U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Sierra Zinc Mine & Mill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region X

Subject: **POLREP #2**
Initial site set-up and mill demolition
Sierra Zinc Mine & Mill
WAN001002396
Northport, WA
Latitude: 48.7745000 Longitude: -117.6684000

To:
From: David Rees, On-Scene Coordinator
Date: 10/15/2014
Reporting Period: 10/13/2014 - 10/17/2014

1. Introduction

1.1 Background

Site Number:	10MC	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	8/28/2014
Response Authority:	CERCLA	**Response Type:**	Time-Critical
Response Lead:	EPA	**Incident Category:**	Removal Assessment
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:		**Start Date:**	
Demob Date:		**Completion Date:**	
CERCLIS ID:	WAN001002396	**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category
Time-Critical Removal Action

1.1.2 Site Description
The Sierra Zinc Mine and Mill is a former lead and zinc mine located approximately 24 miles north of Colville,Washington and approximately 17 miles south of Northport, Washington. Features at the site include a tailings pile, a waste rock pile, dilapidated mill and barn buildings, assay office, and a flowing adit. The South Fork Deep Creek flows adjacent to the site.

The mine was in operation sporadically from 1906 to its closure in the 1950s. During operations at the site, a large quantity of tailings were generated and deposited north of the mill building. The tailings pile covers approximately 25 acres at the site.

In 2001, START completed preliminary assessment/site inspections (PA/SIs) at a number of mine and mills in the Upper Columbia River area. During the PA/SI, samples were collected from the tailings pile and waste rock pile for off-site fixed laboratory analysis.

In 2003, the Washington State Department of Natural Resources (WDNR) completed an Inactive and Abandoned Mine Land Investigation at the site. Two samples were collected from the tailings pile for off-site fixed laboratory analysis. In addition, surface water samples were collected from the on-site flowing adit in September 2001 and June 2002 for off-site fixed laboratory analysis.

The Removal Site Evaluation (RSE) was conducted July 8 through 11, 2013. During the RSE field event, START screened tailings, soil, and waste rock using a field-portable x-ray fluorescent (XRF), installed borehole on the tailings pile to assist in determining the volume of material, collected 24 samples for off-site fixed laboratory analysis, collected surface water from the on-site adit, collected surface water and sediment from nearby South Fork Deep Creek, and sampled an adjacent residential drinking water well. A subset of the soil samples were also submitted for Synthetic Characteristic Leaching Procedure (SPLP) to determine if the material was leachable to groundwater.

1.1.2.1 Location
The site is located in Stevens County, Washington at Latitude: 48.7745000 Longitude: -117.6684000

1.1.2.2 Description of Threat
Mill Building
The dilapidated mill building is present at the site, and the poor repair of the building created a physical

threat that impeded entry; therefore, this source has the greatest level of uncertainty regarding the level and extent of contamination that may be present within the confines of the building. Because of the poor repair of the building it may be necessary to demolish the structure. The integrity of the structure has been compromised from weather and lack of care.

While SPLP sample results indicate the contamination associated with the mill building is not readily leachable, the levels of concentrations in the total metals results indicate a human health risk through direct contact, inhalation, and/or ingestion. The area around the mill building is utilized by the local residents for recreational purposes (e.g. dirt bike and all-terrain vehicle riding). The highest concentrations of metals at the site were detected in the samples collected from around the mill buildings.

Tailings Pile
A large tailings pile is present to the north of the former mill building. The slopes on the eastern boundary of the pile are very steep. There is no vegetation except a single tree, which was planted and is cared for by the property owner, on the majority of the surface of the pile. Vegetation is present on the outer edges of the pile where XRF concentrations were lower; however, the lack of vegetation on the surface of the pile could be the result of metals concentrations of a lack of amenable soil for plants to take root.

The results of the SPLP analyses do not indicate that metals in the tailings are readily mobile; however, the concentrations of total metals indicate a human health risk is posed through direct contact, inhalation, and/or ingestion. The tailings pile is used for recreational purposes and an access road on the northern portion of the pile is uitlized to access logging near the site.

Waste Rock Pile
A waste rock pile with steep slopes is present adjacent to the dilapidated mill building. No SPLP samples were collected from the waste rock pile. This sources poses a potential risk through direct contact, inhalation, and/or ingestion. Recreational activities are conducted on and around the waste rock pile.

Adit
A flowing adit is present at the site. The adit poses a physical threat.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

Mill Building
Samples collected from the soils surrounding the mill building indicate the presence of lead at concentrations that exceed the Removal Management Level (RML) as well as the Washington Model Toxics Control Act (MTCA) Method A cleanup level in both the EPA and RMC samples. Additionally, cadmium, thallium, and zinc were detected at concentrations that exceed the RML in at least two of hte mill soil samples. Finally, arsenic and mercury were detected at concentrations that exceeded the MTCA Method A cleanup levels in at least two the samples, but did not likewise exceed the RML.

