

ABBREVIATED PRELIMINARY ASSESSMENT

PYX MINE AND MILL



Wallowa-Whitman National Forest
Grant County, OR

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EXECUTIVE SUMMARY

The Forest Service performed an Abbreviated Preliminary Assessment for the Pyx Mine and Millsite (Site) to determine the need for further site characterization. The Site is located approximately 6 aerial miles southwest of the town of Granite, Oregon. The Site is situated on moderate to steep side slopes. The site consists of an open adit, waste rock dumps, tailings pond, and remains of a mill.

A Niton XRF unit was used for In Situ field screening of material from the waste and tailings pile. Water and sediment samples were not collected as part of this investigation.

Numerous chemical elements exceeded either State or Federal regulations or guidelines (Appendix A). However, the most notable elements of concern are arsenic (595 mg/kg), lead (1720 mg/kg), and chromium (924 mg/kg), which exceed EPA Region IX Preliminary Remediation Goals (PRG) as to acceptable industrial levels in soil.

The open portal presents a physical hazard associated with the Site.

Based on the environmental and physical hazards associated with the Site, it is recommended that a Site Inspection (SI) be performed.

1.0 INTRODUCTION

An Abbreviated Preliminary Assessment (APA) was performed by the US Forest Service in accordance with the EPA “Guidance for Performing Preliminary Assessments Under CERCLA”, EPA “Improving Site Assessment: Abbreviated Preliminary Assessments” of 1999, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the Superfund Amendments and Reauthorization Act (SARA) of 1986, and the National Contingency Plan as outlined in 40 CFR Parts 300.410(c)(1)(i-v).

The purpose of this assessment was to determine whether or not there is a potential for a release of contaminants to the environment and/or to human health. The purpose of an APA is to determine whether further site characterization is warranted. A Niton XRF 700 Series was utilized to help in the preliminary screening of this Site.

1.0 SITE DESCRIPTION, OPERATIONAL HISTORY, AND WASTE CHARACTERISTICS

The Site is located approximately 6 aerial miles southwest of Granite, OR at an elevation of 5640 feet above mean sea level (MSL). The Site is on National Forest System lands administered and managed by the Wallowa-Whitman National Forest.

Location information:

Lat./Long.:	44° 43' 41"N 118° 26' 57"W
Legal:	Willamette Meridian, T10S, R35E, S1
USGS quadrangle:	Greenhorn

The Site consists of an open portal, waste rock dumps, a tailings pond and remains of a mill.

Little information is available about the Site. However, small output was produced prior to 1900 and during 1907 – 1911. A 25-ton mill was erected in 1954 but used very little.

The Site was developed with 150-foot deep shaft and several short adits, the largest one being 600 feet in length.

Currently, the Site is inactive.

2.0 SITE SAMPLING AND TEST RESULTS

A Niton XRF, XL-722S was used to assess the material from the waste rock dumps and tailings pond for potential contamination. In Situ testing was performed on the Site per EPA Method 6200. Surface soils were removed to approximately 4 to 6 inches below grade in order to get below highly oxidized surface layers. Rocks, debris and other deleterious materials were removed. The soil was worked to gain a flat surface area on which to set the Niton.

The following constituents exceeded EPA Region IX PRG industrial levels:

<u>Location</u>	<u>Constituent</u>	<u>Result (mg/kg)</u>	<u>PRG (mg/kg)</u>
Tailings by Mill	Chromium (total)	924	450
Tailings Pond	Arsenic*	595	1.6
	Lead	1720	750

*Arsenic – for noncancer endpoint, the PRG is 260 mg/kg. For cancer endpoints, the PRG is 1.6 mg/kg.

3.0 SUMMARY

The constituents of concern that exceeded EPA Region IX industrial levels in soil were arsenic, chromium, and lead. Appendix A shows all Niton testing results along with associated State and Federal regulations and guidelines.

The Site poses a physical hazard to the general public recreating at the Site with an open portal.

5.0 RECOMMENDATION

Based on the In Situ screening of the waste dumps with the Niton XRF unit, physical hazards associated with the Site, and EPA's APA Checklist (Appendix B), it is recommended that a Site Inspection (SI) be completed. As part of this inspection, a thorough study of the area to determine the extent of contamination is warranted. The area should be sampled to determine the presence of all waste material and tailings, and if present, the potential waste dumps and tailings should be sampled at depth and a determination of volumes should be calculated. Acid base accounting (ABA) is required if waste material is present besides what had been observed during this assessment.

