UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE REGION 6
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY

IN THE MATTER OF:	)	Ecology Docket # 8656
	)	
HOLDEN MINE SITE	)	
	)	
	)	
Intalco Aluminum Corporation	)	Forest Service Docket
(Successor to Alumet Corporation)	)	No. 06-97-01
	)	
RESPONDENT	)	2011 AMENDMENT
	)	Effective Date: July 8, 2011

The Parties to the attached Administrative Order on Consent/Agreed Order for Remedial Investigation/Feasibility Study and 2010 Amendment ("Order") (Attachment 1) hereby agree to amend that Order as follows:

Amend Section IV (Statement of Purpose and Agency Roles) to add the following paragraph after Paragraph 7A:

> "7B. This 2011 Amendment provides the following as an additional objective of the Parties:
>
> > Early construction work to be performed for work elements which are common to each of the alternatives under consideration in the Addendum to the Supplemental Feasibility Study (except for the No Action Alternative).
>
> This early construction work is being performed to ensure continued progress at the Holden Mine Site during 2011. The performance of early construction work does not predispose the Agencies or Intalco to a particular remedial action prior to completion of the Record of Decision. Such performance does not preclude the Agencies from selecting any remedial actions; nor does it preclude the Agencies from requiring additional construction work for the selected remedial action."

Amend Section VIII (Work to Be Performed) to add the following paragraphs after Paragraph 33C:

> "33D. Intalco shall submit plans for the construction activities described in the attached Action Memorandum for a Time-Critical Removal Action (Attachment 2) and implement the construction activities provided for in those plans, as approved by the Agencies.

33E. Intalco shall submit plans for and implement any additional construction activities, consistent with Paragraph 7B, as agreed by Intalco and the Agencies.

Amend Section XX (Reimbursement of Consent Order Response Costs) to add the following paragraph after Paragraph 73A:

"73B. Work required under this Consent Order also includes the construction activities (including the plans) described in Attachment 2 and Paragraphs 33D and 33E. Intalco shall reimburse the Agencies for the Agencies' response costs (as defined in Paragraph 73) for the activities described in Paragraphs 33D and 33E, including costs incurred before the effective date of this Amendment.

The effective date of this Amendment shall be the date it is signed by the last of the Parties.

It is so ORDERED and Agreed.

By: Claire Lavendel Date: 7/8/11
Claire Lavendel
Forest Service Region 6
Director, Recreation, Lands, and Minerals

By:_____ Date:_____
Daniel D. Opalski
EPA Region 10
Director, Office of Environmental Cleanup

By:_____ Date:_____
Jeff Newschwander
Washington Department of
Ecology
Acting Section Manager, Toxics Cleanup Program
Central Regional Office

Agreed

By: _____ Date:_____
Name:_____
Intalco Aluminum Corporation
Title:_____

33E. Intalco shall submit plans for and implement any additional construction activities, consistent with Paragraph 7B, as agreed by Intalco and the Agencies.

Amend Section XX (Reimbursement of Consent Order Response Costs) to add the following paragraph after Paragraph 73A:

"73B. Work required under this Consent Order also includes the construction activities (including the plans) described in Attachment 2 and Paragraphs 33D and 33E. Intalco shall reimburse the Agencies for the Agencies' response costs (as defined in Paragraph 73) for the activities described in Paragraphs 33D and 33E, including costs incurred before the effective date of this Amendment.

The effective date of this Amendment shall be the date it is signed by the last of the Parties.

It is so ORDERED and Agreed.

By:_____ Date:_____
Claire Lavendel
Forest Service Region 6
Director, Recreation, Lands, and Minerals

By:_____ Date: 6/14/11
Daniel D. Opalski
EPA Region 10
Director, Office of Environmental Cleanup

By:_____ Date:_____
Jeff Newschwander
Washington Department of
Ecology
Acting Section Manager, Toxics Cleanup Program
Central Regional Office

Agreed

By: _____ Date:_____
Name:_____
Intalco Aluminum Corporation
Title:_____

33E. Intalco shall submit plans for and implement any additional construction activities, consistent with Paragraph 7B, as agreed by Intalco and the Agencies.

Amend Section XX (Reimbursement of Consent Order Response Costs) to add the following paragraph after Paragraph 73A:

"73B. Work required under this Consent Order also includes the construction activities (including the plans) described in Attachment 2 and Paragraphs 33D and 33E. Intalco shall reimburse the Agencies for the Agencies' response costs (as defined in Paragraph 73) for the activities described in Paragraphs 33D and 33E, including costs incurred before the effective date of this Amendment.

The effective date of this Amendment shall be the date it is signed by the last of the Parties.

It is so ORDERED and Agreed.

By:_____ Date:_____
Claire Lavendel
Forest Service Region 6
Director, Recreation, Lands, and Minerals

By:_____ Date:_____
Daniel D. Opalski
EPA Region 10
Director, Office of Environmental Cleanup

By: Valerie Bound Date: 6-27-11
~~Jeff Newschwander~~ VALERIE BOUND
Washington Department of
Ecology
~~Acting~~ Section Manager, Toxics Cleanup Program
Central Regional Office

Agreed

By:_____ Date:_____
Name:_____
Intalco Aluminum Corporation
Title:_____

33E. Intalco shall submit plans for and implement any additional construction activities, consistent with Paragraph 7B, as agreed by Intalco and the Agencies.

Amend Section XX (Reimbursement of Consent Order Response Costs) to add the following paragraph after Paragraph 73A:

"73B. Work required under this Consent Order also includes the construction activities (including the plans) described in Attachment 2 and Paragraphs 33D and 33E. Intalco shall reimburse the Agencies for the Agencies' response costs (as defined in Paragraph 73) for the activities described in Paragraphs 33D and 33E, including costs incurred before the effective date of this Amendment.

The effective date of this Amendment shall be the date it is signed by the last of the Parties.

It is so ORDERED and Agreed.

