STATE ENVIRONMENTAL POLICY ACT (SEPA)
MITIGATED DETERMINATION OF NONSIGNIFICANCE (MDNS)
FOR THE HOLDEN MINE CLEANUP PLAN

Description of proposal: Holden Mine Cleanup Plan/Remedial Action

The USDA Forest Service is the lead Agency responsible for the environmental cleanup of the Holden Mine Site (hereafter referred to as "the Site"). The USDA Forest Service (Forest Service), in cooperation with the Environmental Protection Agency (EPA) and the Washington State Department of Ecology (Ecology), have developed a proposed plan for cleanup.

The Forest Service, EPA, and Ecology are referred to collectively as "the Agencies." The preferred cleanup action for the Site is described in the SEPA checklist. The Proposed Plan was prepared by the Agencies acting in accordance with CERCLA, 42 USC 9601 et seq., as amended, and the regulations promulgated thereunder at the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300; the MTCA, RCW 70.105D.010-.921, and the regulations promulgated thereunder at Chapter 173-340 WAC; and the State Environmental Policy Act (SEPA), Chapter 43.21C RCW.

The total area disturbed by historical mining activities is approximately 125 acres. The proposed cleanup action includes construction and operation of collection systems (ditches, groundwater barrier walls, drains, etc.) for treating metals-laden water discharging from the underground mine and groundwater impacted by the mine, mill tailings, and waste rock. The work also involves relocation of a segment of the Railroad Creek channel adjacent to the tailings piles. Groundwater at the Site would be collected using a barrier wall and collection system to reduce the amount of contaminated groundwater that would otherwise enter Railroad Creek. The Site waters collected would be treated by an acid neutralization process to remove metals. The metals removed would become a stable metal hydroxide sludge to be disposed of on the Site. The proposed cleanup action also includes regrading of tailings pile and waste rock piles, excavation and disposal of soils that exceed cleanup levels, capping some contaminated soils to isolate them from the environment, and permanent closure of the tailings and waste rock piles to limit potential for future releases.

Proponents: Forest Service, EPA, and Ecology

Location of proposal, including street address, if any:

The Site is located in Chelan County in north central Washington, occupying portions of Sections 7, 8, 17, and 18, T 31 N, R 17 E, and Sections 12 and 13, T 31 N, R 16E. The former mine is located in the Railroad Creek valley about 10 miles upstream (west) of Lake Chelan, on the eastern slopes of the Cascade Mountains. The Site is situated within the Wenatchee National Forest, and the Glacier Peak Wilderness generally bounds the Site to the west, north, and south.

The former mine operations area of the Site extends over an area of about 125 acres, not including some smaller, outlying areas that have also been impacted by historical mining (e.g., Honeymoon Heights). Principal features of the Site include the underground mine, remnants of the former mill building (the mill structure was largely destroyed by a fire after the mine closed), main east and west waste rock piles that extend over about 8 acres, and piles of tailings (sandy waste material left from the former mill operation) that extend over about 90 acres. Holden Village, Inc. (a not-for-profit corporation) has operated an

interdenominational religious retreat community since the 1960s in the former miner's Village of Holden, just north of the former mine operations area.

Description of mitigation: Mitigation for the proposal is described in the attached State Environmental Policy Act (SEPA) Checklist. In general, mitigation will consist of working with Holden Village, Inc.; contractors, and sub-contractors to ensure environmental regulations are followed and best management practices and principles applied.

Lead agency: Washington State Department of Ecology

The lead agency has determined that this proposal, with mitigation described in the attached Environmental Checklist will not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030 (2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

This MDNS is issued under provisions of WAC 197-11-340 and WAC 197-11-350; the lead agency will not act on this proposal for 30 days from June 30, 2010. Comments must be submitted by July 30, 2010.

Responsible official: Valerie Bound

Position/title: Section Manager, Toxics Cleanup Program, Dept. of Ecology

Address: 15 West Yakima Ave. Suite 200, Yakima, WA 98902

Date: June 30, 2010 Signature Valerie Bound

WAC 197-11-960 Environmental checklist.

ENVIRONMENTAL CHECKLIST

Purpose of checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer," and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

Holden Mine Cleanup Plan/Remedial Action

2. Name of applicant:

Washington State Department of Ecology
Central Regional Office

3. Address and phone number of applicant and contact person:

Valerie Bound
Section Manager, Toxics Cleanup Program
Washington State Department of Ecology
Central Regional Office
15 West Yakima Ave. Suite 200
Yakima, WA 98902-3452

The USDA Forest Service is the lead Agency responsible for the environmental cleanup of the Holden Mine Site (hereafter referred to as "the Site"). The USDA Forest Service (Forest

Service), in cooperation with the Environmental Protection Agency (EPA) and the Washington State Department of Ecology (Ecology), have developed a proposed plan for cleanup.

The Forest Service, EPA, and Ecology are referred to collectively as "the Agencies."

4. Date checklist prepared:

June 02, 2010

5. Agency requesting checklist:

Ecology

6. Proposed timing or schedule (including phasing, if applicable):

The Site was an underground copper mine that was operated by the Howe Sound Mining Company (Howe Sound) from 1938 to 1957. Past mining operations at the Site have resulted in an ongoing release of hazardous substances (primarily metals), and an appropriate response action is required under both federal and state law.

Both a remedial investigation (RI) and feasibility study (FS) have been completed for the Site, and a Proposed Plan for Cleanup Action has been prepared and is being issued for public review and comment. The cleanup action will be carried out by Intalco (successor of Howe Sound). Remedial design and construction for the cleanup action is estimated to begin in 2011. Based on the remoteness of the Site and weather conditions, a typical work season spans approximately 5 to 6 months from spring until onset of winter conditions (October/November). Until further data and information is gathered, the exact timing of the construction seasons is unknown.

Remedial construction will likely follow a two-phased approach. It is anticipated that Phase I remedial construction will require approximately two years. Down time between the end of Phase I construction and the beginning of Phase II construction is expected to be five years. It is anticipated Phase II remedial construction, if necessary, will likely require an additional year.

One of the first components to be constructed is a wastewater treatment facility. Building this facility first allows it to be used to treat stormwater runoff as needed during the remaining construction work. Once construction is complete, the environmental cleanup remedy is anticipated to be in operation until the contaminant concentrations of groundwater and surface water are below the proposed cleanup levels.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

There are no specific plans for additions or expansions of the project. Extensive monitoring will take place to ensure the environmental cleanup remedy is protective of both human health and the environment. Additional cleanup actions and construction would only be necessary at the Site if monitoring information demonstrates the remedy is **not** protective. In that case, a design change to the remedy may be necessary.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

a. Proposed Plan for Holden Mine Site, Chelan County, Washington. Prepared for Forest Service by Hart Crowser. 2010.
   - (This SEPA checklist is included as an attachment to the Proposed Plan).

b. Remedial Investigation
   - Draft Final Remedial Investigation Report, Holden Mine Site. Prepared for Alumet, Inc. by Dames and Moore. July 28, 1999.

c. Feasibility Study
   - Addendum to the Supplemental Feasibility Study (Forest Service, 2010)
   - Supplemental Feasibility Study (SFS), Holden Mine Site, Chelan County, Washington. Prepared by the Forest Service, Ecology, and EPA. September 2007.
   - Draft Final Feasibility Study, Holden Mine Site. Prepared for Intalco by URS Corporation. February 19, 2004, as modified by the Agencies (Forest Service, August 13, 2007)

d. Holden Mine Site Information Package, Chelan County, Washington. Prepared for EPA National Remedy Review Board by Hart Crowser, Inc. September 1, 2005.

The documents listed above summarize the relevant environmental information for this site. The complete Administrative Record for the Holden Project is available from both the Forest Service and Ecology at the addresses noted in the Proposed Plan.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None known.

10. List any government approvals or permits that will be needed for your proposal, if known.

The Holden Mine cleanup is being conducted under the joint authority of the Washington State Model Toxics Control Act (MTCA) [Chapter 173-340 WAC] and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended [CERCLA, 40 CFR Part 300]. For cleanup actions, MTCA states that only the substantive requirements of federal, state, and local regulations that are potential applicable or relevant and appropriate requirements (ARARs) must be met. Cleanups are exempt from procedural requirements that normally are implemented as permits. CERCLA has a similar provision for federal, state, and/or local permits. Therefore, specific permits are not needed for the proposed Holden Mine cleanup action, which is expected to meet the substantive requirements of the potential ARARs.

Potential ARARs to be met by the proposed cleanup action fall into three categories:

1) chemical-specific
2) location-specific
3) action-specific

Potential ARARs have been identified in the Addendum to the Supplemental Feasibility Study; the key potential ARARs are summarized below:

Chemical-Specific

- National Recommended Water Quality Criteria [Federal Water Pollution Control Act (Clean Water Act) 33 USC § 1314(a), Section 304(a)].
- National Toxics Rule [40 CFR Part 131].
- Maximum Contaminant Levels and National Maximum Contaminant Level Goals [40 CFR Part 141].
- 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].

