

**REMOVAL REPORT
McCRAE MINE REMOVAL ACTION
BIG CREEK, IDAHO
AUGUST-SEPTEMBER 1998**

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USDA - Forest Service
Region 4 – Payette National Forest
McCall, Idaho**

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**FINAL REPORT FOR THE
MCCRAE MINE REMOVAL
BIG CREEK, IDAHO
FS # 0412061003**

1.0 INTRODUCTION

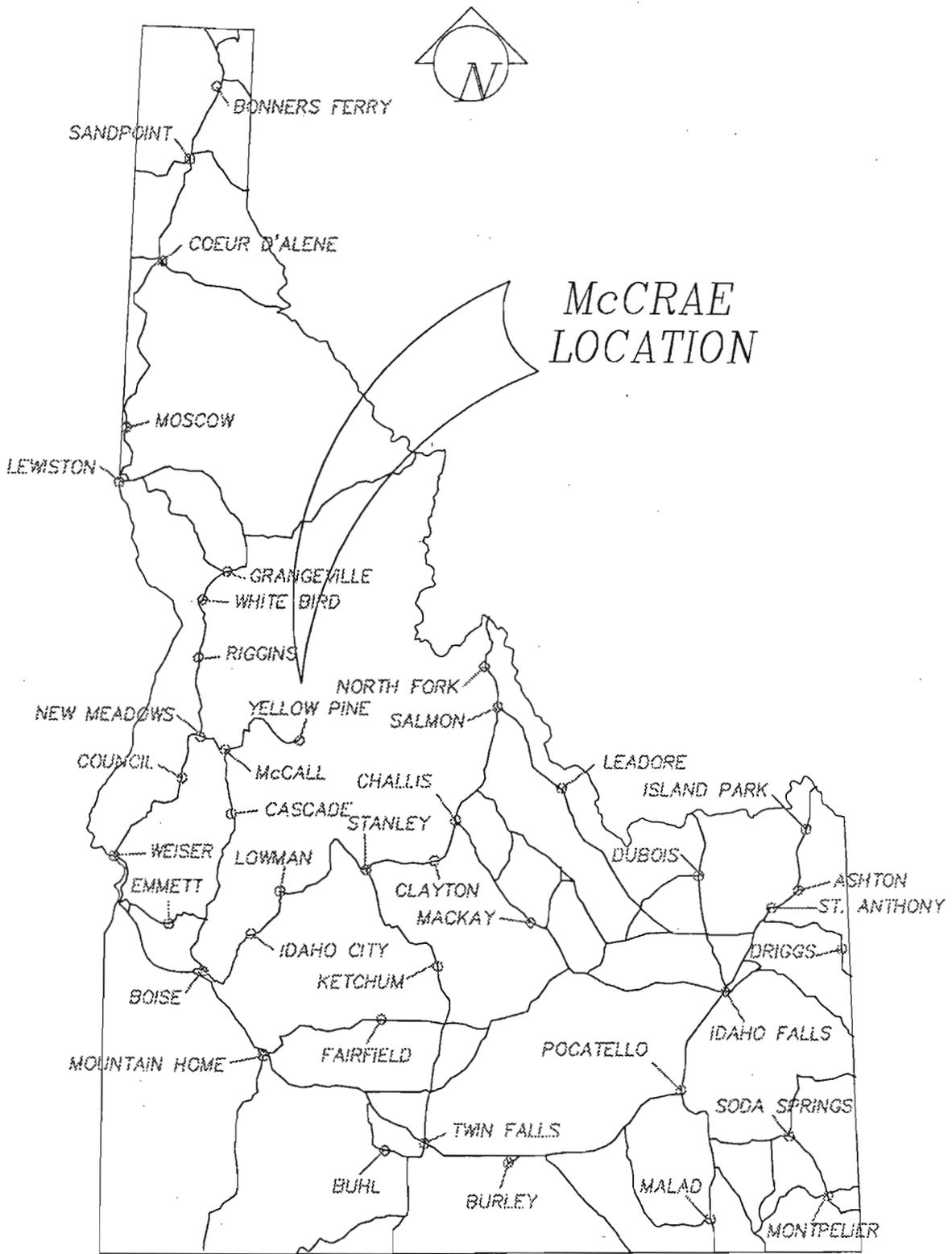
The USDA Forest Service (USFS) initiated a removal action at the McCrae Mine site, located near Big Creek, Idaho on August 24, 1998. The site is abandoned tungsten mining and milling facility that terminated operations in 1957. The removal action was initiated as result of previous investigations indicating that lead, silver, copper, barrels of unknown contents, and oil-contaminated soils were present on site. The site posed a potential threat to human health and environment exposure pathways; a removal action was necessary to address the immediate threats.

Immediate threats addressed in the removal action included: covering the exposed tailings with an engineered impervious cover, crushing all empty barrels and burial on site with at least two feet of topsoil. All barrels with substances were categorized as to type of contaminate and disposed of off site. All contaminated soils were buried and all mill site debris was covered with at least two foot of topsoil. The Removal Action was conducted from August 24, 1998 through September 9, 1998.

2.0 SITE DESCRIPTION

The McCrae Mine can be reached by driving east from McCall, Idaho on Forest Highway 48 until Yellow Pine, Idaho then 4 miles on Forest Service (FS) road 50412 and then by taking FS 50340 for about 25 miles. The term site describes the area consisting of the aggregation of sources, the area between the sources, and areas that may have been contaminated because of migration of sources. The Latitude-Longitude coordinates are lat. 45° 09' 55" and long 115° 24' 2". It is situated in the Smith Creek Drainage with the Frank Church River of No Return Wilderness (FCRNR) about 1.5 miles away. The site located in Township 21 North, Range 9 East NW section 18, Boise Meridian, Idaho County (Figure 1). The site is entirely on public lands administered by the USDA-Forest Service, Payette National Forest.

The McCrae Tungsten Corp. mined the site in 1954 through 1957. At that time it was called the New Snowbird deposit. The operation produced high-grade and low-grade huebnerite-scheelite (tungsten) concentrates. Ore was crushed to 1-inch and then ground to -20 mesh (0.833 mm) the operation was abandoned when removal of the subsidy for domestic tungsten concentrates caused the price to be halved. (USGS 1968). No other operations occurred on site, only exploratory operations around the site.



VICINITY MAP - IDAHO

FIGURE 1

3.0 ENVIRONMENTAL SETTING

The site is located in a perched confined small valley at an elevation of 2408m (7900ft.). The site can be characterized as having very harsh, long winters and cold summers.

The mill tailing impoundment is located on the site. The impoundment retains water during spring melt and runoff. The site is recharged by springs above the impoundment. This impoundment contained tailings generated by the floatation mill that are generally tan in color. The entire impoundment is about 300 feet long and 200 feet wide. Most of the tailings pile was sterile of vegetation. The tailings pile consists of an area 200 feet long and 100 feet wide and an estimated depth of three feet (2,200 c.y.). The remaining area within the impoundment is saturated with water yearlong having good vegetation growth. This vegetative cover is consistent with species found in a wetland ecosystem. Only the sterile tailings pile was capped. The remainder of the impoundment is still undisturbed.