By:_____ Date:_____
Claire Lavendel
Forest Service Region 6
Director, Recreation, Lands, and Minerals

By:_____ Date:_____
Daniel D. Opalski
EPA Region 10
Director, Office of Environmental Cleanup

By:_____ Date:_____
Jeff Newschwander
Washington Department of
Ecology
Acting Section Manager, Toxics Cleanup Program
Central Regional Office

Agreed

By: Lonnie F. Nicol Date: 6/20/2011
Name: LONNIE F. NICOL
Intalco Aluminum Corporation
Title: VICE PRESIDENT

UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE REGION 6
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY

IN THE MATTER OF:	)	
	)	
HOLDEN MINE SITE	)	
	)	
	)	
Intalco Aluminum Corporation	)	Forest Service Docket
(Successor to Alumet Corporation)	)	No. 06-97-01
	)	
	)	
RESPONDENT	)	2010 AMENDMENT
	)	TO ADMINISTRATIVE ORDER ON
	)	CONSENT/AGREED ORDER

Effective Date: October 29, 2010

The Parties to the attached Administrative Order on Consent/Agreed Order for Remedial Investigation/Feasibility Study ("Order") hereby agree to amend that Order as follows:

Amend Section IV (Statement of Purpose and Agency Roles) to add the following paragraph after Paragraph 7:

> "7A. This 2010 Amendment provides the following as an additional objective of the Parties:
>
> > Investigation, monitoring and design work, including early design work to be performed for work elements which are common to each of the alternatives under consideration in the Addendum to the Supplemental Feasibility Study (except for the No Action Alternative), as agreed upon by Intalco and the Agencies.
>
> This investigation, monitoring and design work, as agreed by Intalco and the Agencies, is being performed to make continued progress at the Holden Mine Site during 2010 and 2011. The performance of early design work does not predispose the Agencies or Intalco to a particular remedial action prior to completion of the Record of Decision. Such performance does not preclude the Agencies from selecting any remedial actions; nor does it preclude the Agencies from requiring additional investigation, monitoring, and design work for the selected remedial action."

Amend Section VIII (Work to Be Performed) to add the following paragraphs after Paragraph 33:

"33A. Intalco shall submit the following deliverables, consistent with Paragraph 7A, and implement the investigation, monitoring and early design activities provided for in those deliverables, as approved by the Agencies:

a. Final Baseline Characterization and Monitoring Plan, which Intalco submitted on September 7, 2010, but as of September 10, 2010, had not yet received Agency review, comment, modification, or approval. If Agency review requires Intalco to revise this Plan, Intalco will do so within 15 days after receipt of Agency comments.

b. Draft Work Plan for In-Mine Bulkhead Installation in the 1500 Level Main Portal and Investigation/Evaluation/Repair and Installation of Bulkhead in the 1500 Ventilator Portal by March 31, 2011, and final of this Plan within 15 days after receipt of Agency comments on the draft.

c. Draft Work Plan for Rock Quarry and Borrow Source Investigations by October 31, 2010, and final of this Plan within 15 days after receipt of Agency comments on the draft.

d. Any additional deliverable for the investigation, monitoring, or early design work, consistent with Paragraph 7A, as agreed by Intalco and the Agencies.

33B. Following the Agencies' Issuance of a Record of Decision for the Holden Mine Site, Intalco shall conduct any additional design work, consistent with Paragraph 7A, as may be agreed upon by Intalco and the Agencies."

33C. If, during Intalco's performance of the agreed additional work described in Paragraphs 33A and 33B, Intalco determines that a schedule modification is appropriate, Intalco will request, in writing, approval from the RPM of the need for such modification. If the RPM approves the request, the schedule shall be adjusted, as appropriate.

Amend Section XX (Reimbursement of Consent Order Response Costs) to add the following paragraph after Paragraph 73:

"73A. Work required under this Consent Order also includes the investigation, monitoring, and design activities (including the deliverables described in Paragraphs 33A and 33B, above. Intalco shall reimburse the Agencies for the Agencies' response costs (as defined in Paragraph 73) for the Agencies' oversight of the Intalco activities described in Paragraphs 33A and 33B, including costs for oversight of the preparation of

the deliverables described in Paragraph 33A above that were incurred before the effective date of this Amendment.

The effective date of this Amendment shall be the date it is signed by the last of the Parties.

It is so ORDERED and Agreed.

By: _____ Date: 10/29/10
Claire Lavendel
Forest Service Region 6
Director, Recreation, Lands, and Minerals

By: _____ Date: 9/24/10
Daniel D. Opalski
EPA Region 10
Director, Office of Environmental Cleanup

By: _____ Date: 10-5-10
Valerie Bound
Washington Department of
Ecology
Section Manager, Toxics Cleanup Program
Central Regional Office

Agreed

By: _____ Date: 9/23/2010
Name: Lonnie F. Nigl
Intalco Aluminum Corporation
Title: Vice President

United States Department of Agriculture | Forest Service | Okanogan-Wenatchee National Forests | 215 Melody Lane
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File Code: 2160/2800 **Date:** June 10, 2011

To: Jose Linares, Director of Engineering
USDA Forest Service, Pacific Northwest Region

Daniel Opalski, Director
Office of Environmental Cleanup, Region 10,
US Environmental Protection Agency

Subject: Request for a Time-Critical Removal Action at the Holden Mine Site, Chelan Ranger District, Okanogan-Wenatchee National Forests

Site ID # 101Y; CERCLA Site # WA9 122307 672

From: Norman F. Day, Remedial Project Manager
USDA Forest Service

David Einan
US Environmental Protection Agency

I. PURPOSE

The purpose of this Action Memorandum is to document approval for a Time-Critical Removal Action (TCRA), which is necessary to facilitate timely future implementation of the anticipated remedial action for the Holden Mine Site (Site). The remote Site has numerous constraints on work such as access and seasonal limitations. Due to these constraints, the USDA Forest Service (Forest Service) and the US Environmental Protection Agency (EPA) must immediately authorize a variety of infrastructure and ground-disturbing preparatory activities (early actions) for the 2011 field season, or delay the remedial action that is needed to protect human health and the environment. A lack of substantial progress with preparatory activities during the 2011 field season could delay the remedial action two or more years due, in part, to the need to provide commitments to contractors well in advance of the work. The major components of the remedial action are currently planned for 2013-2014.