Location-specific

- Aquatic Lands Management - Washington State [RCW 79.90; Chapter 332-30 WAC].
- Clean Water Act (CWA), Section 401 and 404 [33 USC 1344, 40 CFR Part 230, 33 CFR §§ 320-330].
- Endangered Species Act [16 U.S.C. §§ 1531 - 1544].
- Executive Order 11990 - Protection of Wetlands.
- Executive Order 11988 - Protection of Floodplains.
- National Forest Management Act [16 USC §§ 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).
- National Forest "Roadless Rule" [United States Department Of Agriculture Secretary's Memorandum 1042-154, *Authority to Approve Road Construction and Timber Harvesting in Certain Lands*, dated May 28, 2009].

Action-specific

- Washington Model Toxics Control Act [RCW 70.105D; Chapter 173-340 WAC].
- Resource Conservation and Recovery Act [42 USC § 6901], Subtitle C - Hazardous Waste Management [40 CFR Parts 260 to 279], and Subtitle D - Managing Municipal and Solid Waste [40 CFR Parts 257 and 258].
- Washington State Hazardous Waste Management Act and Dangerous Waste Regulations [RCW 70.105; Chapter 173-303 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 USC § 1342, Section 402].

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The preferred cleanup action for the Site is presented in the Proposed Plan, of which this SEPA checklist is an appendix. The Proposed Plan was prepared by the Agencies acting in accordance with CERCLA, 42 USC 9601 et seq., as amended, and the regulations promulgated thereunder at the National Oil and Hazardous Substances Pollution

Contingency Plan (NCP), 40 CFR Part 300; the MTCA, RCW 70.105D.010-.921, and the regulations promulgated thereunder at Chapter 173-340 WAC; and the State Environmental Policy Act (SEPA), Chapter 43.21C RCW.

The total area disturbed by historical mining activities is approximately 125 acres. The proposed cleanup action includes construction and operation of collection systems (ditches, groundwater barrier walls, drains, etc.) for treating metals-laden water discharging from the underground mine and groundwater impacted by the mine, mill tailings, and waste rock. The work also involves relocation of a segment of the Railroad Creek channel adjacent to the tailings piles. Groundwater at the Site would be collected using a barrier wall and collection system to reduce the amount of contaminated groundwater that would otherwise enter Railroad Creek. The Site waters collected would be treated by an acid neutralization process to remove metals. The metals removed would become a stable metal hydroxide sludge to be disposed of on the Site. The proposed cleanup action also includes regrading of tailings pile and waste rock piles, excavation and disposal of soils that exceed cleanup levels, capping some contaminated soils to isolate them from the environment, and permanent closure of the tailings and waste rock piles to limit potential for future releases.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The Site is located in Chelan County in north central Washington, occupying portions of Sections 7, 8, 17, and 18, T 31 N, R 17 E, and Sections 12 and 13, T 31 N, R 16E. The former mine is located in the Railroad Creek valley about 10 miles upstream (west) of Lake Chelan, on the eastern slopes of the Cascade Mountains. The Site is situated within the Wenatchee National Forest, and the Glacier Peak Wilderness generally bounds the Site to the west, north, and south. Please refer to Figure 1 of the Proposed Plan for a Vicinity Map of the Site.

The former mine operations area of the Site extends over an area of about 125 acres, not including some smaller, outlying areas that have also been impacted by historical mining (e.g., Honeymoon Heights). Principal features of the Site include the underground mine, remnants of the former mill building (the mill structure was largely destroyed by a fire after the mine closed), main east and west waste rock piles that extend over about 8 acres, and piles of tailings (sandy waste material left from the former mill operation) that extend over about 90 acres. Holden Village, Inc. (a not-for-profit corporation) has operated an interdenominational religious retreat community since the 1960s in the former miner's Village of Holden, just north of the former mine operations area. See Figure 3 of the Proposed Plan for principal Site features. See Figure 14 for the principal remedial components of the proposed cleanup action.

B. ENVIRONMENTAL ELEMENTS

1. **Earth**

a. General description of the site (circle one): Flat, rolling, hilly, steep slopes, **mountainous**, other . . . . . .

The Site is situated in the Railroad Creek Watershed. The watershed is generally oriented in an east-west direction within the Cascade Mountain Range, and is approximately 20 miles in length. The drainage is glacially carved and is generally U-shaped with relatively steep side slopes. The portion of the drainage near Lake Chelan is gently sloping at the mouth for about one-half mile, becoming relatively steep with several waterfalls for the first few miles. The drainage then transitions to a more moderate gradient past the Site.

b. What is the steepest slope on the site (approximate percent slope)?

The slope angle of a majority of the lower to mid-slopes facing Railroad Creek for Tailings Piles 1 and 3 were observed to range between 22 and 33 degrees (40 to 65 percent slope), with isolated portions of the upper slopes of Tailings Pile 1 in excess of 60 degrees (173 percent slope). The majority of the mid- to upper slopes of the Tailings Pile 2 facing Railroad Creek was observed to be greater than 44 degrees (97 percent slope). The slopes of the waste rock piles are also relatively steep, in some cases approaching 45 degrees (100 percent slope). The proposed cleanup actions include cutting back these steep tailings piles and waste rock slopes to improve stability.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

Site geology generally consists of stream alluvium and glacial soil materials overlying bedrock within the valley bottom and lower valley walls of the Railroad Creek drainage. The alluvium ranges from silty, sandy gravel to relatively non-silty sand and gravel with cobbles. The glacial materials were interpreted to consist of glacial drift (silt- to boulder-sized material) and basal till (densified glacial silt- to boulder-sized material).

Mining-related materials at the Site consist of tailings from the processing of the ore-bearing bedrock. The tailings consist of fine-grained silt and sand. The Site also includes waste rock piles from development of the underground mine. The waste rock consists of coarse angular rock fragments that include sulfide minerals and some metals, but are generally less mineralized than the ore.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

Previous mass releases of tailings materials into Railroad Creek were reported to have occurred downstream of Copper Creek during a 1966 storm event; and earlier, in 1946, according to Forest Service reports. Another substantial release of tailings materials into the creeks occurred during a flood event in October 2003. During this flood, Copper Creek overflowed and eroded portions of Tailings Pile 1 leading to the release of an estimated 600 cubic yards of tailings material into Railroad Creek. During the same period, scour undermined a section of riprap along the base of the western slope of Tailings Pile 2. Emergency response activities were performed to address some of the conditions caused by the flooding, including increasing the flow capacity of Copper Creek south of the tailings piles, armoring a portion of the Railroad Creek bank along Tailings Pile 2, removing log and debris jams, and contouring gullies that formed on Tailings Pile 1. In Spring 2006, tailings

erosion was again noted along the east side of Copper Creek, located near the confluence of Copper Creek and Railroad Creek, where tailings material as well as native soils had been eroded. There is risk that additional undercutting by Copper Creek in this area could lead to slope failures of Tailings Pile 2, which in this area rises at a grade of about 80 percent to a height of more than 80 feet above creek level. Additionally, extensive erosion has continued on Tailings Pile 1, including some of the areas where gullies formed during the October 2003 flood.

As part of the proposed cleanup action, actions will be taken to minimize the potential for tailings pile slope failures, including surface water run-on and runoff controls; regrading and constructing slope toe buttresses to improve stability of the tailings pile slopes; erosion protection; relocating a segment of Railroad Creek; and moving the toe of the tailings pile slopes an appropriate distance away from Copper Creek and Railroad Creek (where not relocated). Following regrading, the tailings piles would be closed in accordance with Washington standards for limited purpose landfills [Chapter 173-350 WAC], which would include capping the tailings piles, and establishing a permanent self-sustaining vegetative cover to provide erosion protection. Following closure, the tailings piles would be subject to periodic observations to monitor for signs of potential slope failures and the need for any improvement in erosion protection over time. Similarly, the main east and west waste rock piles would also be regraded to improve stability, capped, revegetated, and monitored to assure stability over time.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

The proposed cleanup action includes permanent closure of the waste rock and tailings piles to meet Washington State limited purpose landfill requirements as described above.

Final slope inclinations (e.g., 2H:1V) and buttress configurations for waste rock and tailings piles stability needed to satisfy landfill stability requirements will be determined from engineering analyses during the remedial design stage of implementation. This slope inclination needs to account for the tailings pile and waste rock cover material that will be placed on these slopes and the requirement for the cover to be able to sustain native vegetation as part of the state design requirements for a limited purpose landfill. Earthquakes would also need to be considered in the final design of the tailings pile and waste rock slopes and buttresses. The proposed cleanup action involves regrading approximately 385,000 cubic yards (cy) of tailings and 134,000 cy of waste rock.