Appendix C contains additional photos of the Site.

REFERENCES

Webber, Bert, 1995, *Gold Mining in Oregon*, Webb Research Group Publishers. (116 p)

Appendix A

NITON ANALYTICAL RESULTS

SAMPLE LOCATION	TEST RESULTS		STATE GUIDELINES		EPA	
	Element	mg/kg	Receptor	mg/kg	Standard	mg/kg
Waste Pile; side	Arsenic	54	Plants	8.0	Industrial	1.6
	Chromium	411	Plants	5.0	Industrial	450
	Iron	10,298	Plants	10.0	Industrial	100,000
	Nickel	216	Plants	30.0	Industrial	20,000
	Molybdenum	23	---		Industrial	51,000
Tailings by Mill	Chromium	924	Plants	5.0	Industrial	450
	Iron	18,790	Plants	10.0	Industrial	100,000
	Nickel	20,698	Plants	30.0	Industrial	20,000
	Zinc	157	Plants	50.0	Industrial	100,000
Tailings Pond	Arsenic	595	Plants	8.0	Industrial	1.6
	Barium	1210	Birds	85.0	Industrial	67,000
	Chromium	408	Plants	5.0	Industrial	450
	Copper	104	Invertebrates	50.0	Industrial	41,000
	Iron	15,590	Plants	10.0	Industrial	100,000
	Lead	1720	Birds	16.0	Industrial	750
	Molybdenum	17.6	---		Industrial	51,000
	Nickel	199	Plants	30.0	Industrial	20,000
	Selenium	17.1	Plants	1.0	Industrial	51,000
	Zinc	65	Plants	50.0	Industrial	100,000
Waste Pile	Copper	151	Invertebrates	50.0	Industrial	41,000
	Iron	27,290	Plants	10.0	Industrial	100,000
	Lead	51	Birds	16.0	Industrial	750
	Molybdenum	18.6	---		Industrial	51,000
	Nickel	619	Plants	30.0	Industrial	20,000
	Zinc	53	Plants	50.0	Industrial	100,000

Appendix B

**ABBREVIATED PRELIMINARY ASSESSMENT
CHECKLIST**

ABBREVIATED PRELIMINARY ASSESSMENT CHECKLIST

This checklist can be used to help the site investigator determine if an Abbreviated Preliminary Assessment (APA) is warranted. This checklist should document the rationale for the decision on whether further steps in the site assessment process are required under CERCLA. Use additional sheets, if necessary.

Checklist Preparer:

<u>Dennis Boles, Environmental Engineer</u> (Name/Title)	<u>July 11, 2002</u> (Date)
<u>Winema NF, 2819 Dahlia St, Klamath Falls, OR 97601</u> (Address)	<u>541-273.1195</u> (Phone)
<u>djboles@fs.fed.us</u> (E-Mail Address)	

Site Name: Pyx Mine and Millsite

Previous Names (if any):

Site Location: The Site is located approximately 6 aerial miles southwest of Granite, OR.

Legal Description: Willamette Meridian, T10S, R35E, S1

Latitude: N44° 43' 41" Longitude: W118° 26' 57"

Describe the release (or potential release) and its probable nature: Highest levels of contamination are located in the tailings material Arsenic (595 mg/kg), chromium (924 mg/kg), and lead (1720 mg/kg) exceeds EPA Region IX PRGs for industrial soils.

Part 1 - Superfund Eligibility Evaluation

If All answers are "no" go on to Part 2, otherwise proceed to Part 3	YES	NO
1. Is the site currently in CERCLIS or an "alias" of another site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Is the site being addressed by some other remedial program (Federal, State, or Tribal)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Are the hazardous substances potentially released at the site regulated under a statutory exclusion (i.e., petroleum, natural gas, natural gas liquids, synthetic gas usable for fuel, normal application of fertilizer, release located in a workplace, naturally occurring, or regulated by the NRC, UMTRCA, or OSHA)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Are the hazardous substances potentially released at the site excluded by policy considerations (i.e., deferred to RCRA corrective action)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Is there sufficient documentation to demonstrate that no potential for a release that could cause adverse environmental or human health impacts exist (i.e., comprehensive remedial investigation equivalent data showing no release above ARAR's, completed removal action, documentation showing that no hazardous substance release have occurred, or an EPA approved risk assessment completed)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Please explain all "yes" answer(s). _____

Part 2 - Initial Site Evaluation

For Part 2, if information is not available to make a “yes” or “no” response, further investigation may be needed. In these cases, determine whether an APA is appropriate. Exhibit 1 parallels the questions in Part 2. Use Exhibit 1 to make decisions in Part 3.