Specifically, the early actions to be conducted under this removal action include the following tasks:

1. Timber removal.
2. Modify the uplake port at Lucerne.
3. Relocate the Holden Village potable water line to allow access for subsequent remediation work.

4. Modify USFS Road 8301 (Holden-Lucerne Road), including a potential upgrade or temporary reinforcement of the Tenmile Creek bridge.
5. Build a construction bypass road and associated temporary bridge around Holden Village.
6. Clean up debris from around the Site.
7. Install bulkheads in the 1500 Level Main and Ventilator portals.
8. Construct a new maintenance shop for Holden Village; the existing one will need to be demolished to allow access for subsequent remediation work.
9. Construct staging areas including laydown, stockpile, and storage areas, office trailers, water load-out stations, equipment maintenance facilities, and fueling facilities.
10. Excavate or cover soil in the Lagoon area and potentially in the Lower West Area-East to prepare these areas for contractor staging.
11. Excavate a limited amount of impacted soil in the Ballfield Area so the Holden Village wood yard can be moved there.
12. Excavate or cover impacted soil in the Surface Water Retention Area.
13. Develop borrow sources to provide materials needed for the 2011 Early Works.

The Forest Service and EPA are issuing this Action Memorandum for a TCRA under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, 42 U.S.C. § 9601 et seq., and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) 40 C.F.R. Part 300. This TCRA is being completed in accordance with CERCLA, [42 U.S.C. § 9604(a)(1)] and the NCP, 40 C.F.R. § 300.415. Subsequent to the TCRA, the selected remedial action will be implemented to fully address the risks posed by the Site in accordance with the forthcoming Record of Decision (ROD). This action meets the criteria for initiating a removal action under the NCP, 40 C.F.R. § 300.415, as discussed in Section III, below.

In addition, the Washington State Department of Ecology (Ecology) is independently exercising cleanup jurisdiction under Washington's Model Toxics Control Act (MTCA), Chapter 70.105D RCW. For Ecology's purposes only, this TCRA also serves as an interim action under the MTCA, WAC 173-340-430.

The Agencies anticipate the TCRA will be conducted by Intalco, a potentially responsible party (PRP) in accordance with CERCLA.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

1. Removal Site Evaluation

Site characterization information, data, and regulatory and technical analyses were presented in the Remedial Investigation and Feasibility Study (RI/FS). The Remedial Investigation (RI) for the Holden Mine was presented in the following documents:

- Dames & Moore 1999. Draft Final Remedial Investigation Report, Holden Mine Site. Prepared for Alumet Inc. by Dames & Moore. Seattle, Washington. July 28, 1999.
- Forest Service 2002. Letter from Norman F. Day to Dave Jackson, Finalization of the Holden Mine Remedial Investigation Report. February 8, 2002.

The Feasibility Study (FS) for the Holden Mine consisted of the following documents:

- URS 2004. Draft Final Feasibility Study. February 19, 2004.
- URS 2005. Alternative 9 Description and Focused CERCLA-MTCA Feasibility Evaluation, Holden Mine Site, Chelan County, Washington. November 18, 2005.
- Forest Service 2007a. Agencies' Comments on the Draft Final Feasibility Study. August 31, 2007.
- Forest Service 2007b. Agencies' Comments on Intalco's Alternative 9 Description. August 31, 2007.
- Forest Service 2007c. Supplemental Feasibility Study. September 2007.
- ERM and URS 2009. Draft Alternative 13M Evaluation Report. August 14, 2009.
- Forest Service 2010a. Agencies' Comments on Intalco's August 14, 2009, Alternative 13M Evaluation Report and Related Documents. June 1, 2010.
- Forest Service 2010b. Addendum to the Supplemental Feasibility Study, Holden Mine, Chelan County, Washington. June 2010.

2. Physical Location

Holden Mine is an inactive underground copper mine located in the Cascade Mountain Range in the Wenatchee National Forest in north-central Washington State. The mine was developed south of, and adjacent to, Railroad Creek, approximately 11 miles upstream from the creek's outlet at Lake Chelan near the Lucerne Dock. A narrow gravel road provides access to the mine from Lucerne. Lucerne is reached by commercial ferry and barge from the town of Chelan, as well as a dock at Field's Point Landing on the southwest side of the lake, and by chartered floatplane.

3. Site Characteristics

During its productive life, the Holden Mine was one of the largest underground copper mines in the United States, employing approximately 450 workers until operations were discontinued in 1957. The underground mine is on the south side of the Railroad Creek drainage between 3,200 and 4,200 feet above mean sea level (MSL). Remaining mine features include the remnants of the mill, three tailings piles, two primary waste rock piles, tunnel and adit portals, and incidental remnants. Most of the aboveground features including the tailings piles, waste rock piles, and main portal (the 1500 Portal) are between 3,200 and 3,450 feet MSL. Tailings Piles TP-1, TP-2, and TP-3 cover a total of approximately 90 acres. The two primary waste rock piles are located next to the mill site, one just east and one just west, and five additional, smaller waste rock piles are situated within the area known as Honeymoon Heights. The main features of the Site are shown on Figure 1 (attached).

Directly across the valley from the mine facilities, on the north side of Railroad Creek, are remnants of the old mining town, as well as the existing community of Holden Village. Holden Village is a community of approximately 60 year-round residents, as well as an interdenominational retreat center that receives thousands of visitors annually, primarily in the summer months.

Railroad Creek lies in a glacial valley carved into the igneous and metamorphic bedrock. Groundwater is present in the glacial sediment and alluvium, and to a limited extent, in the mine tailings. Groundwater is present in bedrock fractures, some of which drain into the mine workings. Water from the mine drains primarily from the 1500 Portal and discharges to Railroad Creek near the west end of the Lower West Area; a lesser flow also drains from various seeps throughout the Site.

