

**RUTH MINE  
INITIATION OF CERCLA INVESTIGATION  
MEMORANDUM**

**I. PURPOSE**

The purpose of this Memorandum is to document, pursuant to the Guidelines of the National Oil and Hazardous Substance Contingency Plan (NCP), 40 CFR 300, et seq., the decision to initiate a CERCLA investigation, and such further CERCLA actions as may be subsequently determined appropriate, as authorized by Section 104 (42 USC 9604) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA; 42 USC 9601 et seq.), and Executive Order 12580, 52 Federal Register 2923-26 (January 23, 1987).

A release, or threat of a release, of hazardous substances, pollutants or contaminants that potentially pose a threat to public health or welfare or the environment, has occurred or may occur at the Ruth Mine (Site) on and/or from lands under the jurisdiction, custody, or control of the USDA Forest Service, Willamette National Forest (National Forest System or NFS lands).

**II. SITE CONDITIONS AND BACKGROUND**

**A. Site Location and Historical Activities**

**Location Description** – The Site is located approximately 8 aerial miles northeast of Elkhorn, OR at an elevation of 2600 feet above mean sea level (MSL). The Site is 2 miles east of Jaw Bone Flats, along Forest Road 2209. The Site is on National Forest System lands within the Opal Creek Scenic and Recreation Area and is administered and managed by the Willamette National Forest. The area was withdrawn from mineral entry when incorporated into the Scenic Recreation Area, subject to valid existing rights (P.L. 104-333). The Site is within the North Santiam Mining District. The Site location and legal description are as follows:

- Lat./Long: 44° 51' 11"N/122° 11' 23"W
- Legal: Willamette Meridian, T8S, R5E, S27
- USGS quadrangle: Battle Ax

**Site Description** – The Site consists of three adits and several waste-rock dumps. The 4<sup>th</sup> Level consists of one adit with a steel door on the portal and a second adit with a partially collapsed portal. The second adit connects to the main adit 20 feet inside the side drift. The 5<sup>th</sup> Level adit has a wooden door on the portal.

**Historical Activities** – Historical activities for the mine are as follows:

- Prior to 1902 - The Ruth Mine was formerly known as the Amalgamated Mine and was operated by the Lewis & Clark Mining & Milling Co. This company located five claims south of Battle Ax Creek, a tributary of the Little North Santiam River. By that date, they had opened several hundred feet of adits on two levels.
- 1920 - the Amalgamated Mining & Milling Co. took over the original claims and located 18 more.
- 1929 to 1934 - a combined effort of Amalgamated and Columbia Mines Development Co. constructed a road to the mine, erected several buildings and a mill, and shipped nine carloads of crude ore and mill concentrates during 1931 and 1932.
- 1939 - the mine was purchased by the Pacific Smelting & Refining Co. Total production and ore values were not reported.
- 1991 – The Amalgamated Mill site came under CERCLA removal action. The mill processed some of the ore from the Ruth Mine.

A total development of more than 4000 feet is reported, mostly on the No. 4 (Ruth #1) and No. 5 levels. About 200,000 tons of ore reserves, containing about 6 percent zinc, are reported to have been blocked out. Various engineer reports on the property estimate reserves of from 200,000 to 800,000 tons that will average from 4.33 to 11 percent zinc and one percent lead in blocks of ore with an average thickness of about 10 feet. Gold, silver and copper values are usually low. (Webber, 1995)

**B. Site Characteristics**

The mine geology consists of Andesite cut by a porphyritic rhyolite dike in the No. 4 Level. Mineralization occurs in a fault zone from 1 to more than 60 feet thick, trending N 55° W, and dipping 55° to 70° NE. It contains crushed rock, clay gouge, chlorite, sericite, calcite, quartz, sphalerite, galena, chalcopryrite, and pyrite. Lenses of high-grade sulfide (mainly sphalerite) dip more steeply than the enclosing fault zone. Thickness of 15 ore blocks is from 5 to 15 feet. (Brooks & Ramp, 1968).

The ore was processed at two mill sites, one known as the Amalgamated mill, which was adjacent to Battle Axe Creek. The second mill, Starvation Mill, was located at Jaw Bone Flats, a private land in-holding at the confluence of Battle Axe and Opal Creeks. Ore from the Ruth #1 Mine was transported to the Amalgamated mill by rail/tram along corridors, which are partially overgrown.

The waste rock pile for Level 5 was used to construct the haul roads. Approximate depth of this material is 3 feet and approximately 16 feet wide. It is unclear as to the exact length of road that was built from waste rock material. However, based on visual observations of the area, an approximate volume of material in the roadway, ore car rails, and miscellaneous piles is 945cy. Battle Axe Creek is approximately 30 to 40 feet below the road and the adit drainage discharges into the river. There are signs of material leaving the site and migrating down to the river.

The waste material for Level 4 is directly in the drainage of a small tributary. Water in the drainage was seen disappearing in the rubble and then reappearing further down gradient. A culvert, approximately 36 inches in diameter, has been washed out, indicating this tributary does carry good flows during spring runoff. The waste rock material in this area is hard to quantify because of it being scattered down gradient. An estimate would be 4500cy.

#### **B. Release or Threatened Release into the Environment of a Hazardous Substance, Pollutant, or Contaminant**

An Abbreviated Preliminary Assessment (APA) has been completed at the Site and it was determined that a release has occurred. There are numerous metals that exceed various State and Federal regulations and guidelines. However, the main metals are arsenic (598 mg/kg), chromium (4339 mg/kg), lead (6490 mg/kg), and manganese (28,288 mg/kg).

#### **C. Actions Taken on the Site**

Recent actions taken at the Site include:

1. *Abbreviated Preliminary Assessment, USFS 10/04*

### **III. PROPOSED ACTIONS AND ESTIMATED COSTS**

The proposed action for the Site is to initiate CERCLA. In compliance with the NCP, a Site Inspection (SI) will be prepared. The SI will evaluate the Site for releases, quantify the material impacted, and develop both human and ecological risk assessments.

The actual and anticipated costs for the various aspects of the project are uncertain at this time in some areas as valuable data is missing. However, an estimate would be:

1. Abbreviated Preliminary Assessment (APA) - \$3500
2. Site Inspection – Approximately \$105,000
3. Potentially Responsible Party Search - Approximately \$12,400
4. EE/CA – Approximately \$35,000
5. Removal Action – Approximately \$800,000
6. Monitoring, three years – Approximately \$75,000

### **IV. ADMINISTRATIVE RECORD AND COMMUNITY RELATIONS**

Pursuant to 40 CFR 300.415(m), Dennis Boles, Statewide On-Scene Coordinator (OSC) for Oregon, will be the OSC and Rod Stewart of the Detroit Ranger District, Willamette National Forest, will serve as Spokesperson for the project.

A Community Relations Plan will be developed for this project. The Administrative Record for any response action selected will be compiled and made available during regular business hours at the office of the Detroit Ranger District, Willamette National Forest, Detroit, Oregon. A Notice of Availability of the Administrative Record will be published in local newspapers.

## **V. DECISION**

By this Memorandum, I am initiating CERCLA activities at the Ruth Mine as appropriate.

By copy of this Memorandum, we are formally notifying the State of Oregon and EPA of our finding of the appropriateness of initiating CERCLA activities at the Site.

*S/Richard W Sowa*  
Richard W Sowa  
Director of Engineering  
Pacific Northwest Region

Date: 02/23/05

cc:  
Oregon DEQ  
EPA