Tailings material removed from the slopes during regrading would be used as fill and graded to improve surface water runoff on top of the tailings piles. Regrading the waste rock piles would involve disposal of some waste rock on one of the tailings piles prior to closure. The final cover on the regraded waste rock and tailings piles would meet the performance standards for a limited purpose landfill [WAC 173-350-400(3)(e)(i)(A) through (D)], based on acceptable design analyses.

Soil for the cover on the tailing piles and waste rock piles would be obtained from the treatment facility pond excavations, other excavation for remediation (e.g., roadway and ditch construction), and as needed from a borrow pit (e.g., Dan's Camp) established on National Forest land near the Site. The Agencies estimate that about 285,000 cy of soil

would be used as cover for the tailings and waste rock piles. Removal of soil from Dan's Camp will potentially result in habitat impacts, including land disturbance, the removal of timber and other vegetation, over an area of several acres. Measures to mitigate the effects of this soil removal are discussed below in Section B.1.h. While soil removal from Dan's Camp would lead to some habitat impacts, soil placement on the tailings and waste rock piles will benefit terrestrial receptors at the Site by eliminating existing toxicity risks due to exposure to elevated metals concentrations in the tailings and waste rock.

Under the proposed cleanup action about 152,000 cy of riprap would be placed for remedial components including Railroad Creek relocation, Copper Creek channel extension, bank protection/creek stabilization of existing creek channels, and tailings pile buttresses. Potential quarry sites on National Forest land near the Site (e.g., Lightning Ridge) would be evaluated during remedial design to provide a source of the riprap. Mitigation measures for habitat impacts at the selected quarry site are discussed below in Section B.1.h. Additionally, some riprap would be generated during construction to relocate a segment of Railroad Creek.

Soil excavation would occur for the construction of a groundwater barrier wall and collection systems along Railroad Creek in the Lower West Area from the Main Portal discharge point into Railroad Creek to the Copper Creek Diversion and along Tailings Piles 1, 2, and 3. It is anticipated that the barrier wall and collection trench system would be about 8,000 feet in length and could extend as much as 100 to 125 feet below ground surface, depending on the depth of underlying glacial till or bedrock. The groundwater collection system (which includes collection of seeps) would consist of ditch(es), buried trench drain(s), and/or pumped wells, as determined during remedial design. The amount of material excavated for this system, and the suitability for reuse as fill will depend on the information developed during remedial design and construction. Excavated soil, which is unsuitable for reuse due to contamination or gradation, would be disposed of in a limited purpose landfill that would likely be constructed on top of one of the regraded tailings piles.

The east and west wastewater treatment plant sites will require grading and excavation for construction of the facilities, which would include the treatment ponds. Approximately 10 acres would be cleared and excavation would produce an estimated 86,500 cy of soil that would be placed on the tailings piles and waste rock piles as cover material. While the construction of the treatment plants would eliminate some forested habitat at the Site, the treatment of impacted water by the plant once it is operational would reduce toxicity risks to aquatic organisms and improve benthic habitat that is currently degraded by iron precipitation and ferricrete formation.

Excavations of an estimated total of 30,400 cy of soils, tailings, and mill residuals above proposed cleanup levels would occur at the former mill, lagoon area, ventilator portal detention area, ballfield area, and lower west area; and this soil or soil-like material would be relocated to a permanent containment area (limited purpose landfill) on the Site, likely on one of the tailings piles. In the maintenance yard area, soil exceeding proposed cleanup criteria would be capped with a concrete or asphalt slab covering an area of about an acre. Additional cleanup of soil above proposed soil cleanup levels in other areas such as Holden Village, the Honeymoon Heights waste rock piles, areas downslope of the Honeymoon Heights waste rock piles, and areas of visible accumulations of wind-blown tailings north and east of the mine are also included in the proposed cleanup action. The

extent of this additional soil cleanup will need to be determined by additional analyses during remedial design.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Erosion of soil could potentially occur during regrading of the tailings and waste rock piles and placement of the soil cover; during the excavations of the groundwater barrier wall and collection trench systems; during the excavation of contaminated soils in selected portions of the Site; during the excavation and construction of the treatment facility; during road or bridge construction; and during the demolition of the former mill building. All regrading, excavation, demolition, and construction work included in the proposed cleanup action will be performed in accordance with an approved SWPPP that includes best management practices (BMPs) for erosion and sediment control. Stormwater that is impacted by metals runoff would be treated prior to discharge to Railroad Creek.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Approximately one acre of the property will be covered with an asphalt or concrete cover in the area of the maintenance yard. This cover will prevent direct contact, erosion, and infiltration from causing further releases from impacted soils to groundwater, and allow continued use of this area by Holden Village for vehicle maintenance purposes.

Two treatment plants will be constructed at the Site for the treatment of impacted groundwater. The impervious area associated with the completed treatment plants footprint, including lined treatment ponds, will cover an area of approximately 5 acres.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

- Potential erosion during construction would be avoided by implementation of an approved construction stormwater pollution prevention plan (SWPPP) in accordance with Ecology regulations.
- An on-site water treatment facility would be constructed prior to any regrading or excavation of the tailings and waste rock, so the water treatment facilities could be used for detention and treatment of runoff impacted by subsequent earthwork.
- The tailings piles will be regraded and/or Railroad Creek relocated such that the tailings will be sloped and set back from the Railroad and Copper Creeks to reduce the potential for future loss of tailings to the creeks in case of slope failure or flooding.
- A soil cover would be placed on the tops and slopes of the waste rock and tailings piles and revegetated with self-sustaining vegetation to eliminate transport by wind or water erosion.
- Tailings pile and waste rock regrading work would occur concurrently with the placement of the soil cover. In this way, the area of unoxidized tailings that is exposed any time could be minimized, thus reducing risk of stormwater runoff conveying exposed tailings into Railroad or Copper Creeks.
- Dust generation on haul roads and in earthwork construction areas would be mitigated with water trucks.
- Additional riprap would be placed between the tailings piles and the creeks, where existing creek channels are to remain, for stream bank protection to mitigate potential

erosion of the tailings piles, and possible other areas where channel migration would threaten the remedy.

- A runoff collection ditch would be installed along the base of the tailings piles, which would enable collection of runoff from the regraded slopes and conveyance to downstream detention and the treatment facility.
- Additional BMPs would be implemented as needed to manage erosion and sediment during construction activities.
- Soils with metals concentrations above proposed cleanup levels would be permanently contained in a limited purpose landfill, which is likely to be located on one of the tailings piles. It should be noted that a groundwater barrier and collection system will be located at the toe of the three tailings piles and will contain groundwater contaminated by the tailings that would otherwise discharge into Railroad Creek. Collected water will be treated prior to discharge to Railroad Creek.
- The release of bentonite or cement used during construction of the groundwater barrier walls, and sediment that might be produce during construction of pipeline stream crossings would be minimized by BMPs, including location of dry materials storage and mixing facilities away from the creek, good housekeeping to minimize spillage during slurry handling, and advance preparation of a spill management contingency plan.
- Habitat impacts at Dan's Camp and at the selected quarry site will be mitigated through pre-construction surveys; avoidance of impacts to mature forest; following National Forest Service weed prevention requirements (further discussed in Section 4.d); and reclamation of the borrow pit and quarry after excavation is completed.

2. **Air**

a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

The use of large equipment, such as dozers, excavators, loaders, compactors, and trucks, during implementation of the proposed cleanup action for regrading, excavation, and construction work would result in dust and exhaust emissions. URS, the consultant for Intalco, provided some preliminary air emissions estimates in the DFFS. This information is also used in the Supplemental Feasibility Study and was extrapolated to determine an air emission estimate for the proposed cleanup action based on the total volume of tailings and waste rock that would be regraded. Emissions over the duration of construction are estimated to be on the order of 70 combined tons of particulate matter, nitrogen oxides, hydrocarbons, and carbon monoxide. BMPs will be followed to reduce air emissions during construction.

Once the proposed cleanup action has been constructed, the only likely source of air emissions would be from diesel generators used for the operation of the water treatment plant facility and pumping water and sludge. However, alternative means of producing electrical power will be evaluated during remedial design, and could include hydropower or possibly generators with other fuel sources. If diesel generators are used, is projected that approximately 34,700 gallons of diesel a year would be consumed.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

None known.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

- Water trucks will be used to minimize dust generated from regrading, excavation, and construction work. Additionally, water trucks will be used to minimize road dust.
- The regraded waste rock and tailings piles would be covered with a soil cover, and revegetated, thus reducing long-term wind-blown dust problems.
- Regrading the tailings will be performed in stages with concurrent placement of the soil cover to minimize the potential for wind-blown tailings during construction.
- Regular maintenance will be performed on heavy construction equipment, generators, and other vehicles used to control emissions during construction to assure proper operation, in accordance with state air quality regulations. Typically this would include requirements that gasoline and diesel equipment used on the Site will be less than 5 years old; the equipment will be properly maintained; diesel equipment will use low sulfur diesel (500 ppm or less); and construction measures will be implemented to reduce the idling time of construction equipment.
- Long-term energy requirements for the permanent water treatment system, and alternative sources, such as locally produced hydroelectric generating capacity, will be evaluated during remedial design, to minimize future emissions from the water treatment plant.