Tailings Pile
Sample results indicate the presence of lead at concentrations that exceed the RML and the MTCA Method A cleanup level. Additionally, arsenic, cadmium, and thallium were detected at concentrations that exceeded the RMLs in at least one sample, and cadmium, and mercury also exceeded the MTCA Method A cleanup level in at least one sample that did not likewise exceed the RML.

Waste Rock Pile
No samples were collected from the waste rock pile as part of the RSE investigation. Sample results from the PA/SI were used to evaluate contamination associated with the waste rock pile. Sample results indicate the presence of lead at concentrations that exceed the RML and the MTCA Method A cleanup level in all samples collected. Additionally, cadmium was detected at concentrations that exceed the MTCA Method A cleanup level in all samples collected; however, these concentrations did not likewise exceed the RML.

Adit
Sample results indicate the presence of total and dissolved cadmium, total and dissolved lead, and total and dissolved zinc at concentrations that exceed at least one of the screening criteria. In addition, sediment was collected from the adit and indicates the presence of arsenic, cadmium, copper, and silver at concentrations that exceed at least one screening criteria.

South Fork Deep Creek
Surface water and sediment samples were collected upstream and downstream of the site on South Fork Deep Creek. Sample results indicate the presence of lead at concentrations that exceed at least one screening criteria in both surface water samples collected by START. Sample results indicate the presence of dissolved zinc at concentrations that exceed at least one screening criteria in the upgradient sample collected by RMC. Sediment sample results did not indicate the presence of any constituents at concentrations that exceed any of the screening criteria in any of the sediment samples collected from South Fork Deep Creek.

Groundwater Sampling
START collected a groundwater sample of opportunity from the adjacent residence. Sample results did not indicate the presence of any constituents at concentrations that exceeded any of the screening criteria. RMC collected groundwater samples from two nearby residential drinking water wells (neither of which were from the same location as the START sample). Sample results indicate the presence of total and dissolved arsenic, total and dissolved cadmium, dissolved copper, and total and dissolved iron at concentrations that exceed at least one of the screening criteria in at least one sample location.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

During the reporting period the Responsible Party consultant [Resource Management Consultants (RMC)]

and their contractor mobilized personnel and equipment to the site on Monday 13 October. Beginning on 14 October, the contractor [Aapex Construction, Inc of Coeur D'Alene, ID(ACI)] began excavation of the construction access road, staging area, and decontamination pad. Soil was screened using a field portable x-ray fluorescence (XRF) until. Excavation was continued until average concentrations of lead using the XRF was below 250 milligrams per kilogram (mg/kg). Clean fill from the north borrow soil area was brought in to fill the staging area and construction access road. Soils from the borrow area were screened with a portable screen to segregate larger material. The larger material (rocks) were used to construct the decontamination pad and the entrance to the construction entrance road. At the completion of the excavation activities, RMC collected a 5-point composite each of the staging area and the construction entrance access road. Excavated soil materials were staged on the tailings pile.

Beginning on 14 October, ACI began segregating the scrap metal and wood in the central collapsed portion of the former mill building. Demolition of the central and western portion of the mill building was completed by 15 October. Drums were discovered inside the former mill building. These drums were assessed for structural soundness and an approximate amount of contents. Drums that were not structurally sound were stabilized prior to staging. The drums were initially staged in the western open portion of the former mill building. Prior to demolition of this portion of the former mill building, the drums were moved to another staging area and were covered with a plastic tarp in preparation for off-site shipment and disposal. Water was sprayed on the structure during demolition activities to reduce potential fugitive dust emissions. In order to determine the effectiveness of the water suppression, air samplers were deployed around the perimeter of the excavation. On 16 October, the western most intact portion of the former mill building was demolished. Dust suppression during this activity was minimal due to personnel health and safety concerns of how and where the structure would fall. As soon as the building was down, water suppression activities of the mill continued. Wood debris was hauled by dump truck to the tailing pile for staging in preparation for the wood chipper.

On 16 October, a scrap metal recycler from Kettle Fall, WA arrived at the site to haul off segregated scrap metal that was sorted during mill building demolition activities.

2.1.2 Response Actions to Date

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

Anticipated activities include continued segregation of scrap and wood of the former mill building to the staging area on the tailings pile. The wood chipper is scheduled to arrive at the site on 27 October. Upon completion of the removal of wood debris from the former mill building, excavation of contaminated soil associated with the former mill building will follow. The contaminated soil will be staged on the tailings pile in preparation for placement in the on-site repository.

2.2.1.1 Planned Response Activities

2.2.1.2 Next Steps

2.2.2 Issues

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

No information available at this time.

4. Personnel On Site

No information available at this time.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

6.1 Internet location of additional information/report

6.2 Reporting Schedule

Weekly updates will be provided to the EPA by the RP Consultant
Monthly reports will be provided to the EPA by the RP Consultant.

7. Situational Reference Materials

No information available at this time.