The Glacier Peak Wilderness generally surrounds the Site on three sides, as shown on the attached Figure 2.

4. Release or Threatened Release Hazardous Substances into the Environment

The former Holden Mine is the source of an ongoing release of hazardous substances, as defined by Section 101(14) of CERCLA [42 U.S.C. § 9601(14)], to groundwater, surface water, and soil that has adversely impacted terrestrial and aquatic receptor, and is a risk to human health.

- Groundwater exceeds regulatory levels for drinking water or levels that are protective of aquatic organisms in Railroad Creek (into which groundwater eventually discharges) for aluminum, cadmium, copper, iron, lead, and/or zinc at a number of locations at the Site, most notably from the Main Portal and in seeps and monitoring wells at Tailings Piles TP-1, TP-2, and TP-3, the East and West Waste Rock Piles, the Honeymoon Heights Waste Rock Piles, and the Lower West Area.

- Surface water in Railroad Creek has been impacted by groundwater discharge (including groundwater from the Main Portal and seeps) and contact with tailings. Groundwater draining from the Main Portal discharges into Railroad Creek and contains concentrations of hazardous substances that exceed state and federal chronic toxicity water quality criteria for the protection of aquatic life. Water quality at sampling stations extending from the mine downstream to the mouth of the creek at Lake Chelan has exceeded state and federal regulatory levels intended to protect aquatic life for aluminum, cadmium, copper, iron, lead, and/or zinc. Surface water in the Copper Creek Diversion (the tailrace channel from the Holden Village hydroelectric plant that discharges to Railroad Creek) has also exceeded regulatory levels for cadmium, copper, and zinc.

- Soil at the Site has been impacted by releases from past mining activities and contains concentrations of hazardous substances that exceed regulatory levels for the protection of human health or the environment. The primary constituents of concern are metals or metal-like substances such as aluminum, arsenic, cadmium, copper,

and lead. Soil in the Lagoon and Maintenance Yard has also been impacted by petroleum hydrocarbons such as gasoline, diesel fuel, or heavy oils.

5. NPL Status

Holden Mine is not listed on the NPL.

6. Maps and Other Graphic Representations

This Action Memorandum includes maps and graphic representations presented as three figures as described herein. Figure 1 is a site map that illustrates Principal Components of the Proposed Remedy. Figure 2 shows the local land use, based on the Northwest Forest Plan Allocations. Additional maps and figures are contained in the Draft 2011 Early Works Implementation Plan that is available as described in Part II, Section B.2.

B. Other Actions to Date

1. Previous Actions

From 1989 to 1991, the Forest Service implemented an interim action to stabilize the tailings piles against wind erosion and to increase resistance to stream erosion. Intalco secured the mine entries and fenced the abandoned mill building to prevent trespass in 2000. In 2003, 2004, and 2006, Intalco implemented additional time-critical stabilization measures under CERCLA (with Agency oversight) to control erosion and repair flood damage to the tailings piles.

2. Current Actions

A summary of proposed construction activities covered by this TCRA is provided in Part V, Section A. (Proposed Actions) of this Action Memorandum. Details of the proposed construction activity authorized by this TCRA memo are provided in the accompanying document titled Draft 2011 Early Works Implementation Plan, Holden Mine. The accompanying document, which includes 443 pages of text, calculations, and engineering drawings are available for download from the following FTP site:

ftp://ftp.hartcrowser.com/

User Name = holden_agency

Password = tcra

C. State and Local Authorities' Role

1. State and Local Actions To-Date

Ecology has participated with the Forest Service and EPA (collectively referred to as the Agencies) in overseeing completion of the RI/FS and Proposed Plan for remedial action. The remedial action Record of Decision (ROD) is pending. The Confederated Tribes and Bands of the Yakama Nation have and will continue to consult on remedy selection and implementation. The public, including local government entities, have had the opportunity to review and comment on the Proposed Plan, which will lead to the Selected Remedy that this TCRA supports.

2. Potential for Continued State and Local Response

Ecology will continue to work with the other Agencies to provide oversight of the Selected Remedy. Local and Tribal entities are also being consulted on implementation of the remedy, particularly where remedial actions are taken under CERCLA that would otherwise be subject to local government permits.

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

Conditions at the Holden Mine Site represent a threat to public health or welfare or the environment and meet the following criteria which are justifications for a removal action, as stated in the NCP, 40 C.F.R., Section 300.415(b)(2):

- *Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;*
  - Hazardous substances in groundwater, surface water seeps, and the mine portal drainage are released into Railroad Creek at concentrations that are toxic to aquatic life. These hazardous substances include arsenic, cadmium, copper, lead, and zinc and compounds of iron and aluminum. These releases have reduced populations of fish and aquatic macroinvertebrates in the creek downstream of the mine.
- *Actual or potential contamination of drinking water supplies or sensitive ecosystems;*
  - Hazardous substances in groundwater exceed drinking water standards. Hazardous substances in groundwater, surface water seeps, and the mine portal drainage are released into Railroad Creek at concentrations that are toxic to aquatic life. These hazardous substances include arsenic, cadmium, copper, lead, and zinc and compounds of iron and aluminum. These releases have reduced populations of fish and aquatic macroinvertebrates in the creek downstream of the mine.
- *High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate;*
  - Elevated hazardous substance concentrations from mining activities and past releases of petroleum products have contaminated soil in portions of the Site. These hazardous substances may migrate through surface runoff and stream erosion of material from unstable slopes or through leaching.

- *Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released*
  - A large snowpack and significant rainfall results in increased leaching of hazardous substances in the spring, as well as contributing to the risks of erosion described above, which has occurred in 3 of the last 8 years.

IV. ENDANGERMENT DETERMINATION

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

V. PROPOSED ACTIONS AND ESTIMATED COSTS

As outlined in the Proposed Plan (Forest Service 2010c), the proposed remedial action includes collecting water discharging from the mine portal and containing and collecting groundwater impacted by the mine, tailings, and waste rock. A groundwater barrier and collection system, downslope from the former mining area and adjacent to Railroad Creek, would reduce the amount of contaminated surface water and groundwater that would otherwise enter Railroad Creek. These waters would then be treated to remove hazardous substances.