The mill site was demolished and debris is spread out in a 20 by 30-foot area. The site contained some smelt slag of about ½ c.y, which was covered. None of the debris was sampled.

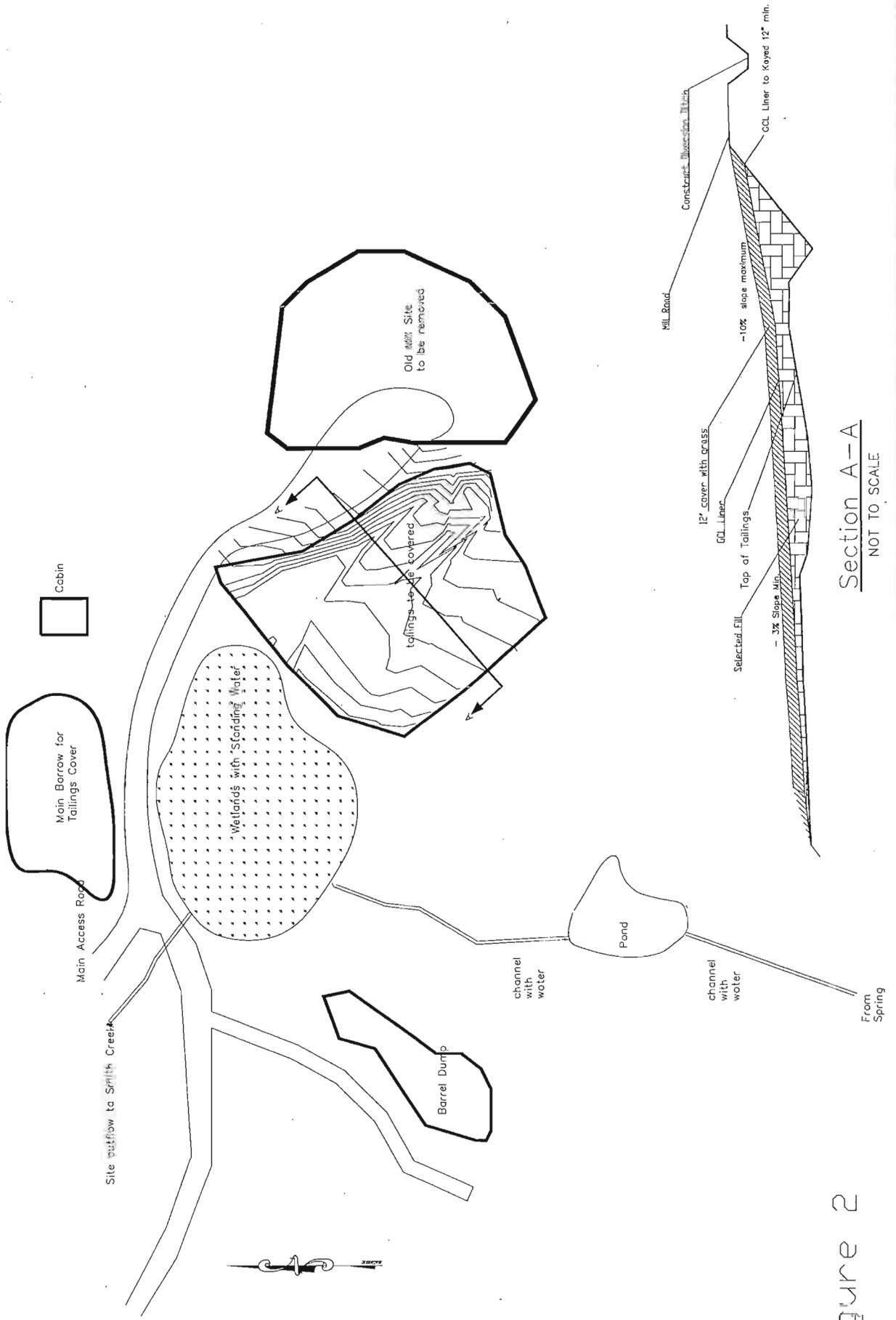
There were about 25 barrels on site and about eight contain some substances. Only one contained a petroleum substance.

4.0 PREVIOUS INVESTIGATIONS

Soil samples collected at the tailings area contain metal concentrations exceeding three times background included, Lead (147 ppm), Silver (16 ppm), and Copper (128 ppm) (Appendix D). There was a significant threat of a release of tailings to Smith Creek.

TABLE 1
Summary of sampling locations and results on site

Element	Tailings-01 (mg/kg)	Tailings-02(mg/kg)	Tailings(mg/kg)	Background(mg /kg)
Arsenic	0.38	0.80	1.01	2.24
Barium	9.18	60.5	N/A	68.6
Cadmium	0.415	0.198	0.35	0.13
Chromium	0.68	9.11	N/A	4.08
Copper	Not Analyzed	Not Analyzed	128	9.34
Lead	147	110	93.7	17.9
Mercury	<0.2	<0.2	0.0580	0.020
Selenium	0.40	0.23	<0.50	<1.0
Sliver	16.0	2.51	Not Analyzed	0.65



Section A-A
 NOT TO SCALE

Figure 2

Aquatic food chain organisms are threatened by release of metals and other contaminants from the site. Metals and unknown contaminants released from the barrels could enter the food chain by way of bottom dwelling insects, amphibians, and fish.

5.0 CURRENT REMOVAL ACTIVITIES

5.1 Objectives and Strategy

Following were the removal objectives:

- Cap the exposed tailings with an engineered impervious cover. Slope all surface water away from the exposed tailings pile area.
- Crush all empty barrels and bury on site with at least two foot of topsoil. All barrels with substances will be categorized as to type of contaminate. All contaminated soils will be removed and buried.
- All mill site debris will be covered with at least two foot of topsoil.