3. **Water**

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

There are two streams, Railroad and Copper Creeks, in the immediate vicinity of project activities, as well as multiple ephemeral streams (e.g., Honeymoon Heights area drainages). Copper Creek and the ephemeral streams are tributaries of Railroad Creek, which in turn flows into Lake Chelan. See Figure 4 in the Proposed Plan for the location of these creeks relative to the Site. The proposed cleanup actions will reduce releases of acid and metals from the Site into the two creeks. Wetlands are also located near or within the Site, e.g., just east of Tailings Pile 3. See Figure 4 in the Proposed Plan for the locations of USFS mapped wetlands relative to the Site.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Refer to Figures 4 and 14 in the Proposed Plan for the location of the principal components of the cleanup action in relation to Railroad Creek, Copper Creek, ephemeral streams, and wetlands. Detailed construction plans will be prepared during remedial design after the Agencies issue the ROD.

There are portions of the Site where the toe of the existing tailings piles are immediately adjacent to or within the flood limits of Railroad and Copper Creeks. As part of the proposed cleanup action, the toe of the tailings will be set back from both creeks to reduce the potential for future erosion of the tailings through a combination of tailings regrading and creek relocation. This requires regrading work adjacent to and within portions of Copper Creek and Railroad Creek adjacent to the tailings piles and where the relocated creek channel will intersect the existing creek channel.

Between the regraded tailings piles and Railroad and Copper Creeks, a groundwater barrier wall and collection system will be constructed in the proposed cleanup action, which will intercept and prevent metals-laden groundwater from entering the creeks. A groundwater barrier wall and collection trench system will also be placed adjacent to Railroad Creek in the Lower West Area of the Site, between where the mine portal discharges into Railroad Creek and the Copper Creek Diversion. Pipeline crossings across Copper Creek will be constructed to convey the collected groundwater to the east water treatment facility. Additionally, between the tailings piles and Railroad Creek, a road will be constructed to provide access to monitoring wells, surface water runoff controls (such as a stormwater collection ditch), and the groundwater collection systems. The road would also allow access to riprap along the relocated Railroad Creek banks and the tailings piles slopes so that these areas can be maintained in the future.

Along segments where Railroad Creek is not relocated, existing riprap along Railroad Creek would be supplemented with new riprap to construct barbs to reduce bank

erosion and scour adjacent to the bridges and tailings piles. Riprap placement would require stream bank and in-stream work.

Additional work adjacent to Railroad Creek includes the construction of a new vehicle bridge over the creek, and the water treatment facilities. The new bridge would be constructed just east of Tailings Pile 3. The water treatment facility would also be constructed east of Tailings Pile 3, within the footprint of the existing wetland east of Tailings Pile 3. Pipelines would cross beneath Copper Creek to convey contaminated water to the treatment facility. The treatment system would discharge treated groundwater into Railroad Creek via one or more outfalls.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

The majority of the Railroad Creek channel currently adjacent to the tailings piles will be relocated to the north, and the Copper Creek channel will be extended to intersect the relocated channel. No filling activities are currently planned where Railroad or Copper Creeks will remain in their existing channels, except enhancement and extension of existing riprap as described above. Some excavation within the creek channels would be performed to key in the riprap below estimated depth of scour, and to enable construction of a pipeline crossing Copper Creek for the treatment system. No dredging is anticipated, except for removal of ferricrete, which is an existing byproduct of hazardous substances discharged into Railroad Creek adjacent to the tailings piles. However, relocation of Railroad Creek will address currently known occurrences of ferricrete. The mass of ferricrete to be removed would be determined during remedial design, along with completion of a hydrologic analysis to determine the depth of excavation to key in the riprap.

A portion of the wetland area immediately east of Tailings Pile 3 will be filled to accommodate part of the east water treatment system. The rest of the existing wetland will be significantly modified to serve as an engineered wetland component of the water treatment system.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

A groundwater barrier wall and collection system is included in the proposed cleanup action to collect contaminated groundwater from the Site for treatment. This water, which would normally enter Railroad or Copper Creek as baseflow, would be discharged to Railroad Creek downstream of the Site contamination sources, resulting in no substantial decrease in flow within Railroad Creek downstream from the tailings piles.

During construction, surface water will be needed for potable water usage for the construction crew and camp, dust control, and other construction purposes. The Agencies estimated that there will be up to about 50 workers living near the Site during a 5-to 6-month construction season, over two years for Phase I construction and an additional year for Phase II construction. The source of potable water to the

construction camp will likely be from Railroad Creek or possibly Copper Creek via the existing Holden Village intake system, located upstream of the Site. The location of the workers' camp has not been determined but may be located in the baseball field area, unless this location would interfere with the proposed cleanup action, or potentially within Holden Village, if amenable to Holden Village and the USFS per the conditions of Holden Village's special use permit. Another, smaller, potential camp associated with the construction unloading and staging area at Lucerne. In addition, water from the creeks and/or Lake Chelan would be used for dust suppression and production of concrete for construction of the water treatment facility. Water used for construction would be obtained in accordance with the requirements for a temporary water right permit.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

Floodplains have yet to be delineated and will be analyzed during the remedial design phase of the project. Some remedial actions are anticipated to be located within the floodplain of Railroad and Copper Creeks, (e.g., removal of contaminated soils from the lagoon area, excavation and grading of tailings, construction of the groundwater barrier wall and collection system, riprap placement, construction of an access road along the north side of the tailings piles, and construction of a bridge over Railroad Creek). However, these activities are estimated to be completed within two years for Phase I and an additional year for Phase II construction, and will not diminish flood capacity of the existing creek channels. Additionally, changes to floodplains will occur due to relocation of a segment of Railroad Creek which will need to be addressed during remedial design.

The floodplain analysis to be conducted during remedial design will be used to determine proper placement of riprap, and location of the water treatment facilities.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

The proposed cleanup action provides for long-term collection and treatment of groundwater with elevated metals concentrations. Treated water would be discharged from the treatment plant into Railroad Creek. The NPDES regulations are a potential ARAR; and requirements for point source discharges and stormwater runoff are potentially applicable for the Site, any point source discharge of contaminated water (e.g., discharge following treatment of groundwater and portal drainage), stormwater runoff at the Site, and where the construction site involves 1 acre or more.

The treatment plant is expected to operate as long as contaminated groundwater would otherwise discharge into Railroad Creek. Groundwater collected for treatment is estimated to range from about 2.3 million gallons per day during the spring to 1.5 million gallons per day during the fall months. Treatment would be required to use all known available and reasonable technologies (AKART) to achieve proposed cleanup levels in the treated water discharge. Based on reported experience with similar treatment systems at sites with similar influent water quality, anticipated order of magnitude metals concentrations in the treatment system effluent for the Site's

constituents of concern are shown below, followed by the proposed cleanup level in parentheses[1]:

- Aluminum: 100 to 1,000 ug/L (152 ug/L);
- Cadmium: 0.03 to 3 ug/L (0.09 ug/L);
- Copper: 10 to 100 ug/L (1.17 ug/L)[2];
- Iron: 200 to 2,000 ug/L (1,000 ug/L);
- Lead: 0.1 to 1 ug/L (0.54 ug/L); and
- Zinc: 30 to 300 ug/L (11 ug/L).

Comparing these anticipated ranges in effluent values with the respective proposed surface water cleanup levels, iron and lead concentrations in the effluent may meet the proposed cleanup levels, whereas concentrations of aluminum, cadmium, copper, and zinc may not. However, the anticipated range in metal concentrations in the effluent are much lower, often two orders of magnitude, than the blended influent to the treatment plant of groundwater (including the portal drainage) collected from the Site, which represents a net improvement in water quality.

b. Groundwater:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

Some groundwater (including portal discharge) that would usually discharge into Railroad Creek from the Site would be intercepted and collected for treatment and be discharged at the treatment system outfall. Based on mass-loading analysis for the Site, the Agencies predicted that approximately 620 million gallons per year of contaminated groundwater would be collected and treated prior to be being discharged into Railroad Creek.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Metal hydroxide sludge generated in the process of treating the contaminated

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[1] Note proposed cleanup values are adjusted for background and hardness where applicable. Note that use of a mixing zone may be appropriate for the treated effluent discharge, as discussed in Appendix F of the SFS.