The proposed remedial action also includes excavating and disposing of soil that exceeds proposed cleanup levels. Tailings located adjacent to Railroad Creek would be regraded and moved back from the creek (and/or the creek will be relocated) and the foundations of the piles stabilized to reduce the risk of erosion or an earthquake releasing these tailings into the creek. The tailings and waste rock piles would be capped to protect terrestrial organisms and to reduce impacts to groundwater and surface water.

The work to implement the proposed remedial actions cannot be completed in the two-year time frame (2013 and 2014) unless certain early work activities are completed in 2011. The resulting delay could be two years, or more. The ongoing contamination to surface water and groundwater would continue unabated for the duration of that delay. The potential consequences of the delay would extend the risk of a catastrophic failure of the tailings piles, and the resulting damage to the Railroad Creek aquatic environment. To avoid these adverse consequences, these early work activities are recommended for approval as Time-Critical Removal Actions, as discussed below.

A. Proposed Actions

1. Proposed Action Description

The Proposed Action is generally described below. The specific activities are detailed in PRP-submitted plans and specifications that are subject to final approval by the Forest Service on-scene coordinator (OSC) and remedial project manager (RPM). The plans are currently in draft form.

- Remove Timber
  - Remove and stockpile timber and other woody material in areas designated in an approved Timbering Plan, and according to Forest Service established protocols for clearing and disposition of cleared materials. Anticipated locations where timbering activities will be completed are indicated on the design drawings included in the Draft 2011 Early Works Implementation Plan that is available as described in Part II, Section B.2.
- Modify Uplake Port (Lucerne Dock and Barge Ramp)
  - Current barge and dock facilities in Lucerne are too small to adequately provide transportation support for the remediation efforts. Existing barge ramps are primitive, consisting of gravel placed on the natural shoreline, and are unusable during low water level periods.
  - Upgrade the barge and dock facilities to provide year-round access and to safely load/unload heavy equipment and construction supplies. In addition, establish staging areas to stockpile material that is being loaded and unloaded.
- Relocate Holden Village Potable Water Line to allow access for subsequent remediation work
  - Relocate the Holden Village potable water line from its current location beneath the Mill Building. Demolition of the structure and regrading of the adjacent waste rock piles would cut the water line. Relocate the existing potable water purification system.
- Modify USFS Road 8301 (Holden-Lucerne Road)
  - Forest Service Road 8301 is the only access to the Site. The road is also used by residents and visitors to Holden Village and Forest Service personnel. During implementation of the remedial action, the road will also have to accommodate heavy construction equipment and supply vehicles. The road is approximately 12 miles long, starting from the existing dock facility in Lucerne and terminating at the Ballfield Area west of Holden Village.
  - Install turnouts and safety barriers. During road improvements, any mine wastes that may be encountered will be isolated and consolidated on the tailings piles for subsequent capping.
  - Resurface the road in locations where needed.
  - Improve the existing bridges at several stream crossings; including a potential upgrade or temporary reinforcement of the Tenmile Creek bridge.
- Construct Holden Village Bypass Road and Temporary Bridge
  - Construct a bypass road to allow construction traffic to access to the main Site areas without passing through Holden Village, which represents a significant safety concern.
  - Install a temporary bridge across Railroad Creek just downstream of the tailings piles. The temporary bridge may be modified or a second temporary stream crossing may be used, depending on flow conditions during construction.
- Clean up and Dispose of Site-Wide Debris (as necessary)
  - A significant amount of debris exists at the Site and/or will be generated as part of other cleanup related work. This debris will interfere with anticipated remedial action work.

- Clean up and dispose of this debris in accordance with an approved solid waste management plan.

- Install Bulkheads in the 1500 Level Main and 1500 Level Ventilator Portals
  - The proposed remedial action contemplates installing bulkheads to better control the flow of impacted mine water from the 1500 Level Main Portal. Installation of the bulkheads is needed now to support design of the water treatment facility. (The presence of the bulkheads may change the chemical composition of the adit water and, thus, change the appropriate treatment for that water.)
  - Improve the access road to the portal.
  - Remove the collapsed soil and rock in the tunnel.
  - Install the bulkhead in the Ventilator Portal.
- Construct a new Holden Village Maintenance Shop
  - The existing Holden Village Maintenance Shop is located near the Mill Building and waste rock piles and, therefore, will be demolished as part of the remedial action.
  - Construct a new Maintenance Shop in a different location. The shop is necessary to support continuing Holden Village operations.
- Construct Staging Areas; including laydown, stockpile, and storage areas, office trailers, water load out stations, equipment maintenance facilities, and fueling facilities
  - Establish several staging areas at the Site for contractor staging and material storage needed to conduct the remedial action.
- Excavate or Cover Soil in the Lagoon Area and Potentially in the Lower West Area-East
  - These areas are needed for contractor staging.
  - Cover impacted soil in these areas, and/or excavate the impacted soil and place excavated soil on top of the tailings piles for later consolidation under the remedial action. A temporary cover may be constructed as part of the TCRA. If impacted soil is covered under the TCRA, the final cover will need to meet requirements for capping contaminated soil, as determined during remedial design.
- Excavate (Limited) Impacted Soil in the Ballfield Area
  - The Holden Village wood yard needs to be relocated to the Ballfield Area because the current location will be incorporated into the remedial action work.
  - Remove an area of contaminated soil from the Ballfield Area to allow relocation of the wood yard operations. Place contaminated soil on top of the tailings piles for later consolidation under the remedial action cover.
- Excavate and/or Cover Impacted Soil in the Surface Water Retention Area
  - The Surface Water Retention Area may serve as a repository for rock and soil debris to be removed from the Ventilator tunnel.
  - Before placing any material in this area, address the impacted soil in this area in accordance with an approved plan. A temporary cover may be constructed over impacted soil as part of the TCRA. If impacted soil is covered under the TCRA, the final cover will need to meet requirements for capping contaminated soil, as determined during remedial design.
- Develop borrow sources to provide materials needed for the 2011 Early Works.
  - Borrow material is needed for common embankment, road surfacing, concrete aggregate, and other purposes to support the construction described above.
  - The TCRA will include development of one or more borrow sites in conformance with Forest Service standards and guidelines (e.g., erosion and sediment controls).