5.2 Chronology of Events

August 2, 1998	USDA FS issues an Action Memorandum authorizing a time-critical removal action (Appendix A).
August 24, 1998	USDA FS Payette NF men and equipment mobilize to the site to prepare for removal.
September 10, 1998	Removal Action complete and Mobilization complete

5.3 Removal Action

Equipment was mobilized to the site starting August 17, 1998. It took most of a week to get all necessary equipment to the site. The actual earthmoving activities started on August 24, 1998. The removal took about two weeks and except for a few isolated rain showers the weather was dry. The temperatures were in the 70s during the day and lows at night in the 30s. There were no unplanned problems with any of the activities. The activities were:

- 5.3.1 **Covering of Mill site:** The first task was to push all woody debris into a pile and cover with at least five-feet of topsoil. Barrels were checked to determine contents. All barrels were found to be empty of any substance. So barrels were crushed and buried in place with all other debris. Cover material was pushed from a topsoil source above this location and five-foot of cover was completed within two days. The entire disturbed area was re-vegetated (see 5.3.4).
- 5.3.2 **Unknown Barrels:** There were about 25 barrels on site. All barrels were checked for unknown liquid substances. Eight were found to have liquid. Of the eight only one had a hazardous substance. The others contained small amounts of water. The barrel with petroleum was removed from site and sent to McCall, ID for later disposal in accordance with RCRA. The barrels that contained water were poured on to the ground. Soils from this location were excavated to a depth of 12 inches and placed on tailing pile before the engineered cover (see 5.3.3) was completed. All empty barrels were crushed and buried under two feet of topsoil and area was re-vegetated (see 5.3.4).
- 5.3.3 **Covering of Tailings:** The covering of the exposed tailings started on August 26, 1998. The first task was to push soils adjacent to the tailings area. This additional fill was needed to smooth and fill the voids in order to get a gentle 3% slope prior to placing the geo-fabric. The slope would provide for flows away from the hillside and towards the natural drainage.

Next, the clay liner sandwiched between layers of eight-ounce geo-fabric was placed next on top of reformed pile. The clay liner Bentomat ST is manufactured by CETCO. The liner had a permeability of 10×10^{-9} cm/sec per ASTM 5084. The liner was in place by August 28, 1998. Once the liner was in place 12 inches of good topsoil was placed as a final cover. This final cover will function as a growing medium for the grass cover and a protective cover for the clay liner. The entire site including all borrow sites were all seeded as described in 5.3.4. All exposed topsoil was covered with wood debris to prevent erosion and to provide some organic material to aid grow of the grass seeds. The final cover will stop all surface water from entering or coming into contact with the tailings.

- 5.3.4 **Re-vegetation:** The final aspect of this project was covering all disturbed areas with grass seed, mulch, bio-sol, and wood debris to promote grass cover for next year. Mulch consisting of weed free straw and wood debris will help reduce any soil erosion until the grasses have established. The seed mixture was designed for the McCrae project. FS crew under the direction of Rob Cordtz, Payette National Forest Minerals Specialist, performed all designs and implementation. Attached in Appendix E is the McCrae Re-vegetation Plan as design by Mr. Cordtz.

6.0 PROBLEMS ENCOUNTERED

There were no unforeseen problems encountered during this project. The weather remained good throughout the project with little or no rain/snow events. The temperatures during the day were in the mid to upper 60's which made the placing of the clay liner ideal. The most difficult task was getting the equipment to the site. The equipment had to be walked about eight miles. This was accomplished without any problems

7.0 COMMUNITY RELATIONS –

There was no formal information data sheet published. The existing claimant Jack Walker was contacted prior to start of work. Also the Payette NF work crew were asked to discuss the project with the persons at Big Creek. The window to complete this task was so narrow that no formal Community Relations plan was made. This was a time-critical removal action.

8.0 SAFETY

The OSC maintained the ultimate responsibility for site safety during the removal action. Each individual was responsible for the implementation of the site-specific safety plans. A site Safety Pan was written and a pre-work safety meeting was made on August 24. Appendix B is a copy of the Health and Safety Plan.

The close proximity of heavy equipment to workers posed the most potential physical hazards. The metal debris and partially collapsed buildings presented puncture and laceration hazards.

The workers were required to remain in level D PPE as long as the tailings were exposed. Standard dust masks were used in areas where dust was encountered during excavation. At no time did tailing particles become airborne due to windy conditions. A pump was provided on site to provide water to settle dust, if needed.

There were no injuries during this removal.

9.0 COST SUMMARY

The August 3, 1998 Action Memo reported the extramural costs at \$ 82,500 and the intramural costs at \$ 10,000. The estimated overall removal project ceiling at \$ 92,500.

Following is the actual cost to perform this removal:

Agency Planning and Design:	\$ 4,909.35
Removal construction and oversight	\$ <u>30,870.06</u>
Total	\$ 35,779.41

10.0 EFFECTIVENESS OF THE REMOVAL ACTION

At the completion of the demobilization from the site on September 11, 1998 all of the removal objectives were completed. The actions were highly effective and were very low cost. The capped tailings will prevent erosion of the tailings into the surface water. The covering of the mill site and barrels will prevent any injuries to recreationalists that may visit the site in the future.

All the roads were water barred and winterized to prevent future problems with the road system into the site.

An on-site visit is planned in the summer of 1999 to evaluate the removal action effectiveness after a spring run-off season.

11.0 REFERENCES

1) U.S. geological Survey Professional Paper 594-C, Silver-rich Disseminated Sulfides From a Tungsten-bearing Quartz Lode Big Creek district Central Idaho, reported by: B.F. Leonard, Cynthia W. Mead, and Nancy Conkin, 1968

APPENDIX A
Action Memorandum



United States
Department of
Agriculture

Forest
Service

Payette NF
Supervisor
Office

P.O. Box 1026
McCall, ID. 83638
(208) 634-0700

File Code:2160/7640/7470

Date: August 3, 1998

Route To:

Subject: Time Critical Removal at McCrae Mine, Valley
County, Idaho

To: Regional Forester

RECOMMENDATION FOR AN ACTION MEMORANDUM

A release, or a significant threat of a release, has or is occurring that poses a threat to public health or welfare or the environment, on and/or from lands under the jurisdiction, custody, or control of the USDA Forest Service, Payette National Forest (National Forest System or NFS lands).

Enclosed is a proposed Action Memorandum (AM) which I recommend be executed pursuant to FSM 2160. Rather than duplicate the discussion and language found in the AM, I have added it as an attachment to this cover memo. If you have any questions, please contact Pat Trainor, Stibnite On Scene Coordinator, at (208) 634 0638.

DAVID F. ALEXANDER
Forest Supervisor

Enclosure

cc:

K.Pitt, OGC, Denver
S.Buntrock, RO ENG
Bruce Schuld, Idaho DEQ
Mark Ader, EPA, Seattle
P.Trainor, SWERL





File Code: 2160/6740/7470

Date: August 3, 1998

Route to:

TIME CRITICAL ACTION MEMORANDUM

I. PURPOSE

A release, or a significant threat of a release, has or is occurring that poses a threat to public health or welfare or the environment, on and/or from lands under the jurisdiction, custody, or control of the USDA Forest Service, Payette National Forest (National Forest System or NFS lands).

The overall site for this removal action is defined as the McCrae Mine Site (the Site) which has a tributary to the middle fork of Smith Creek.

The purpose of this Action Memorandum is to document, pursuant to the guidelines of the National Oil and Hazardous Substance Contingency Plan, (NCP) 40 C.F.R. 300, et seq. (1995), and to authorize time critical removal actions as authorized by section 104 (42 U.S.C. 9604) of the Comprehensive, Environmental, Response, Compensation, and Liability Act (CERCLA; 42 U.S.C. 9601 et seq.), to the extent they occur on National Forest System lands.