[2] The Aquatic Life Ambient Freshwater Quality Criteria--Copper 2007 Revision (EPA-822-R-07-001), (the "2007 copper criterion") was published in the Federal Register on February 22, 2007. The 2007 copper criterion provides a basis to determine acute and chronic concentrations for protection of aquatic organisms based on the Biotic Ligand Model. The model determines concentrations that are protective based on an analysis of ambient conditions for a number of parameters. To date, relatively few data have been collected at the Site to provide a basis for predicting acute and chronic copper concentrations for Railroad Creek under this criterion. The Agencies anticipate the cleanup level established at the time of the ROD would be based on the background concentration for dissolved copper in accordance with WAC 173-340-730(5)(c), and that this could be modified in accordance with ARARs based on additional data collection following implementation of the remedy.

groundwater will be disposed of in a limited purpose landfill located on one or more of the tailings piles. The annual volume of sludge produced by treatment will vary over time, both because of changes in the amount of metal in the groundwater to be treated, but also as the sludge consolidates under its own weight. The Agencies estimated that a total of about 10.6 million gallons of sludge would be removed from the east and west treatment system ponds the first year of operation, with a solids content of about 4 percent. Annual sludge generation is anticipated to decrease over time. Estimates of the volume sludge generated will be revised based on on-going pilot treatment studies at the Site. After placement in a landfill cell, and consolidation, the sludge would have a solids content of around 20 percent and would occupy less than a fifth of its initial volume.

Site-specific sludge characterization will need to be conducted during initial start-up of the treatment plant. Sludge characterization conducted at other mine sites has indicated that sludge from the same type of treatment process, which would be used at Holden, is chemically stable and that leachate produced from sludge consolidation is alkaline with metals concentrations in the leachate typically well below the level needed to protect groundwater at the Site. The on-site landfill would conform to the standards for limited purpose landfills [WAC 173-350-400], including a liner and leachate collection system.

During construction, wastewater will be generated in the construction crew camp and will be discharged into the ground through a septic tank. The location of the workers' camp has not been determined but may be located in the baseball field area, unless this location would interfere with the proposed cleanup action, or potentially within Holden Village, if amenable to Holden Village and the USFS per the conditions of Holden Village's special use permit. Another, smaller, potential camp associated with the construction unloading and staging area at Lucerne.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

During tailings regrading, stormwater runoff will be collected in a ditch downgradient of the tailings piles and conveyed to the treatment system, prior to discharge to Railroad Creek.

2) Could waste materials enter ground or surface waters? If so, generally describe.

Construction will incorporate BMPs to reduce risk of wastes being discharged to groundwater or surface waters. No waste material would intentionally be discharged except water that has been treated in the proposed on-site water treatment facility.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

- Metals-impacted groundwater (including seeps and portal drainage) from all known sources above proposed cleanup levels at the Site would be collected for treatment before being discharged into Railroad Creek.
- Refer to the list of erosion reduction and control measures in Section B.1.h above that are also mitigation measures for water quality impacts at the Site.
- Work would be performed in accordance with potential ARARs (see Section A.10). A construction SWPPP for the Site would be prepared and implemented. Typically this would include requirements such as having the hydraulic and fuel systems for heavy equipment used for work along the stream bank and in-stream work have their oil and fuel lines inspected for leaks prior to use. Equipment used for in-stream work will be required to use synthetic or vegetable-based biodegradable lubricants and hydraulic fluids.
- Spill prevention and containment requirements would be required by construction contract documents. Requirements that oil and fuel spill containment supplies (floating absorbent booms, absorbent pads, etc.) must be on site during work, would be subject to verification by the Agencies construction inspector(s).
- All heavy equipment and support vehicles that cross Railroad Creek and/or are used for stream bank or in-stream work will need to be cleaned of any oil, grease, or hydraulic fluids that may come in contact with creek water during the crossing.
- Mitigation of construction impacts associated with riprap placement and ferricrete removal would help restore Railroad Creek to more natural flow conditions where the existing channel will remain, such as existed prior to deposition of the tailings. Appropriate design standards based on potential ARARs will be used for any stream channel modifications and relocation. This could include pools or woody debris to reduce the creek velocity and creating slow water habitats. New riprap added along the existing creek and as part of the banks of the relocated creek will be used to construct barbs to reduce bank erosion and scour adjacent to the bridges, Lucerne-Holden Road, and tailings piles. During remedial design, a hydrologic/geomorphic study will be performed to support design of riprap along existing Railroad and Copper Creek channels, as well as the relocated segment of Railroad Creek and extension of Copper Creek. Channel modifications and riprap installation will reduce reliance on deteriorated riprap and log cribbing that exists west of Copper Creek. Woody debris will be installed, and disturbed areas of the bank would be planted to restore or establish the riparian corridor to pre-mining conditions.
- Ferricrete formations within Railroad Creek will be addressed through removal and/or creek relocation to restore aquatic habitat.

The proposed cleanup action includes construction of source control measures to reduce future metals releases to groundwater. Source controls include removal of contaminated soil by excavation of soils that exceed proposed cleanup criteria from the lagoon, mill building, ventilator portal detention area, and removal or other cleanup of soils above proposed cleanup levels in the Lower West Area, Holden Village, the baseball field, or areas of visible accumulations of wind-blown tailings north and east of the mine. Excavations would be backfilled with clean soil obtained from the water treatment facility, other necessary excavation or Dan's Camp, and revegetated. Source controls would also include capping the tailings and waste rock piles, and soils above proposed cleanup levels in the maintenance yard area.

4. **Plants**

a. Check or circle types of vegetation found on the site:

X deciduous tree: alder, maple, aspen, other
X evergreen tree: fir, cedar, pine, other
X shrubs
X grass
____ pasture
____ crop or grain
X wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
____ water plants: water lily, eelgrass, milfoil, other??
X other types of vegetation. See attached Table 4.6-5 from the Remedial Investigation report.

b. What kind and amount of vegetation will be removed or altered?

Regrading activities will require removal of trees and shrubs on the slopes and tops of the tailings piles. Existing vegetation currently covers less than about 20 percent of the tailings piles that extend over about 90 acres; these trees and shrubs were planted during previous reclamation work, or to a lesser extent have developed naturally. Closure of the tailings piles would include placement of a soil cap, and revegetation as discussed in Section 4.d below. In addition a total area of about 10 acres of mixed trees and shrubs would be removed from the Lower West Area and the wetlands east of Tailings Pile 3 for construction of the west and east water treatment facilities. Other incidental clearing would be performed to construct or improve run-on diversion swales along the south side of the Site, other construction access, and in areas used for construction staging, and temporary worker's camp(s). Remedial construction may include construction staging and/or a temporary construction workers' camp on roads in the former Winston Townsite and/or the ball field, unless this would interfere with the cleanup. Location of staging area(s) and camp will be determined during remedial design. The proposed location for the workers' camp and staging areas would minimize impacts to vegetation in the National Forest.

c. List threatened or endangered species known to be on or near the site.

Special status species were reviewed in the Remedial Investigation report. Tables 4.6-11 and 4.6-12 from that report are attached and provide a listing of these species (both animals and plants) that may occur in the vicinity of the Site, along with their potential to occur in the project area. Tables 4.6-13 through 4.6-15 from that report list Forest Service Survey and Manage species (both animals and plants) with potential to occur in the project area. The list of special status species is revised from time to time in accordance with procedures described in the potential ARARs. The most current lists will be incorporated into remedy planning at the time the ROD is prepared and, thereafter, will be amended as required.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

The Agencies will review and approve the final revegetation plan. Plants currently being considered for revegetation include alders, western white pine, Douglas fir, ponderosa pine, red osier dogwood, and vaccinium.

- The tailings and waste rock piles would be revegetated with the appropriate plant species to be determined during remedial design.
- Riprap placed along the existing Railroad Creek corridor and the relocated segment of Railroad Creek would be revegetated with appropriate riparian vegetation using tublings. The tublings would help protect shoots from browsing animals immediately after planting and are a cost-effective method of planting.

Forest Service weed prevention requirements will be followed to control the spread of noxious weeds during implementation of the proposed cleanup action. These practices include:

- Certifying that equipment used for the project is free of any weeds before the equipment is mobilized to the Site; and
- Inspection and approval for all gravel, fill, quarries, and borrow sources before use and transport. If weeds of concern are present, they will be treated before transport and use. Where weeds occur at borrow pit sites used for the project, the top 8 inches of soil will be removed, stockpiled, and treated for weeds.

Terrestrial monitoring would occur to verify remedy protectiveness, habitat restoration, and the success of revegetation. Details are included in the Conceptual Monitoring Program for the Site, included as Appendix H to the SFS.