Green cleanup best management practices (BMPs) will be implemented during the cleanup activities described above, including minimizing energy consumption by using new and well-maintained equipment; minimizing generation and transport of fugitive dust; minimizing waste generation by stabilizing impacted soils in place where consistent with the final cleanup; minimizing impacts to water resources by implementation of construction stormwater and surface water BMPs; minimizing imported materials by using onsite materials consistent with the Forest Plan; and minimizing unnecessary soil and habitat disturbance.

2. Contribution to Remedial Performance

All actions covered under this TCRA are in areas that are part of the Holden Mine Site. The Holden Mine ROD is expected to be completed during or soon after the TCRA. The removal actions described above are specifically designed to hasten any of the remedial actions contemplated by the Proposed Plan for inclusion in the ROD. Thus, this TCRA will facilitate the implementation of the remedial action and allow the project to stay on schedule. This TCRA will contribute to a more efficient performance of the anticipated remedial action for the Site with respect to the affected lands addressed by this action.

Generally, the TCRA does not consider alternative technologies since the TCRA focuses on preliminary construction activities in advance of remedial action directly addressing the Site contamination. To the extent that the TCRA must directly address hazardous substances, such as in the preparation of a staging area, the contaminated material will either be stockpiled for later disposal or capped. If impacted soil is covered under the TCRA, the final cover will need to meet requirements for capping contaminated soils, as determined during remedial design.

3. Engineering Evaluation/Cost Analysis (for non-time critical actions only)

Not applicable.

4. Applicable or Relevant and Appropriate Requirements (ARARs)

An extensive evaluation of potential ARARs was presented in the Proposed Plan and associated Feasibility Study documents. Those ARARs applicable or relevant and appropriate to the TCRA are listed below.

- National Recommended Water Quality Criteria [Federal Water Pollution Control Act (Clean Water Act) 33 U.S.C. § 1314(a), Section 304(a)].

- Washington State Drinking Water Standards [RCW 119A; Chapter 246-290 WAC].

- Washington State Water Quality Standards for Surface Water [RCW 90.48; Chapter 173-201A WAC].

- Washington State Model Toxics Control Act [RCW 70.105D; Chapter 173-340 WAC].

- Washington State Solid Waste Handling Standards [RCW 70.95; Chapter 173-350 WAC].

- Federal Water Pollution Control Act--National Pollution Discharge Elimination System [Clean Water Act; 33 U.S.C. § 1342, Section 402].

- Clean Water Act (CWA), Section 401 and 404 [33 U.S.C. 1344, 40 C.F.R. Part 230, 33 C.F.R. §§ 320-330].

- National Forest Management Act [16 U.S.C. §§ 1600 – 1614] (NFMA) and Land and Resource Management Plan for Wenatchee National Forest (LRMP, Forest Service 1990), as Amended by Pacific Northwest Forest Plan (NWFP, 1994) and subsequent amendments of the NWFP (2001, 2004 and 2007).

5. Project Schedule

The TCRA activities are scheduled to begin in June 2011 and extend through the end of 2011, possibly into 2012.

B. Estimated Costs

The approximate cost for the TCRA is $10 million, as estimated by the PRP, Intalco. This TCRA is anticipated to be implemented and funded by Intalco with oversight by the Agencies.

VI. EXPECTED CHANGE SHOULD ACTION BE DELAYED OR NOT TAKEN

These early actions are essential to ensure uninterrupted progress toward Holden Mine Site remediation in 2013-2014. Absent implementation of the early actions in 2011, the remedial action may be delayed two or more years. This delay will prolong the threats to human health and the environment described above, and will extend the overall proposed timeline for the Holden Mine cleanup. In particular, as described in Section III, above:

1. Failure to take the proposed TCRA will allow surface water contamination and its adverse impact on aquatic life to continue for two or more years longer than it would if the TCRA is implemented during the 2011 field season; and

2. The significant risk of tailings pile collapse into Railroad Creek would also continue for two or more years longer than it would if the TCRA is implemented during the 2011 field season. Such a collapse would further degrade the Railroad Creek aquatic habitat and, potentially, substantially increase remedial action costs.

In addition, a delay in the project will significantly impact Holden Village, the local community that relies on its summer retreat program for its economic viability. Holden Village requires adequate advance notice to plan and mitigate the adverse impacts of two years of heavy construction associated with the remedial action. The performance of the early work does not predispose the Agencies to a particular remedial action before completion of the Record of Decision.

VII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues associated with this action.

VIII. ENFORCEMENT

In 1998, Intalco (Alumet at the time) entered into an Administrative Order on Consent (1998 AOC) with the Forest Service, EPA, and Ecology. The parties to the 1998 AOC amended it in 2010 to provide for Intalco's performance of certain additional tasks. Following approval of this Action Memorandum, the Forest Service anticipates that Intalco will implement the TCRA pursuant to a second amendment to the 1998 AOC, referred to as the 2011 Amendment, with this Action Memorandum incorporated as part of the 2011 Amendment.

IX. RECOMMENDATION

This decision document presents the selected TCRA for the Holden Mine site, Chelan County, Washington, developed in accordance with CERCLA, as amended. It is not inconsistent with the NCP. Conditions at the Holden Mine meet the NCP Section 300.415(b)(2) criteria for removal and I recommend your approval of the proposed time-critical removal action. An Administrative Record for this action will be available for public comment as required by the NCP.

