential Enforcement Addendum" for potentially responsible party information and enforcement strategy.

IX. RECOMMENDATION

This decision document represents the selected removal action for the Monarch Stamp Mill Site, Atlanta, Idaho, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. This decision is based on the administrative record for the Site.

Conditions at this site meet the NCP section 300.415(b)(2) criteria for a removal and I recommend your approval of the proposed removal action. The total project ceiling, if approved, will be \$840,000. None of these funds are expected to come from the Region 10 Removal Advice-of-Allowance. The U.S. Forest Service will provide initial funding in the amount of \$310,000 for work to be done on USFS-administered lands. The rest of the necessary funds will come from the 106C special account established from settlement regarding action at the nearby Talache Mine. The special account money may be used for O&M at Talache Mine, or for cleanups at other sites within the Talache Mining District.

Figure 1



Final Site Investigation Report
Monarch Stamp Mill Site, Idaho

Figure 1: Monarch Mill Tailings Site near Atlanta, Idaho.

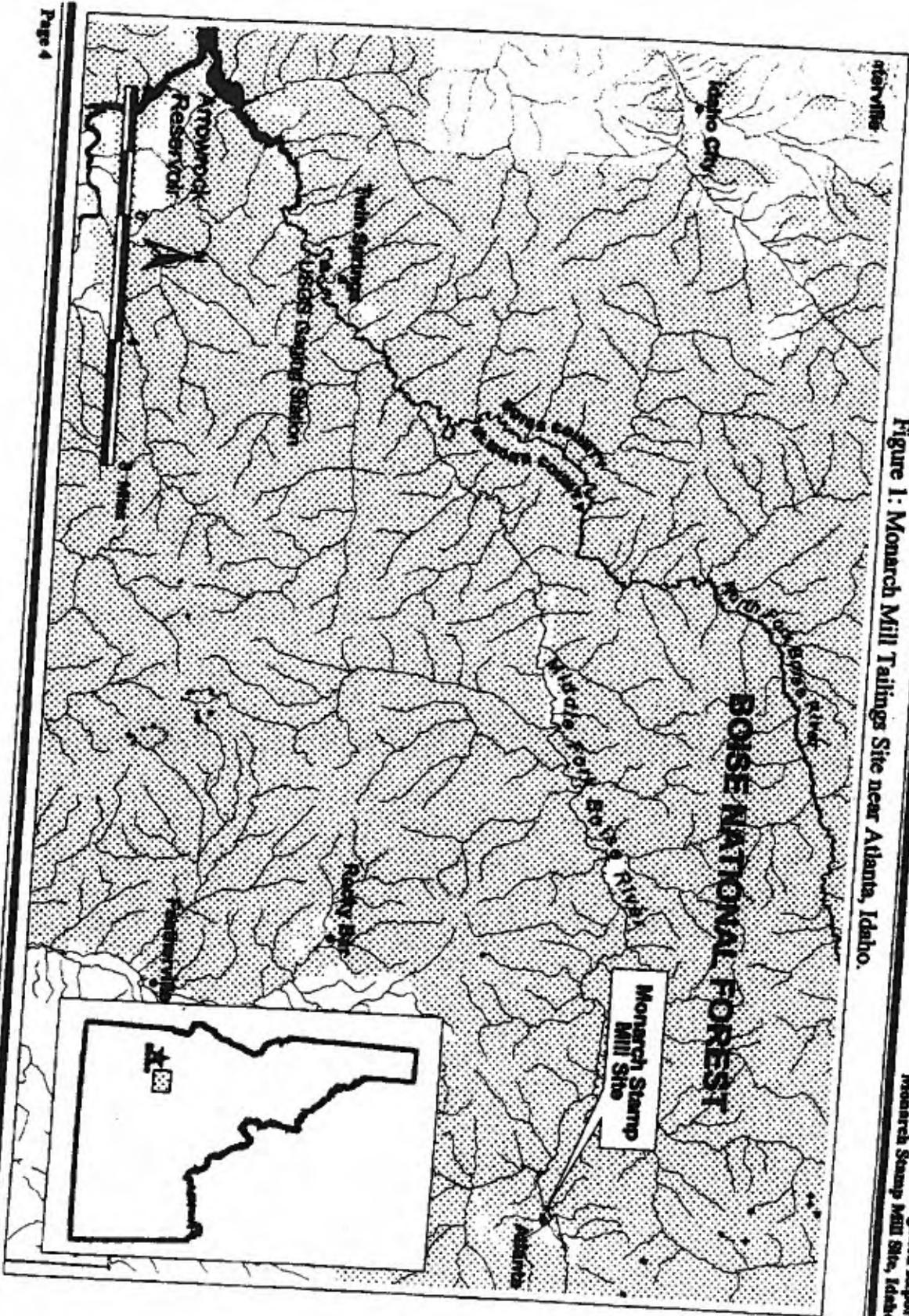
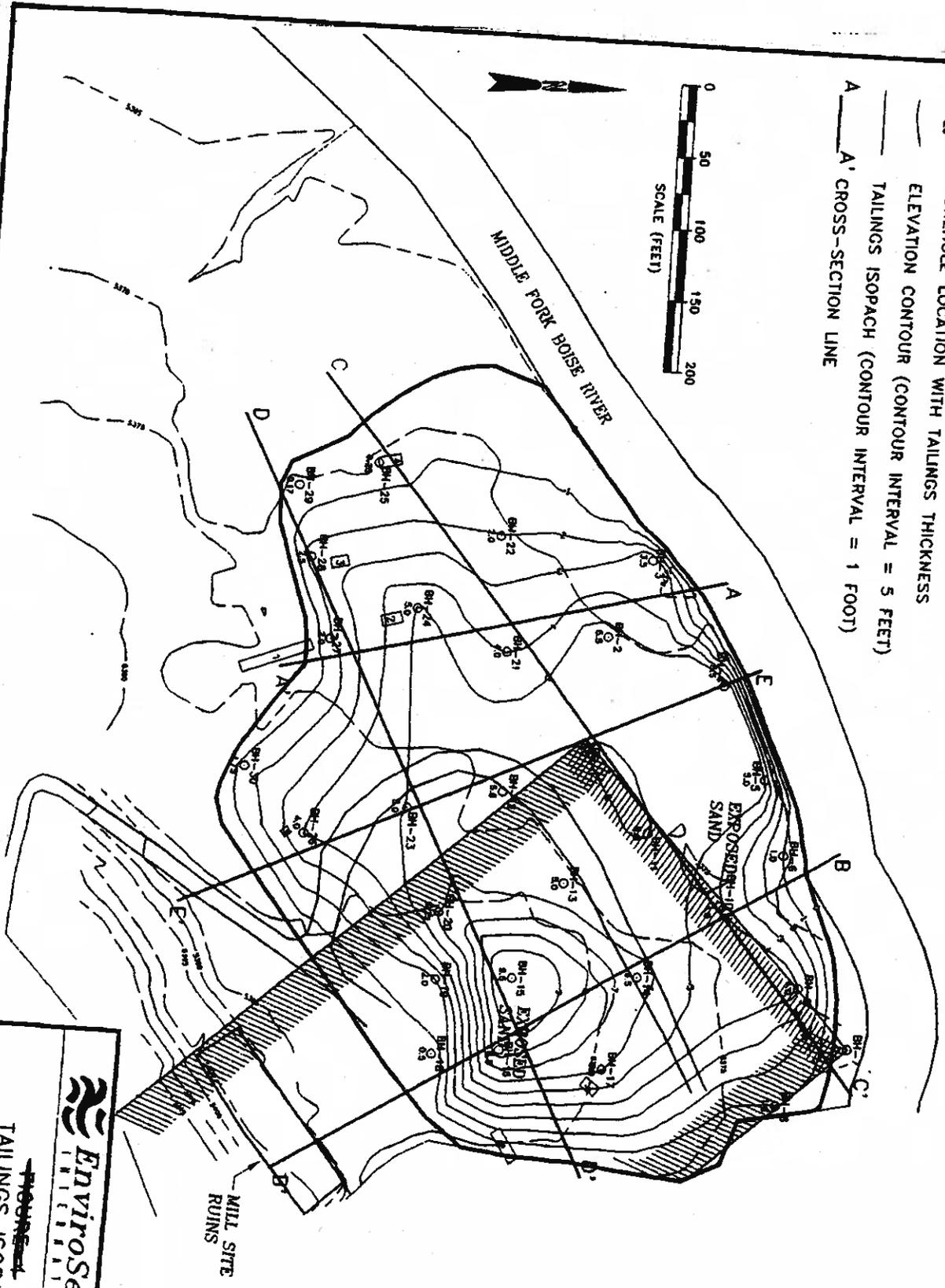


Figure 2

LEGEND

-  BOREHOLE LOCATION WITH TAILINGS THICKNESS
-  ELEVATION CONTOUR (CONTOUR INTERVAL = 5 FEET)
-  TAILINGS ISOPACH (CONTOUR INTERVAL = 1 FOOT)
-  A-A' CROSS-SECTION LINE



	
EnviroSearch	
PROJECT	
TAILINGS ISOPACH	
12/22/95	P# 1470
SA-60	

X. APPROVAL/DISAPPROVAL

APPROVAL:



Daniel D. Opalski, Director
Office of Environmental Cleanup

6/12/06

Date

DISAPPROVAL:

Daniel D. Opalski, Director
Office of Environmental Cleanup

Date