5. **Animals**

a. Circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

birds: The attached Tables 4.6-7 and 4.6-8 from the remedial investigation report include listings of avian species observed and potentially occurring at and in the vicinity of Holden Mine.

mammals: The attached Tables 4.6-9 and 4.6-10 from the remedial investigation report include listings of all species observed, probably present, and possibly present at Holden Mine.

fish: Fish communities observed in Railroad Creek during the Remedial Investigation include the following: cutthroat trout (*oncorhynchus clarki* spp.), rainbow trout (*O. mykiss*), mottled sculpin (*Cottus bairdi*); and (in lower Railroad Creek) Kokanee salmon (*O. nerka*).

amphibians, lizards and snakes: The attached Table 4.6-6 from the Remedial Investigation report lists species likely to occur within the Railroad Creek drainage.

b. List any threatened or endangered species known to be on or near the site.

Special status species were reviewed in the Remedial Investigation report. Tables 4.6-11 and 4.6-12 from that report are attached and provide a listing of these species (both animals and plants) that may occur in the vicinity of the Site, along with their potential to occur in the project area. Tables 4.6-13 through 4.6-15 from that report list Forest Service Survey and Manage species (both animals and plants) with potential to occur in the project area. An updated list will be obtained at the time of the ROD.

c. Is the site part of a migration route? If so, explain.

The Site is located in the Railroad Creek valley. Valleys such as the Railroad Creek valley are unique habitats within the Chelan drainage basin as they have big meanders, a low gradient for long stretches, backwater areas, and could easily provide migration stopover habitat. The location of this forest at middle elevations in a low-gradient portion of a large glacial valley provides an ideal situation for development of abundant foraging resources, diverse structural components necessary to support reproduction of numerous species, and excellent cover and critical habitat connectivity to facilitate travel between seasonally available resources at low and high elevations. According to Mallory Lenz, a biologist with the Chelan Ranger District, sandhill cranes have been reported in the marshy area along Railroad Creek during their migration period. Deer also use the valley as a migration route.

d. Proposed measures to preserve or enhance wildlife, if any:

Proposed measures to preserve or enhance wildlife populations at the Site include the following:

- Improving water quality and habitat in Railroad Creek by the collection and treatment of groundwater (including portal drainage and seeps) sources above proposed cleanup levels at the Site and relocation of a heavily impacted segment of Railroad Creek adjacent to the tailings piles.
- Regrading to improve stability and pulling the tailings piles back away from the edge of the existing creek channels or relocating the creek channel for protection from flood damage would also improve the riparian corridor along Railroad Creek for wildlife. This increase in area of a riparian corridor along the tailings piles will help mitigate the removal of existing riparian habitat needed to construct and operate the water treatment facilities and the additional potential impacts of the barrier and collection system in the Lower West Area. Measures will be taken to minimize impacts on existing riparian habitat in these areas. Woody debris will be installed along the riparian corridor areas at the Site, and disturbed areas of the existing creek banks and relocated creek segment would be replanted to restore the riparian corridor habitat conditions.
- Source control measures (e.g., cleanup actions for the lagoon, mill building, maintenance yard, ventilator portal detention area, and other areas with soils above proposed cleanup levels) would be implemented to eliminate releases of metals to surface water and prevent direct contact with terrestrial ecological receptors.
- Tailings and waste rock piles would be revegetated to prevent erosion and direct contact, and reduce infiltration. This would have a secondary benefit of creating better habitat.
- Ferricrete formations in Railroad Creek would be broken up and the substrate de-compacted by mechanical ripping to restore aquatic habitat within the existing creek channel, and the relocated creek segment would be design to prevent formation of ferricrete in the new channel.
- The existing channel, typified by relatively straight high velocity sections with log cribbing and riprap berms at the Site, would be modified and the relocated channel

designed to reduce potential for future scour and erosion, based on results of a hydrologic/ geomorphic study during remedial design, and to satisfy potential ARARs.

- Terrestrial and aquatic biological monitoring would be conducted to determine whether the proposed cleanup action is protective and to assess biodiversity and species abundance. Details are included in the Conceptual Monitoring Plan for the Site, included as Appendix H to the SFS.

6. **Energy and natural resources**

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Final energy requirements and the best source(s) to provide energy for long-term operation and maintenance for the collection and treatment system would be determined during remedial design. This is likely to involve a combination of energy sources; such as locally generated hydroelectricity for running pumps with diesel generators as backup; and diesel- or gasoline-powered vehicles for maintenance of groundwater collection ditches and disposal of sludge from the water treatment facility.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No. The project would not create shaded areas that would affect nearby properties.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

The proposed water treatment facility would use large ponds for sedimentation following acid neutralization to remove dissolved metals, and solar drying to help dewater the sludge. Feasibility of these and other treatment system components needs to be verified during remedial design. The treatment systems would rely on gravity flow (rather than pumps) to the extent practicable.

7. **Environmental health**

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

The proposed cleanup action summarized in the Proposed Plan is intended to cleanup and control releases of hazardous substances and mitigate associated environmental health hazards resulting from past mining operations that have caused an ongoing release of hazardous substances from the Site.

Chemicals to be stored and used at the Site during construction and for the lifetime of the project include diesel and gasoline fuel for vehicles, and hydrated lime for neutralization of the acid mine drainage. Diesel fuel may be used to operate treatment system pumps for water and sludge. Lime would be used to reduce acidity in the groundwater treatment process. The Agencies estimate that long-term operation of the treatment system would

require an energy equivalent of about 34,700 gallons of diesel fuel per year. In the early years of remediation, an estimated 2,300 tons of lime would be used each year for neutralization of the acid mine drainage.

1) Describe special emergency services that might be required.

Normal medical emergency services that are typical of large construction projects could be required during construction of the proposed cleanup action. Provision of emergency services would be addressed in the site-specific construction health and safety plan. Since the Site is in a very remote location, contact with police, fire departments, or medical emergency responders would need to be via satellite phone.

2) Proposed measures to reduce or control environmental health hazards, if any:

Implementation of the proposed cleanup action would be performed in accordance with a site-specific health and safety plan, and a SWPPP. Remedial actions to address Site contamination are detailed in the Proposed Plan (this SEPA checklist is an attachment to the Proposed Plan).

b. **Noise**

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

The Site is located within the National Forest with limited local habitation. The predominant source of noise in the area currently consists of human-generated noises from Holden Village activities, including buses, motorized equipment and vehicles, and occasional chain saws, generators, and construction-related noise. These noises would not affect the remedial action.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Noise generated from the project has the potential to impact both people and wildlife. The DFFS provides some preliminary analysis of noise from construction and operation activities associated with implementation of different remedy alternatives, particularly with regard to impacts to Holden Village. While this preliminary analysis did not include the proposed cleanup action, construction and operation activities are similar and, therefore, the DFFS analysis is relevant and is discussed below.

In the short term, noise associated with traffic, heavy construction equipment (dozers, excavators, loaders, compactors, and trucks), and generators would be created during construction of the remedy, for portions of 3 years, during typical 5- to 6-month construction seasons. No construction work for the proposed cleanup action is anticipated to occur at night. Most vehicle traffic would be diverted around Holden Village. Peak construction noise levels at the Holden Village perimeter were estimated in the DFFS to be around 53 decibels ("moderate noise"). The average construction noise level at the

Village perimeter was estimated to be around 47 decibels ("faint noise"). Noise from heavy construction equipment would occur during tailings pile and waste rock regrading, construction of the treatment facilities, construction of the groundwater barrier wall and collection system, source control (e.g., removal of contaminated soil) in various areas of the Site, demolition of the mill building, creek relocation, and other remedial actions taken at the Site. Additionally, noise and vibration from potential blasting where the relocated channel is anticipated to be in bedrock adjacent to Tailings Pile 2 will be noticeable at Holden Village during construction. Further details on the remedial actions are described in the Proposed Plan. Noise and vibration from the borrow pit and riprap quarry operations may also be noticeable at Holden Village during construction depending on the locations selected, and will likely have some potential impact on wildlife surrounding these areas.

In the long term, noise would be associated with operation of the treatment plant, sludge disposal, and maintenance of the remedial action. The treatment plant will likely require a generator (diesel or hydroelectric) that will be necessary for some treatment processes, such as pumping water and sludge disposal. Fuel and lime would be delivered to the treatment facility by truck on a regular basis as well. Regular maintenance activities would also include construction vehicles (such as a backhoe) for maintaining the collection system and upgradient diversion swales.

3) Proposed measures to reduce or control noise impacts, if any:

Measures to reduce or control noise impacts to Holden Village from the project include:

- A majority of vehicle traffic would be diverted around Holden Village during construction of the Proposed Plan.
- Construction activities are anticipated to be limited to daytime operations.
- The larger of the treatment plants (i.e., east treatment plant) would be located over a half mile from the eastern edge of Holden Village. The west treatment plant would be located approximately 1000 feet west of the western edge of Holden Village.
- For the east treatment plant trucks delivering fuel and lime would not have to go through the village. For the smaller west treatment plant trucks delivering fuel and lime may use access roads established during construction to bypass the village and/or may need to pass through the village.
- Generator(s) associated with the treatment plants would be located inside a sound dampening structure.
- The location of the workers' camp has not been determined but may be located away from Holden Village in the baseball field area, unless this location would interfere with the proposed cleanup action, or potentially within Holden Village, if amenable to Holden Village and the USFS per the conditions of Holden Village's special use permit. Another, smaller, potential camp associated with the construction unloading and staging area at Lucerne.