For the reasons described herein, and specifically subject to the USDA-Forest Service, I hereby authorize the below-described actions to occur on National Forest System lands.

II. SITE CONDITION AND BACKGROUND

A. Site description and background.

Mine tailings containing high levels of metals remain behind the impoundment structure at McCrae Mine. These hazardous tailings are a result of early mining activities in the Stibnite Mining District. These tailings were placed during the 1950's.

The Site is located on Public Lands administered by the USDA - Forest Service. The McCrae Mine is in T21N, R9E, Sec 18, NW1/4, NW1/4, and NE1/4. It is about 50 air miles east of McCall, ID. The site is located in a small basin at about 7900 feet elevation. Access to the mine is by a 4WD road from FS road 50340



The McRae Tungsten Corp. mined the site in 1954 through 1957. At that time it was called the New Snowbird deposit. The operation produced high-grade and low-grade huebnerite-scheelite (tungsten) concentrates. Ore was crushed to 1-inch and then ground to -20 mesh (0.833 mm). The operation was abandoned when removal of the subsidy for domestic tungsten concentrates caused the price to be halved. The operation ceased to be profitable.

The Site has a year around stream running through with a small pond near the outflow. The basin is about 15 acres. There are mining related debris scattered through the site. This debris consists of barrels, scrape metals, portions of an old mill, bottles, household waste, and remnants of wood structures. The adit appears to have collapsed. Mr. William Davis currently has a mining claim. The site and area within 2 miles has been active within the last 5-years. This recent mining activity consists of exploratory drilling by Freeport Mining Company and others during the late 1980's and very early 90's. The tailings have been observed in approximately 1.4 acres. However, The majority of the tailings are in a pile covering only 1/3 of an acre containing 2,700 c.y.

1. Removal Site Evaluation

The site primary threat is the tailing pile located in the low point of the perched mine site. The adit that is clasped has no discharge. The ponds on site are recharged by a spring which flows through the site. The stream located about 120 feet above the tailings is estimated at 30 gpm year round. There is about a ½ c.y of smelter lag located on site and about 30 empty barrels. There are about 4 barrels with product that appears to be petroleum based.

The tailings are in contact with live water and spring run off flows directly to the tailings pile. The water, once it flows through the tailing area, goes into the middle fork of Smith Creek. The site is within critical habit for Spring/Summer Chinook Salmon and Snake River Steelhead. Both are listed under the Endangered Species Act.

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

A CERCLA removal action is necessary to cover the tailings and channel the surface water away from the tailing area. If water continues to run through the tailings this would have an adverse effect by both sediment deposits and chronic health effects on aquatic wildlife in the Smith Creek.

3. NPL Status

No PA has been written. This action needs to be completed prior to any other action. The site is being evaluated for inclusion on the National Priorities List (NPL).

B. Other Actions To Date

The Forest Service has completed a potentially responsible party (PRPs) search. McRae Tungsten was dissolved as a company in Missouri in 1958. The president is over 80 years old and is not known to have assets sufficient to cover the costs of this action.

The Forest Service On Scene Coordinator, will accrue CERCLA response costs in working on this project.

C. State and Local Action Roles

1. State and Local Action to Date

The State of Idaho Department of Health has been monitoring this site. The State of Idaho Division of Environmental Quality has made some visits to the site including water quality evaluations in 1993.

The State of Idaho has taken no CERCLA response, or other cleanup, actions on the site.

2. Potential for Continued State and Local Response

There are no potential for partnerships to provide some help in the clean up of this site.

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

A. Threats to Public Health or Welfare

A significant threat to public health and welfare, through actual or potential exposure by hazardous substances to nearby populations or human food chain exists. Lead could be released into the food chain by way of bottom-dwelling insects and fish. People or other animals could in turn eat the fish. Smith Creek is fished yearly. Smith Creek flows into Big Creek which then flows into the Salmon River.

B. Threats to the Environment

A significant threat to the environment exists. Spring runoff from snow melts runs through the site each spring. The exposure by hazardous substances will have an immediate effect on the aquatic life because of the sediment deposits. It will have a chronic effect on the aquatic life because of the long-term exposure to the heavy metals. The event, if it occurs, would have an adverse effect on the Chinook salmon and Snake River Steelhead, both species listed as "threatened" according to the Endangered Species Act.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from the site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED ACTIONS

A. Proposed Action Description

Cover the existing tailing in place.

The tailings will be covered using a Geosynthetic clay liner and a minimum of 12 inches of native material. The pile will slope so that all surface water will be directed away from the tailing pile. The covering material will come from a borrow source located within the site. Some surface trenching will be done to re-directing the spring runoff water away from the pile. The covered tailings will be re-vegetated using a Bio-Sol process using a seed mixture designed for this site and trees will be planted to enhance the ecosystem.

All barrels will be crushed and removed from the site. Any smelter tailing will be placed into the tailings and will be covered as described above.

B. Contribution to Remedial Performance

All removal actions are consistent with future remedial activities to the extent practicable considering that no remedial actions have been determined.

C. EE/CA

This applies to only non-time critical responses. Conditions at this site require that time-critical removal action be taken.

D. Applicable or Relevant and Appropriate Requirements (ARAR's)

Due to the urgent nature of the CERCLA time-removal process, no State ARAR's have been identified. However, in compliance with 42 U.S.C. 9621, compliance with these ARAR's will be evaluated and achieved at the Remedial Investigation/Feasibility Study stage. Federal ARAR's, and/or other requirements, determined to be practicable for this site are the various requirements authorized by the Forest Service's Organic Act and other authorizing statutes, the Clean Water Act, the Resource Conservation and Recovery Act, the Endangered Species Act (ESA), and the National Historic Preservation Act.

The FS has entered into emergency consultation regarding this action with the National Marine Fisheries Service (NMFS) and US Fish and Wildlife Service (USFWS) under section 7 of the ESA.

E. Project Schedule

The action is scheduled for August 1998. This project should be completed by September 1998. After that time, the weather will become a factor. The removal must be accomplished this field season, as any delay would put the deteriorating tailing pile into another winter. This would subject the pile to the erosional and flooding events of spring run off.

F. Estimated Costs

Removal is to be completed by USDA Forest Service using USDA-FS equipment and personnel.

Extramural Costs (as shown on EPA AM):

1. Forest Service Costs (oversite, including USDA-OGC))	\$ 75,000
SUB-Total	\$ 75,000
Additional 10% Contingency Allowance	\$ 7,500
TOTAL	\$ 82,500

Intramural costs:

Direct costs	
FS costs(13%)	\$ 5,000
Indirect costs:	
FS costs	\$ 5,000
Subtotal costs	\$ 10,000

Total Removal Project Ceiling Estimate: \$ 92,500

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

Delayed action could result in a major release of tailing sediment with toxic levels of lead into Smith Creek within the Salmon River system. Hazardous substances would enter the food chain and possibly effect people and the Chinook salmon, and Steelhead, threatened species. A Time Critical Removal is imperative.