If the answer is “no” to any questions 1, 2, or 3, proceed directly to Part 3.	YES	NO
1. Does the site have a release or a potential to release?	X	
2. Does the site have uncontained sources containing CERCLA eligible substances?	X	
3. Does the site have documented on-site, adjacent, or nearby targets?	X	

If the answers to questions 1, 2, and 3 above were all “yes” then answer the questions below before proceeding to Part 3.	YES	NO
4. Does documentation indicate that a target (i.e., drinking water wells, drinking surface water intakes, etc.) has been exposed to a hazardous substance released from the site?		X
5. Is there an apparent release at the site with no documentation of exposed targets, but there are targets on site or immediately adjacent to the site?	X	
6. Is there an apparent release and no documented on-site targets or targets immediately adjacent to the site, but there are nearby targets (i.e., targets within 1 mile)?	X	
7. Is there no indication of a hazardous substance release, and there are uncontained sources containing CERCLA hazardous substances, but there is a potential to release with targets present on site or in proximity to the site?	X	

Notes:

EXHIBIT 1
SITE ASSESSMENT DECISION GUIDELINES FOR A SITE

Exhibit 1 identifies different types of site information and provides some possible recommendations for further site assessment activities based on that information. You will use Exhibit 1 in determining the need for further action at the site, based on the answers to the questions in Part 2. Please use your professional judgment when evaluating a site. Your judgment may be different from the general recommendations for a site given below.

Suspected/Documented Site Conditions		APA	FULL PA	PA/SI	SI
1. There are no releases or potential to release.		Yes	No	No	No
2. No uncontained sources with CERCLA-eligible substances are present on site.		Yes	No	No	No
3. There are no on-site, adjacent, or nearby targets		Yes	No	No	No
4. There is documentation indicating that a target (i.e., drinking water wells, drinking surface water intakes, etc.) has been exposed to a hazardous substance released from the site.	Option 1: APA SI	Yes	No	No	Yes
	Option 2: PA/SI	No	No	Yes	No
5. There is an apparent release at the site with no documentation of exposed targets, but there are targets on site or immediately adjacent to the site.	Option 1: APA SI	Yes	No	No	Yes
	Option 2: PA/SI	No	No	Yes	N/A
6. There is an apparent release and no documented on-site targets and no documented immediately adjacent to the site, but there are nearby targets. Nearby targets are those targets that are located within 1 mile of the site and have a relatively high likelihood of exposure to a hazardous substance migrating from the site.		No	Yes	No	No
7. There is no indication of a hazardous substance release, and there are uncontained sources containing CERCLA hazardous substances, but there is a potential to release with targets present on site or in proximity to the site.		No	Yes	No	No

Part 3 - EPA Site Assessment Decision

When completing Part 3, use Part 2 and Exhibit 1 to select the appropriate decision. For example, if the answer to question 1 in Part 2 was “no,” then an APA may be performed and the “NFRAP” box below should be checked. Additionally, if the answer to question 4 in Part 2 is “yes,” then you have two options (as indicated in Exhibit 1): Option 1 -- conduct an APA and check the “Lower Priority SI” or “Higher Priority SI” box below; or Option 2 -- proceed with a combined PA/SI assessment.

Check the box that applies based on the conclusions of the APA:	
<input type="checkbox"/> NFRAP	<input type="checkbox"/> Refer to Removal Program – further site assessment needed
<input checked="" type="checkbox"/> Higher Priority SI	<input type="checkbox"/> Refer to Removal Program – NFRAP
<input type="checkbox"/> Lower Priority SI	<input type="checkbox"/> Site is being addressed as part of another CERCLIS site
<input type="checkbox"/> Defer to RCRA Subtitle C	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Defer to NRC	
Regional EPA Reviewer: <u> N/A </u> _____	
Print Name/Signature	Date

PLEASE EXPLAIN THE RATIONALE FOR YOUR DECISION:

Appendix C

ADDITIONAL SITE PHOTOS



Photo 1. Waste Rock Pile (photo by G. Visconty, 7/11/2002)



Photo 2. Portal (photo by G. Visconty 7/11/2002)



Photo 3. Tailings Pond (photo by G. Visconty, 7/11/2002)



Photo 4. Tailings Pond Showing Healthy Tree Growth
(photo by G. Visconty, 7/11/2002)