Measures to reduce or control noise impacts to wildlife from the project would include annual wildlife surveys and timing restrictions during high impact activities. Treatment activities causing noise above ambient levels and located within 1/4 mile of specified areas (e.g. suitable spotted owl nesting, roosting, and foraging habitat) would be conducted outside of the primary nesting season (March 1 - July 31), unless surveys have been completed and for example, spotted owls are not located within the suitable habitat. Surveys are conducted over a two-year survey period, and are considered current for two years following completion of the surveys. If any of the specified areas would actually be removed or disturbed under the remedy, then the timing restriction changes, and activities would be revised accordingly. Such measures would be implemented in accordance with the Land and Resource Management Plan for Wenatchee National Forest as Amended by Pacific Northwest Forest Plan (NWFP, 1994) and subsequent amendments of the NWFP (2001, 2004, and 2007), and other potential ARARs.

8. **Land and shoreline use**

a. What is the current use of the site and adjacent properties?

The Site is situated on National Forest System Lands administered by the Okanogan-Wenatchee National Forests, and on patented mining and mill site claims (private land) owned by Holden Village, Inc. Affected areas of public land would continue to be managed as part of the National Forest following implementation of the proposed cleanup action. The Forest Service has withdrawn the area around

the Site from mineral entry. The withdrawal includes approximately 1,265 acres of National Forest land from location and entry of new mining claims under the United States mining laws [30 U.S.C. Ch. 2] (1994). A legal description of the mineral withdrawal is provided in BLM Public Land Order No. 7533 [67 FR 50894].

Holden Village, Inc. currently occupies and runs a non-denominational religious retreat in the former mining company town under a special use permit from the Forest Service. This community includes approximately 60 Holden Village staff that reside in the Village year round, and during the summer months, the combined staff and visitor population can be on the order of 500 people at any given time. The Holden Village community relies on their incoming and outgoing visitor population to contribute to the ongoing maintenance work necessary to sustain operations and various programmatic services essential to their ongoing mission. In this way, the community is very unique and fragile, and cannot remain viable if made to endure long stretches of construction work where visitors are not able to be accommodated. Holden Village has indicated it is in their best interest to temporarily close during peak remedy construction periods, and then resume operations at a similar level after implementation of the proposed cleanup action. Excluding visitors and staff of Holden Village, seasonal visitors include recreational users of the National Forest (e.g., hikers, fisherman, hunters, horse campers). After construction, it is expected that the Railroad Creek Watershed will continue to be occupied by at most a few hundred permanent residents, along with seasonal visitors on the order of 5,000 to 10,000 persons each year.

The Village utilizes portions of the former mine operations area of the Site (primarily on the patented claims) for various infrastructure, including a vehicle maintenance yard and garage, hydroelectric power plant, potable water treatment facility, recycling, solid waste storage, firewood staging area, and portable sawmill. The Village uses the surface of the West Waste Rock Pile for the storage of miscellaneous materials and solid waste. There are several hiking trails throughout the area, and Holden Village residents and/or visitors use parts of the mill site and tailings piles for recreational purposes on an occasional basis.

b. Has the site been used for agriculture? If so, describe.

No.

c. Describe any structures on the site.

Structures located on the south side of Railroad Creek at the Site include the mill building, a small building that was formerly operated by Holden Village as a museum, Holden Village's maintenance shop, hydroelectric power plant, and potable water treatment facility. There are approximately 25 Holden Village structures located on the north side of Railroad Creek. See Figure 3 of the Proposed Plan for building location and approximate footprints.

d. Will any structures be demolished? If so, what?

The former mill building would be demolished in whole or in part as needed to remove contaminants, as described in the proposed cleanup action. The mill building burned after

the mine closed, leaving exposed steel beams, intermittent concrete walls, foundation elements, and unprocessed ore and mineral salts present on the surface of abandoned tanks and other equipment. Some demolition will be necessary within an area of one to two acres to safely remove soils and mineral processing residuals that are above proposed cleanup levels.

e. What is the current zoning classification of the site?

The Chelan County Code is potentially applicable to the private portions of the Site and not applicable to USFS federal lands. The majority of the Site is located within the Wenatchee National Forest and is subject to the Wenatchee Forest Land and Resource Management Plan. For the privately owned portions of the Site, the current zoning classification is commercial forest, according to the Chelan County Planning Department.

f. What is the current comprehensive plan designation of the site?

For the private portions of the Site, the current comprehensive plan designation is commercial forest, according to the Chelan County Planning Department.

g. If applicable, what is the current shoreline master program designation of the site?

Not applicable for the Site.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

Formal delineation studies have not been conducted, but the area downstream of Tailings Pile 3 includes riparian wetlands. The Railroad Creek valley in the vicinity of Holden is a glacially carved, broad, relatively low-gradient valley. Photos and topographic maps from prior to development of the Holden Mine depict a meandering stream with a well developed floodplain and multiple channels in the area where the mine was constructed. Where the tailings piles are currently located, the valley floor was a relatively flat, wetland meadow. Farther upstream from the tailings piles, the stream channels were interwoven through riparian forest. The valley is bounded on both the north and south sides by steep mountainsides covered with conifer forest on undisturbed slopes, and deciduous vegetation in areas disturbed by humans and by natural processes, such as avalanche and landslide paths. This forest provides habitat for a multitude of riparian-dependent species, and important resources for both riparian and upland species.

The area where the mine operated is the largest of only a few floodplain valley reaches in the Railroad Creek drainage. Moreover, this is one of the few floodplain valleys in the entire Lake Chelan drainage, and so it is important to the overall ecology of the Lake Chelan Basin.

i. Approximately how many people would reside or work in the completed project?

The residential population of the Site, i.e., Holden Village, are not expected to be altered significantly after construction of the proposed cleanup action is completed (see Section B.8.a. above). Treatment plant operation and Site monitoring are expected to require one person working part-time under normal conditions, with up to several people potentially involved on occasions for monitoring or maintenance activities.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Not applicable.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

Remedial actions associated with the proposed cleanup action are expected to enhance the existing and projected land uses. Treatment of impacted groundwater, source control actions, and planned vegetation measures are expected to beneficially impact aquatic and terrestrial species.

The Agencies understand that Holden Village, Inc. has legitimate concerns for the viability of its operations if remedial construction results in closure or significantly constrains operations of the Village for more than two consecutive years, or if there is a second closure within five years of the conclusion of the first construction period. The Agencies are sensitive to this request. Ultimately, Intalco will develop a proposed remedy construction schedule, which is subject to Agency approval. However, the Agencies will strive to ensure that the schedule is consistent with the expressed preferences of Holden Village, and the preferred alternative (Alternative 14) proposes implementing remedy construction in two phases. Under this approach, a two-year phase one would be followed by a five-year break before phase two.

9. **Housing**

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

No permanent housing would be provided for any income category. Remedial construction may include a temporary construction workers' camp in an area that would not interfere with the cleanup. Location of staging area(s) and camp will be determined during remedial design. Estimates by the Agencies indicate the camp would house a peak population of about 50 people for up to 5 to 6 months annually for construction over the Phase I (2-year) and Phase II (1-year) construction periods.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

No housing would be eliminated with implementation of the proposed cleanup action.

c. Proposed measures to reduce or control housing impacts, if any:

The temporary construction camp would be removed following completion of the proposed cleanup action. No permanent impacts are expected to be associated with providing temporary housing during construction.

10. **Aesthetics**

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

Single-story buildings associated with the east and west treatment plants would be added to the Site. The building has not yet been designed/purchased. Other structures would include lime storage and generator facilities associated with the east and west treatment facilities. Dimensions of these structures would be determined during remedial design. The east treatment plant would be located approximately one half mile east from Holden Village, and the west treatment plant would be located approximately 1000 feet west from Holden Village. Portions of the east facility may be visible from the road, and portions of the west treatment facility will likely be visible from the road.

b. What views in the immediate vicinity would be altered or obstructed?

No views are expected to be obstructed by the treatment plant complex.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Vegetation screens would be maintained during construction between the treatment plants and the main road to minimize potential aesthetic impacts.

11. **Light and glare**

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

The constructions season for the proposed cleanup action is anticipated to occur over periods of 2 years for Phase I and 1 year for Phase II construction, approximately 5 to 6 months per year to avoid winter conditions at the Site. Lighting for construction activities may be required early in the morning or late in the evening, depending on the type of activity (e.g., maintenance of construction equipment) and time of the year the work is occurring.