VII. OUTSTANDING POLICY ISSUES

Actual and administrative oversight of this removal will be accomplished by USDA Forest Service. The site is on public lands with an active mining claim subject to the 1872 mining law.

VIII. ENFORCEMENT

The Forest Service acknowledges its role as a "lead agency" as defined by 40 CFR 300.5 and pursuant to said role is undertaking this action. As a Lead Agency we are continuing with a PRP search. This action is to be performed by Forest Service.

IX. DECISION

I hereby find that a release, or a significant threat of a release, has or is occurring that poses a threat to public health or welfare or the environment, and hereby authorize the described action to occur on National Forest System lands. A true and accurate copy of this Action Memorandum will be placed in the Administrative Record, as set forth by the NCP. It may be viewed during regular business hours at the Krassel District Office, 500 N. Mission, McCall, Idaho, 83638. A formal notice of this Action Memorandum's and the Administrative Record's availability will be published in a local newspaper of general circulation within 60 days of initiation of on-site removal actions. Copies of this Action Memorandum will also be sent directly to EPA, and to the State of Idaho. I also reaffirm by designation of Pat Trainor as On-Scene Coordinator and public spokesperson for the NFS portions of the site.

RECOMMENDED: *Ralph A. Bupp* DATE: 8/3/98
for PAT TRAINOR
Stibnite On-Scene Coordinator

RECOMMENDED: *David F. Alexander* DATE: *8/3/98*
DAVID F. ALEXANDER
Forest Supervisor

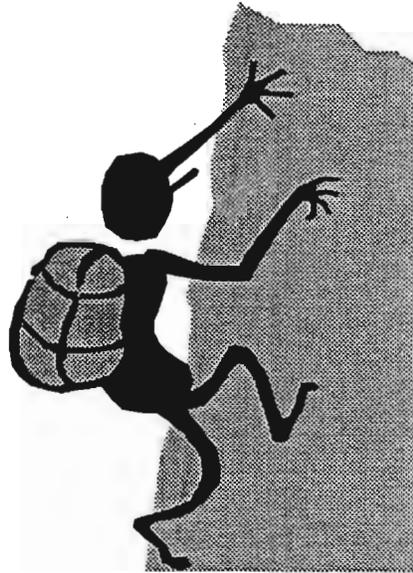
APPROVED: *Jack A. Blackwell* DATE: *8/5/98*
for JACK A. BLACKWELL
Regional Forester

APPENDIX B
Health and Safety Plan

HEALTH AND SAFETY PROJECT PLAN

McCrae Mine Site

Payette National Forest, August 1998

A handwritten signature in black ink, appearing to read 'Pat Trainor', with a long horizontal flourish extending to the right.

/S/ PAT TRAINOR

CIVIL ENGINEER - PROJECT OSC

I. ORGANIZATIONAL STRUCTURE

This section establishes the specific chain of command and specifies the overall responsibilities of supervisors and employees.

<u>Individual</u>	<u>Title</u>	<u>Responsibilities</u>
Pat Trainor	Project On-Scene Coordinator	Directs all hazardous waste operations
Rob Cordtz	Site Safety & Health Supervisor	Develops and implements the site safety & health plan and Verifies compliance
Rob Cordtz	Site Manager	Directs operations
Harley Flemmer	Operations Manager Project Equipment Supv.	Directs equipment operations Supervises, conducts equipment Operations
Others	Equipment Operator	Operates equipment; general workers

II. COMPREHENSIVE WORKPLAN

This section addresses the tasks and objectives of the site operations.

McCRAE MINE WORKPLAN

Mission - The purpose of this job is surveying the site. Survey will be both topographic and Landline types.

Tasks

- 1) Mobilize, Shape tailings, cover tailings, and remove the barrels, pile and burn wood debris.

Following is the results from the sampling to date. Sample was taken tailings pile across from the mill..

<u>Chemical</u>	<u>soil levels</u>
Lead	about 90 ppm

III. SITE-SPECIFIC SAFETY AND HEALTH PLAN

This section addresses the safety and health of each phase of site operations as required by OSHA 29 CFR 1910.120. It includes the requirements and procedures for worker protection.

A. Safety & health risk for each site task and operation in the workplan.

Task 1 – Mobilization

The health and safety comes from traveling the 5 miles of 4WD single lane road to the site. Equipment speeds must kept to 15 MPH or less. Road shall be graded prior to hauling any equipment to the site. All equipment shall equipped with radio communications. Road at the junction shall be signed to notify public of activities.

Care shall be taken around heavy equipment. All persons on the ground shall have the attention of the operator at anytime while moving around the equipment.

Safety equipment: Head protection, long sleeved shirt and pants, heavy work boots, gloves, hearing and eye protection.

Task 2 – Shaping the tailings

The health risk comes from heavy metals contained in the tailings. The exposure routes are Inhalation, Skin contact, Ingestion, Eye contact. The greatest risk is persons working adjacent to or in the tails. Periodic breaks are necessary to reduce long term exposure. When dust from the tailings is visible within the air then exposure time shall be reduced to less than 15 minutes. Work area shall be kept up wind from the operation during this task. Anyone working on site shall wash hands prior to eating or drinking. Air respiratory equipment is not need unless ground disturbing activities or winds cause the tails to become air borne. Air respiratory devices shall be available on site if needed. Water application may needed to keep tailing from becoming airborne.

Care shall be taken around heavy equipment. All persons on the ground shall have the attention of the operator at anytime while moving around the equipment.

Safety equipment: Head protection, long sleeved shirt and pants, heavy work boots, gloves, hearing and eye protection. Air respiratory if required

Task 3 – Covering the Tailings

The health risk comes from heavy metals contained in the tailings. The exposure routes are Inhalation, Skin contact, Ingestion, Eye contact. The greatest risk is persons working adjacent to or in the tails. Periodic breaks are necessary to reduce long term exposure.. When dust from the tailings is visible within the air then exposure time shall be reduced to less than 15 minutes. Work area shall be kept up wind from the operation during this task. Anyone working on site shall wash hands prior to eating or drinking. Air respiratory equipment is not need unless ground disturbing activities or winds cause the tails to become air borne. Air respiratory devices shall be available on site if needed. Tailings will be covered with a filter fabric prior to this task so tailing exposure will at a minimum. Once tailings have been completely covered then the threat from tailing exposure will be eliminated. Care shall be made in handling the liner material each roll of liner weight about 2700 lbs.

Care shall be taken around heavy equipment. All persons on the ground shall have the attention of the operator at anytime while moving around the equipment.

Task 4 – Removing Barrels

The risk comes from the unknown product. All barrels containing unknown substances shall be labeled and place separate from other barrels. Empty barrels will crushed or flattened. Care around the barrels during this

operation, as flying debris may be present. Also all persons shall stand clear of equipment. The site H&S officer will identify a safe location on the ground at the time of this task.