RECOMMENDED: Robert J. Sheehan Date: 6/10/11
ROBERT J. SHEEHAN
District Ranger
Chelan Ranger District
Okanogan Wenatchee National Forest

RECOMMENDED: Clinton D. Kyll Date: 6/13/11
FOR REBECA L. HEATH
Forest Supervisor
Okanogan Wenatchee National Forest

APPROVED BY:
Jose L. Linares Date: 6/13/11
JOSE LINARES
Director of Engineering
Pacific Northwest Region

RECOMMENDED: Cami Grandinetti Date: 6/14/11
Cami Grandinetti
Unit Manager
Office of Environmental Cleanup, Region 10, U.S. Environmental Protection Agency

APPROVED BY:

Date: 6/14/11
Daniel D. Opalski, Director
Office of Environmental Cleanup, Region 10,
U.S. Environmental Protection Agency

Attachments

Figure 1 - Principal Components of Proposed Remedy

Figure 2 - Land Use Map, Northwest Forest Plan Allocations for Holden Mine Area

REFERENCES

Dames & Moore 1999. Draft Remedial Investigation Report, Holden Mine Site. Prepared for Alumet Inc. July 28, 1999.

ERM and URS 2009. Draft Alternative 13M Evaluation Report, Holden mine Site, Chelan County, Washington. August 14, 2009.

Forest Service 2002. Letter from Norman F. Day to Dave Jackson, Finalization of the Holden Mine Remedial Investigation Report. February 8, 2002.

Forest Service 2007a. Agencies' Comments on the Draft Final Feasibility Study. August 31, 2007.

Forest Service 2007b. Agencies' Comments on Intalco's Alternative 9 Description. August 31, 2007.

Forest Service 2007c. Supplemental Feasibility Study. September, 2007.

Forest Service 2010a. Agencies' Comments on Intalco's August 14, 2009 Alternative 13M Evaluation Report and related documents. June 1, 2010

Forest Service 2010b. Addendum to the Supplemental Feasibility Study, Holden Mine, Chelan County, Washington. June 2010.

Forest Service 2010c. Proposed Plan Holden Mine Site Chelan County, Washington. June 1, 2010 4769-15.

MWH 2011. Draft 2011 Early Works Implementation Plan, Holden Mine. April 20, 2011.

URS 2004. Draft Final Feasibility Study. February 19, 2004

URS 2005. Alternative 9 Description and Focused CERCLA-MTCA Feasibility Evaluation, Holden Mine Site, Chelan County, WA. November 18, 2005.

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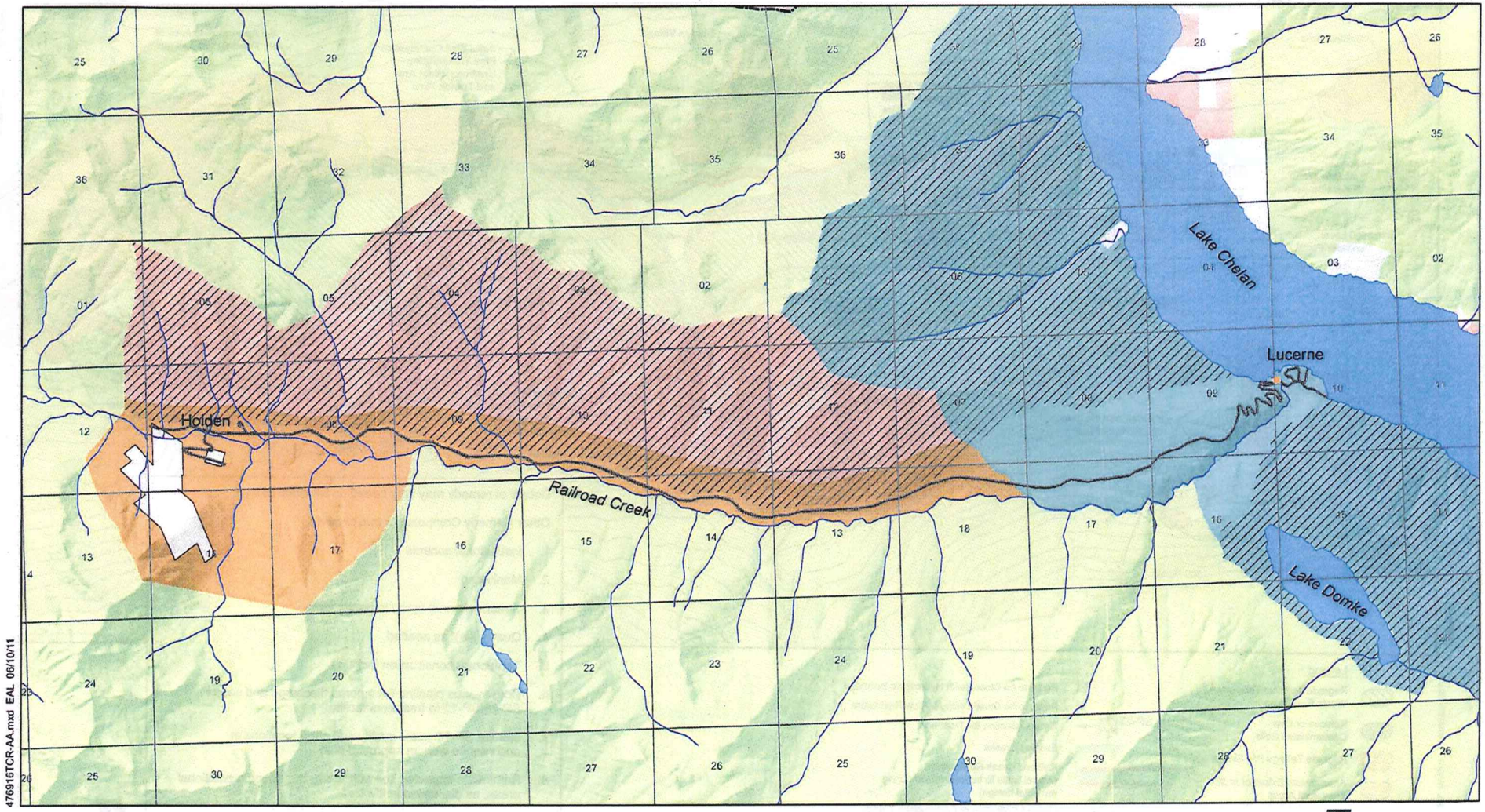
Land Use Map

Northwest Forest Plan Allocations for Holden Mine Area



Administratively Withdrawn

Congressionally Withdrawn (Glacier Peak Wilderness Area)

Late Successional Reserve (LSR)

Matrix

Private and Other (Including Patented Mining Claims)

Roadless Area

Note: Matrix area includes other areas administratively withdrawn from mineral entry.