No artificial outdoor lighting is anticipated to be needed once construction of the proposed cleanup action is complete.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

None expected.

c. What existing off-site sources of light or glare may affect your proposal?

None.

d. Proposed measures to reduce or control light and glare impacts, if any:

N/A

12. **Recreation**

a. What designated and informal recreational opportunities are in the immediate vicinity?

The Site is located on National Forest System Lands and is bounded to the west, north, and south by the Glacier Peak Wilderness Area. Typical recreational activities of this National Forest land include hiking, fishing, hunting, camping, etc. Holden Village residents and/or visitors use parts of the Site and tailings piles for recreational purposes on an occasional basis.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No existing recreational uses expected to be permanently eliminated by implementation of the remedy. The Agencies anticipate there would be temporary trail closures as well as interruption of some Holden Village activities on the south side of Railroad Creek during construction.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Limits and duration of temporary trail closures and other curtailment of Holden Village activities on the south side of Railroad Creek would be determined during remedial design. Following implementation of the remedy, fish populations in Railroad Creek are expected to increase, and could lead to increased recreational use of the area.

13. **Historic and cultural preservation**

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

A "Draft Determination of Eligibility Report," dated 1991, was prepared by the USFS and nominated the Holden Mine Historic District to the National Register of Historic Places, focusing on the Holden Mine mill and mine complex with its associated buildings and features, the Holden Village townsite, and the outlying properties known as Honeymoon Heights and the Winston home sites. This report recommended that the District be expanded to include sites at Lucerne. It was submitted in 2001 to the State Historic Preservation Office. In May 2001, the State Historic Preservation Office (SHPO) concurred that Holden Village was eligible, but did not indicate whether the entire Holden Mine Historic District was eligible. Concurrence on the eligibility of the district is still pending.

Any proposed modifications to the structures and/or immediately surrounding areas are required to be reviewed by the USFS and SHPO. A Section 106 report will be prepared for the proposed cleanup action.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

Proposed historic landmarks including the Holden Mine mill and mine complex with its associated buildings and features, the Holden Village townsite, and Honeymoon Heights and the Winston home sites are located within or adjacent to the Site. An assessment of the Holden Mine is provided in the historic district nomination document.

c. Proposed measures to reduce or control impacts, if any:

Any proposed modifications to the structures and/or immediately surrounding areas are required to be reviewed by the USFS and SHPO. Demolition of the derelict mill building will be limited to what is needed to safely perform cleanup of residual processing wastes and impacted soil under and around the mill structures.

14. **Transportation**

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

The Site is accessed by a dirt road that originates at Lucerne and extends west on the north side of Railroad Creek (See Figure 2 of the Proposed Plan). Lucerne is located on Lake Chelan at the mouth of Railroad Creek and can only be reached be reached via a passenger ferryboat service, or by private boat or float plane.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

No public transit is available within or connecting to Holden. Lucerne is accessible by commercial ferry on a regular basis, the ferry dock is about 11 miles east of the former mine.

c. How many parking spaces would the completed project have? How many would the project eliminate?

No parking is eliminated as part of this project. Holden Village will be able to continue to use the existing vehicle maintenance yard, which would be paved under the proposed cleanup action.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

The Agencies anticipate that improvements and maintenance to the existing road between Lucerne and Holden Village would be necessary. For example, the bridge at Ten-Mile Creek would need to be improved to withstand the increased traffic load associated with construction traffic and equipment. Also the surface of the dirt road would require gravel application and grading after and/or during construction of the proposed cleanup action. Improvements will also need to be made to existing roads at the Site. A bridge would also be constructed across Railroad Creek at the east end of Tailings Pile 3. This bridge may be temporary for use during construction of the proposed cleanup action, or could be permanent, subject to determination by the Agencies during remedial design.

A gravel-surfaced maintenance access road would be constructed along the toe of the tailings pile associated with the groundwater collection system. This road would be

accessible only for construction in the short term, and maintenance and monitoring activities for the proposed cleanup action in the long term.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

Based on the remote access to the Site, construction and operation equipment, fuel, and lime would be transported by barge from Chelan to Lucerne where it will then be transported up valley to the Site by truck. The barge use required for this project could impact residents around Lake Chelan by increasing commercial traffic on the lake, and possibly by decreasing the occasional or overall availability of barges for non-construction activity. The greatest potential impacts would occur during construction of the remedial action, a 5- to 6-month construction season each year over a period of about two years for Phase I construction and an additional year for Phase II construction, as heavy equipment and supplies are being transferred to and from the Site. Impacts after construction of the remedial action would be decreased substantially as barges would be used for fuel and lime delivery to the Site, likely varying between one delivery per week and one delivery per month.

Construction workers can reach the Site by taking a passenger ferry boat service, private boat, or float plane to Lucerne and then by truck or other vehicle to Holden.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

Operation and maintenance of the completed project are anticipated to require less than one vehicular trip per day. Frequency of deliveries of fuel and lime would depend on final design and supply arrangements, but would likely vary between one delivery per week and one delivery per month.

g. Proposed measures to reduce or control transportation impacts, if any:

The bridge to be constructed across Railroad Creek at the east end of Tailing Pile 3, would allow construction traffic to access the former mine operations area of the Site while avoiding driving through Holden Village. The Agencies also expect that all traffic to a temporary construction workers camp (for example if in the baseball field area west of Holden Village), and to a potential construction staging area in the former Winston townsite, could also be routed across this bridge, south of the mine and then across the existing Holden Village vehicle bridge, to avoid construction traffic through the Village.

Construction would include a spill prevention, control, and countermeasure (SPCC) plan to reduce risks and mitigate potential impacts of potential fuel spills or other material used in construction and subsequently during long-term operations of the water treatment system.

15. **Public services**

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

No increase anticipated.

b. Proposed measures to reduce or control direct impacts on public services, if any.

Not applicable.

16. **Utilities**

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

There is no commercial utility or telephone service to the area. Holden Village's electricity is supplied by a privately owned hydroelectric generator powered by diversion of a portion of the Copper Creek flow. Holden Village obtains potable water from Copper Creek upstream of the Site. Holden Village uses intensive recycling and composting for solid waste management. Holden Village wastewater is treated with a privately owned and maintained septic system located east of the village.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

During construction of the proposed cleanup action, temporary utilities will need to be supplied to the camp used for construction workers, including water, electricity, and a septic system. Water may be obtained through the current Holden Village system or via withdrawal from Railroad Creek upstream of the Site. Electricity to the camp would likely be provided using diesel generators. The Holden Village septic system may be used to handle the wastewater generated by the camp, or alternative systems may be needed for temporary use during the Phase I (2-year) and Phase II (1-year) construction periods.

The proposed cleanup action includes construction, use, and closure of limited purpose landfills for disposal of solid waste and contaminated soils generated during the cleanup, and for long-term disposal of sludge from the water treatment facility.

Additional utilities are required for long-term use to power the treatment facility, e.g., to pump water and sludge from the treatment facility to a limited purpose landfill on the tailings piles. Electrical energy for operation of the treatment facility would come from diesel, liquid petroleum gas, or hydroelectrical generators, as determined during remedial design.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Valerie Bound

Valerie Bound, Section Manager
Toxics Cleanup Program

Date Submitted: 6-30-10

TO BE COMPLETED BY APPLICANT

EVALUATION FOR
AGENCY USE ONLY

D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS

NOT APPLICABLE

(do not use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

   Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

   Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

   Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

   Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

   Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

   Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

Attachments:

The following tables from the Draft Final Remedial Investigation Report, Holden Mine Site (Dames & Moore 1999) are included as attachments to this checklist.

Table 4.6-5 Common Plant Species
Table 4.6-6 Herpetofauna Likely to Occur within the Railroad Creek Drainage
Table 4.6-7 Master List of Avian Species Observed and Potentially Occurring at and in the Vicinity of Holden Mine
Table 4.6-8 Bird Species Observed by Survey Area
Table 4.6-9 Master List of All Species Observed, Probably Present and Possible Present at Holden Mine
Table 4.6-10 Mammal Species Observed, by Survey Area, at Holden Mine
Table 4.6-11 Species of Federal Concern which may Occur in the Vicinity of Holden Mine, as Indicated by U.S. Forest Service, August 13, 1997
Table 4.6-12 Special Status Species in the Project Area
Table 4.6-13 U.S. Forest Service Survey and Manage Component 2 Mollusk Species with Potential to Occur in the Project Area
Table 4.6-14 U.S. Forest Service Survey and Manage Component 2 and Protection Buffer Plants with Potential to Occur in the Project Area
Table 4.6-15 Survey and Manage Species for which No Survey Protocols are Available due to the Unique or Unknown Life History of these Species