Task 5 – Removing Structures

Care shall be taken around heavy equipment. All persons on the ground shall have the attention of the operator at anytime while moving around the equipment. Someone shall be on the ground at all time during this task to insure no Hazardous substance are uncovered that may need special attention.

Site Safety Requirements

Because these hazardous materials are contained within the tails, no direct contact with the pure form of the chemicals will occur. Contact with contaminated dust particles that will likely be stirred up as a result of the ground disturbing or windy conditions can be minimized by following proper safety precautions. The following will be required of all workers during these phases of the project:

A morning safety meeting shall made daily and minutes shall be recorded. A more lengthily meeting shall be made prior to starting any new task.

Personal Protective Equipment:

Hard-hat, long pants, long-sleeved and collared shirt, heavy work boots, gloves, and eye protection. When the tailings are airborne then respirator (high efficiency dust & fume mask or equivalent) if needed. .

Site Control Measures:

If dust is created during excavation of mine tailings, dust abatement measures should be implemented. This will consist of applying a water spray to the affected areas prior to and during mechanical disturbance. When possible workers shall remain up wind from the tails.

Breaks - Workers will be provided with periodic rest breaks during the day.

Decontamination Procedures:

Wash - Before any food is eaten, and at the end of each work shift, wash face and hands with mild soap and water. A washing station is available at the Bassett Gulch. Showers shall be taken daily.

Change - Clothes should be changed daily and washed immediately upon return home.

Provide - Eye wash should be provided should dust cause eye irritation.

End of Project - Wash all equipment of dust before leaving site.

Medical Surveillance:

Personnel working on this project will be intermittently exposed to small amounts of toxic substances over a 2 to 3 days. If the exposure period were 30 days or longer, a medical surveillance program would be implemented to determine if any chronic levels of exposure had occurred. In this case, no surveillance program is necessary.

IV. RELATIONSHIP TO FOREST SERVICE HEALTH AND SAFETY PLAN

The McCrae Mine Project is a site-specific task with conditions requiring special consideration. All procedures in the Health and Safety Code Handbook (FSH 6709.11) will be followed as well.

V. ATTACHMENTS

Tailings sampling results - Report of Analytical Results (TCLP) for McCrae Mine Tails sampled on 9/12/95, 2 pages

Site Plan of McCrae Mine 1 page.

-HIBBS-
ANALYTICAL LABORATORIES, INC.
1804 N. 33rd Street, Boise
Boise, Idaho 83703
Phone # (208) 342-5515

LABORATORY ANALYSIS REPORT
SAMPLE NUMBER - 9520148

Attn. PAT TRAINOR/WAYNE HERSEL

P.O.# R4-12-126

PAYETTE NATIONAL FOREST
498 MISSION ST.
PO BOX 1026
MCCALL, ID 83638

Time of Collection: 12:30
Date of Collection: 09/12/95

Date Received: 09/13/95
Date Reported: 10/11/95

Submitted by:

Source of Sample: SOIL MCRAE-01

Test Requested	FRDS #	MCL	Analysis Result Unit	MDL	Method	Date Completed	Analyst Initials
ARSENIC			0.38 mg/L	0.005	EPA 200.7	10/10/95	DDB
BARIUM			9.18 mg/kg	0.05	EPA 200.7	09/26/95	DDB
MERCURY			<0.2 mg/kg	0.0005	EPA 245.1	09/25/95	HMM
SELENIUM			0.40 mg/L	0.005	EPA 200.7	10/10/95	DDB
SILVER			16.0 mg/kg	0.005	EPA 272.1	09/26/95	CMC
CADMIUM FLAME			0.415 mg/kg	0.005	EPA 200.7	09/26/95	DDB
CHROMIUM FLAME			0.68 mg/kg	0.05	EPA 200.7	09/26/95	DDB
LEAD FLAME			147 mg/kg	0.05	EPA 200.7	09/28/95	DDB
DIGESTION					SW 846 3050	09/21/95	HMM

Michael P. ...

-HIBBS-
ANALYTICAL LABORATORIES, INC.
1804 N. 33rd Street, Boise
Boise, Idaho 83703
Phone # (208) 342-5515

LABORATORY ANALYSIS REPORT
SAMPLE NUMBER - 9520149

Attn. PAT TRAINOR/WAYNE HERSEL

P.O.# R4-12-126

PAYETTE NATIONAL FOREST
498 MISSION ST.
PO BOX 1026
MCCALL, ID 83638

Time of Collection: 14:00
Date of Collection: 09/12/95

Date Received: 09/13/95
Date Reported: 10/11/95

Submitted by:

Source of Sample: SOIL MCRAE-02

Test Requested	FRDS #	MCL	Analysis Result Unit	MDL	Method	Date Completed	Analyst Initials
ARSENIC			0.80 mg/L	0.005	EPA 200.7	10/10/95	DDB
BARIUM			60.5 mg/kg	0.05	EPA 200.7	09/26/95	DDB
MERCURY			<0.2 mg/kg	0.0005	EPA 245.1	09/25/95	HMM
SELENIUM			0.23 mg/L	0.005	EPA 200.7	10/10/95	DDB
SILVER			2.51 mg/kg	0.005	EPA 272.1	09/26/95	CMC
CADMIUM FLAME			0.198 mg/kg	0.005	EPA 200.7	09/26/95	DDB
CHROMIUM FLAME			9.11 mg/kg	0.05	EPA 200.7	09/26/95	DDB
LEAD FLAME			110 mg/kg	0.05	EPA 200.7	09/28/95	DDB
DIGESTION					SW 846 3050	09/21/95	HMM

Wayne Hersel

ANALYTICAL LABORATORIES, INC.