0 0.75 1.5

Scale in Miles

N

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Figure 2

Time-Critical Removal Action Memo

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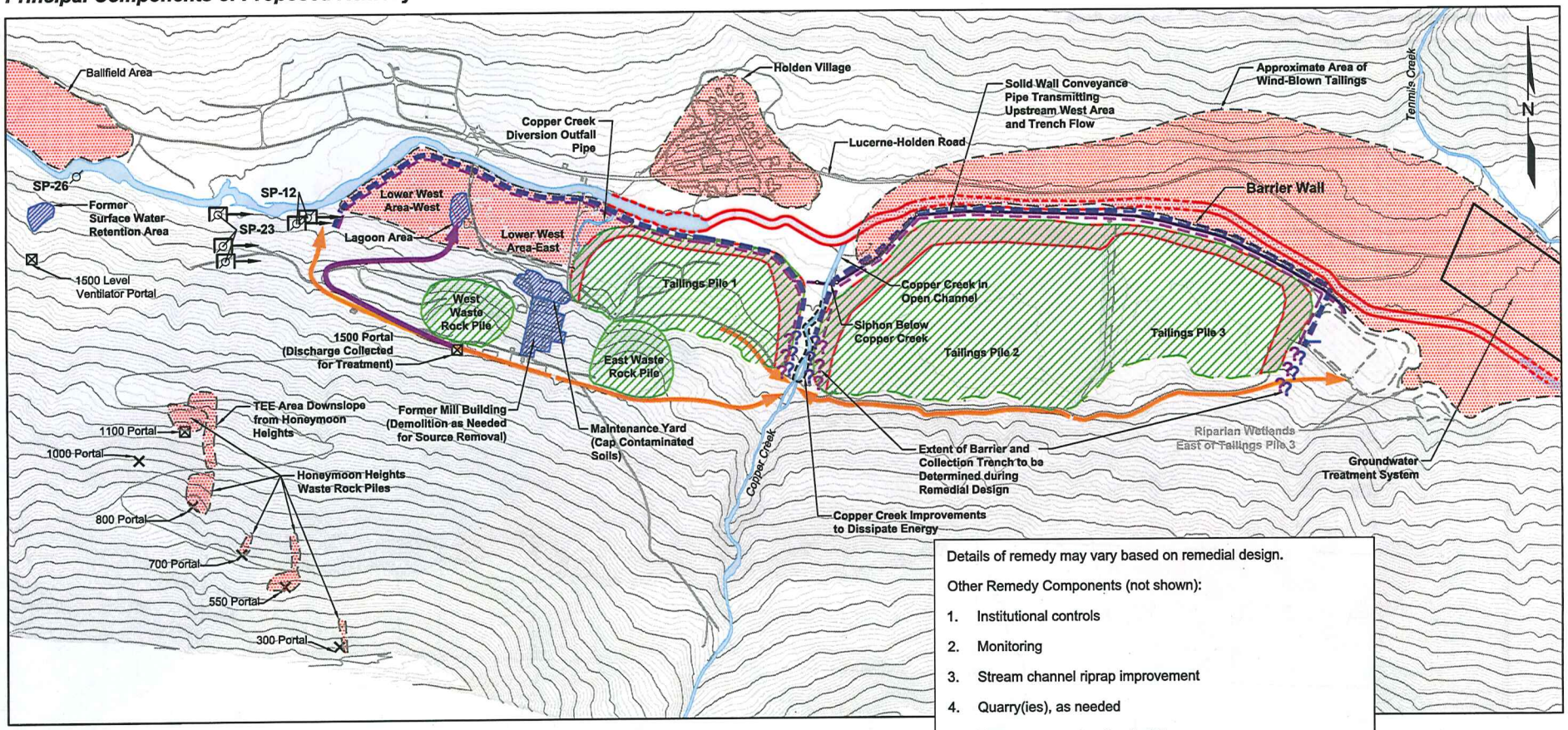
Principal Components of Proposed Remedy



Details of remedy may vary based on remedial design.

Other Remedy Components (not shown):

1. Institutional controls
2. Monitoring
3. Stream channel riprap improvement
4. Quarry(ies), as needed
5. Temporary construction facilities
6. Conveyance pipeline from portal discharge and seeps SP-23/SP-12 to treatment facility
7. Monitor SP-26 water quality and other locations in accordance with an approved plan
8. Remediate impacted soil with *in situ* treatment in additional areas, as discussed in the text.
9. Sludge disposal landfill

Legend

- Regrade and Cap Tailings and Waste Rock Piles
- Remove or Cap Contaminated Soils
- Regrade Tailings Pile Slopes
- Approximate Extent of *In Situ* Treatment Areas
- Upgradient Runoff Diversion Trench
- Fully-Penetrating Barrier Wall and Open Collection Trench
- Portal Discharge Conveyance Trench
- Portal to be Closed with Hydrostatic Bulkhead
- Portal to be Closed with Air Flow Restrictors
- SP-23 Seep Collection for Treatment
- Existing Creeks
- Railroad Creek Realignment (Actual limits to be determined during remedial design)
- Unlined Collection or Conveyance Trench
- Lined Conveyance Channel or Treatment Trench with Drop Structures as needed
- Solid Wall Conveyance Pipe

0 600 1200
Scale in Feet

Source: Prepared from AutoCAD file "Alt 13M Contingent.dwg", created by URS, 06/24/09.

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Figure 1

Time-Critical Removal Action Memo