1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

**LABORATORY ANALYSIS REPORT
SAMPLE NUMBER - 9722334**

Attn. WAYNE HERSEL

P.O.# R4-12-126

PAYETTE NATIONAL FOREST
498 MISSION ST
PO BOX 1026
MCCALL, ID 83638

Time of Collection: 11:00
Date of Collection: 09/10/97

Date Received: 09/16/97
Date Reported: 10/20/97

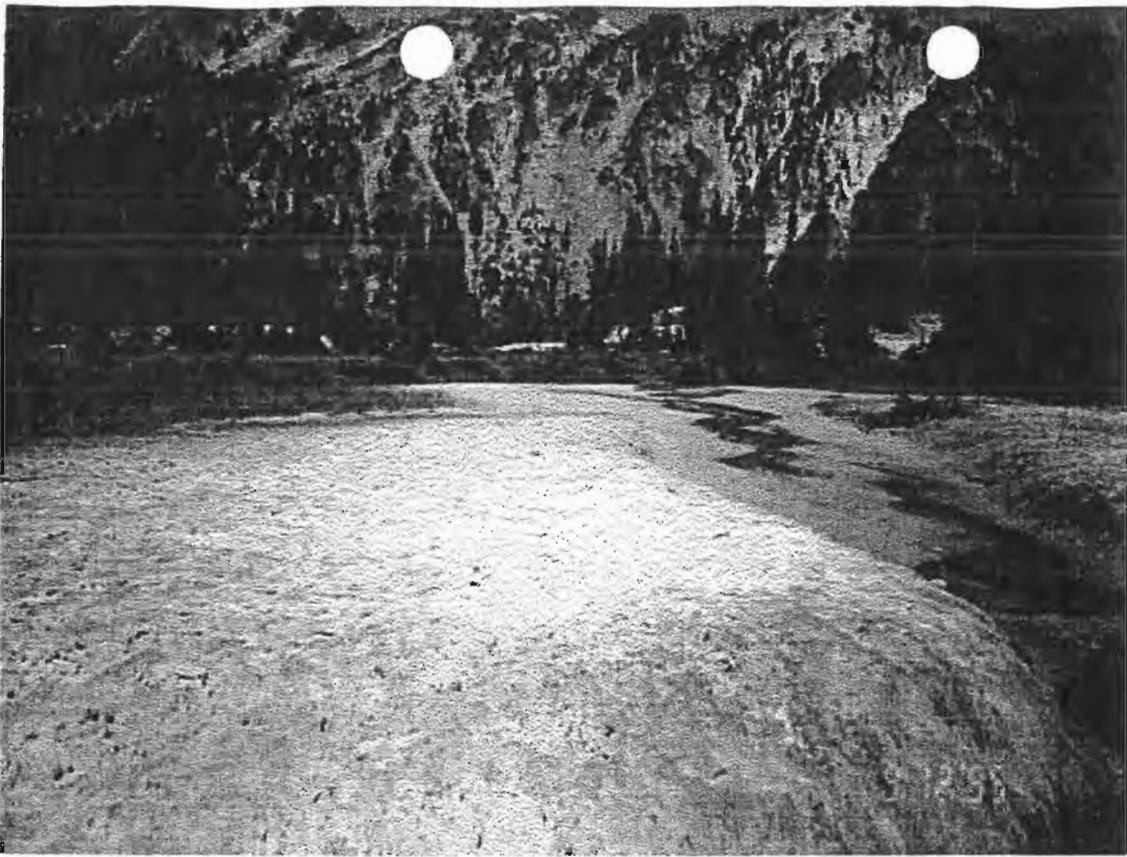
Submitted by:

Source of Sample: MCCRAE MINE

Test Requested	FRDS #	MCL	Analysis Result Unit	MDL	Method	Date Completed	Analyst Initials
ARSENIC			1.01 mg/kg	0.50	EPA 200.7	10/08/97	JH
CADMIUM FLAME			0.35 mg/kg	0.025	EPA 200.7	10/03/97	JH
COPPER ✓			128 mg/kg	0.05	EPA 200.7	10/17/97	JH
DIGESTION			*		SW 840 3050	09/19/97	KDT
LEAD FLAME ✓			93.7 mg/kg	2.5	EPA 200.7	10/03/97	JH
MERCURY			0.0580 mg/kg	0.0005	EPA 245.1	10/03/97	SWS
SELENIUM			<0.50 mg/kg	0.50	EPA 200.7	10/08/97	JH



APPENDIX C
Photo Documentation



Tailings as they existed in 1995.



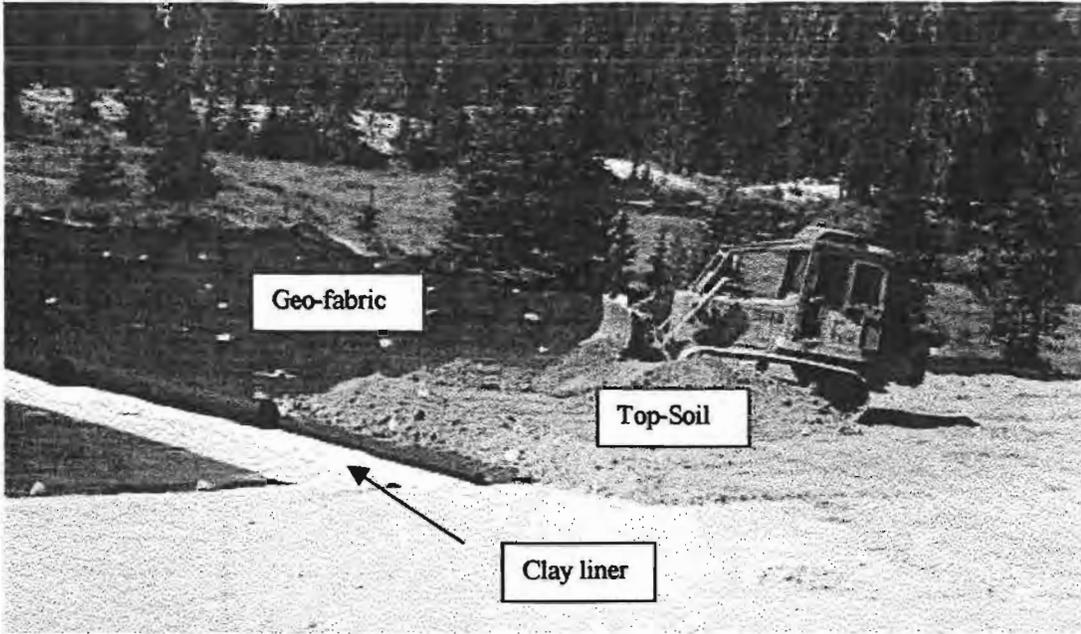
Mill Debris



Unknown barrels prior to crushing and removal



Tailings with geo-fabric and liner shown. Last 2 foot of covers being placed



Cap placement at the tailing pile



Cap placement at the tailing pile



Finished Mill and tailings



Finished Taings Pile

APPENDIX D
Sampling Summary

-HIBBS-
ANALYTICAL LABORATORIES, INC.
 1804 N. 33rd Street, Boise
 Boise, Idaho 83703
 Phone # (208) 342-5515

LABORATORY ANALYSIS REPORT
 SAMPLE NUMBER - 9520149

Attn. PAT TRAINOR/WAYNE HERSEL

P.O.# R4-12-126

PAYETTE NATIONAL FOREST
 498 MISSION ST.
 PO BOX 1026
 MCCALL, ID 83638

Time of Collection: 14:00
 Date of Collection: 09/12/95

Date Received: 09/13/95
 Date Reported: 10/11/95

Submitted by:

Source of Sample: SOIL MCRAE-02

Test Requested	FRDS #	MCL	Analysis Result Unit	MDL	Method	Date Completed	Analyst Initials
ARSENIC			0.80 mg/L	0.005	EPA 200.7	10/10/95	DDB
BARIUM			60.5 mg/kg	0.05	EPA 200.7	09/26/95	DDB
MERCURY			<0.2 mg/kg	0.0005	EPA 245.1	09/25/95	HMM
SELENIUM			0.23 mg/L	0.005	EPA 200.7	10/10/95	DDB
SILVER ✓			2.51 mg/kg	0.005	EPA 272.1	09/26/95	CMC
CADMIUM FLAME			0.198 mg/kg	0.005	EPA 200.7	09/26/95	DDB
CHROMIUM FLAME			9.11 mg/kg	0.05	EPA 200.7	09/26/95	DDB
LEAD FLAME ✓			110 mg/kg	0.05	EPA 200.7	09/28/95	DDB
DIGESTION			*		SW 846 3050	09/21/95	HMM

9/22/95

-HIBBS-

ANALYTICAL LABORATORIES, INC.

1804 N. 33rd Street, Boise
Boise, Idaho 83703
Phone # (208) 342-5515

LABORATORY ANALYSIS REPORT
SAMPLE NUMBER - 9520148

Attn. PAT TRAINOR/WAYNE HERSEL

P.O.# R4-12-126

PAYETTE NATIONAL FOREST
498 MISSION ST.
PO BOX 1026
MCCALL, ID 83638

Time of Collection: 12:30
Date of Collection: 09/12/95

Date Received: 09/13/95
Date Reported: 10/11/95

Submitted by:

Source of Sample: SOIL MCRAE-01

Test Requested	FRDS #	MCL	Analysis Result Unit	MDL	Method	Date Completed	Analyst Initials
ARSENIC			0.38 mg/L	0.005	EPA 200.7	10/10/95	DDB
BARIUM			9.18 mg/kg	0.05	EPA 200.7	09/26/95	DDB
MERCURY			<0.2 mg/kg	0.0005	EPA 245.1	09/25/95	HMM
SELENIUM			0.40 mg/L	0.005	EPA 200.7	10/10/95	DDB
SILVER ✓			16.0 mg/kg	0.005	EPA 272.1	09/26/95	CMC
CADMIUM FLAME			0.415 mg/kg	0.005	EPA 200.7	09/26/95	DDB
CHROMIUM FLAME			0.68 mg/kg	0.05	EPA 200.7	09/26/95	DDB
LEAD FLAME ✓			147 mg/kg	0.05	EPA 200.7	09/28/95	DDB
DIGESTION			*		SW 846 3050	09/21/95	HMM

Michael A. Trainor

ANALYTICAL LABORATORIES, INC.

1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

LABORATORY ANALYSIS REPORT
SAMPLE NUMBER - 9722334

Attn. WAYNE HERSEL

P.O.# R4-12-126

PAYETTE NATIONAL FOREST
498 MISSION ST
PO BOX 1026
MCCALL, ID 83638

Time of Collection: 11:00
Date of Collection: 09/10/97

Date Received: 09/16/97
Date Reported: 10/20/97

Submitted by:

Source of Sample: MCCRAE MINE

Test Requested	FRDS #	MCL	Analysis Result Unit	MDL	Method	Date Completed	Analyst Initials
ARSENIC			1.01 mg/kg	0.50	EPA 200.7	10/08/97	JH
CADMIUM FLAME			0.35 mg/kg	0.025	EPA 200.7	10/03/97	JH
COPPER ✓			128 mg/kg	0.05	EPA 200.7	10/17/97	JH
DIGESTION			*		SW 840 3050	09/19/97	KDT
LEAD FLAME ✓			93.7 mg/kg	2.5	EPA 200.7	10/03/97	JH
MERCURY			0.0580 mg/kg	0.0005	EPA 245.1	10/03/97	SWS
SELENIUM			<0.50 mg/kg	0.50	EPA 200.7	10/08/97	JH



ANALYTICAL LABORATORIES, INC.

1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

LABORATORY ANALYSIS REPORT
SAMPLE NUMBER - 9822289

Attn. WAYNE HERSEL

P.O.# R4-12-126

PAYETTE NATIONAL FOREST
498 MISSION ST
PO BOX 1026
MCCALL, ID 83638

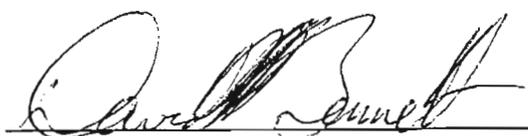
Time of Collection: 12:00
Date of Collection: 09/01/98

Date Received: 09/03/98
Date Reported: 09/16/98

Submitted by: PAT TRAINOR

Source of Sample: MCCRAE-03 (BACKWOOD)

Test Requested	FRDS #	MCL	Analysis Result Unit	MDL	Method	Date Completed	Analyst Initials
ARSENIC			2.24 mg/kg	1.0	EPA 200.7	09/12/98	JH
BARIUM			68.6 mg/kg	0.5	EPA 200.7	09/15/98	JH
CADMIUM FLAME			0.13 mg/kg	0.05	EPA 200.7	09/10/98	JH
CHROMIUM FLAME			4.08 mg/kg	0.50	EPA 200.7	09/10/98	JH
COPPER			9.34 mg/kg	0.01	EPA 200.7	09/11/98	JH
DIGESTION			*		EPA 3050	09/08/98	LB
LEAD FLAME			17.9 mg/kg	0.50	EPA 200.7	09/10/98	JH
MERCURY			0.020 mg/kg	0.020	EPA 245.1	09/15/98	DMB
SELENIUM			<1.0 mg/kg	1.0	EPA 200.7	09/12/98	JH
SILVER			0.65 mg/kg	0.05	EPA 272.1	09/15/98	JH



APPENDIX E
Re-vegetation Plan

APPENDIX E
Re-vegetation Plan

MCCRAE MINE REVEGETATION PLAN
1998

Revegetation will be again after final landform shaping is completed and mill tailing are capped with growth medium.

Woody debris (3+ inch) will be applied to the disturbed areas to create micro sites and help disperse over land flows. Woody debris will be applied at 10-15 tons/ acre. Woody debris will be gathered from the surrounding area. The trees can be loaded into dump trucks and hauled to the work site and spread randomly in such a way as not to channel water down slopes. Final placement can be with a small trackhoe with a thumb.

ALL DISTURBED AREAS: 2.8 acres

A weed free native seed mix will be broadcast at 31 lbs./acre over all disturbed areas. This will be followed by an application of fertilizer and mulch.

PRODUCT	LBS. PER ACRE	COST PER ACRE	PROJECT TOTAL LBS.	PROJECT TOTAL COST
Bio-sol	1800 mine site, 800 road	\$666	3240	\$1458
Weed free straw	2000	\$140	5600	\$420
Native seed	31	\$80	87	\$224
TOTAL		\$1126		\$2102

Because of the limited size of this site planting of woody plants will not be necessary.

ACCESS ROAD CLOSURE

As final water management on the way out of the site at the end of the project, the access road to the mine which connects road # 344 will be recontoured, woody debris applied, seeded, fertilized and mulched with weed free straw. This road covers an area of 1.8 acres.

(OR)

WATER MANAGEMENT

Water bars will be installed and fords improved as final water management on the way out of the site at the end of the project.