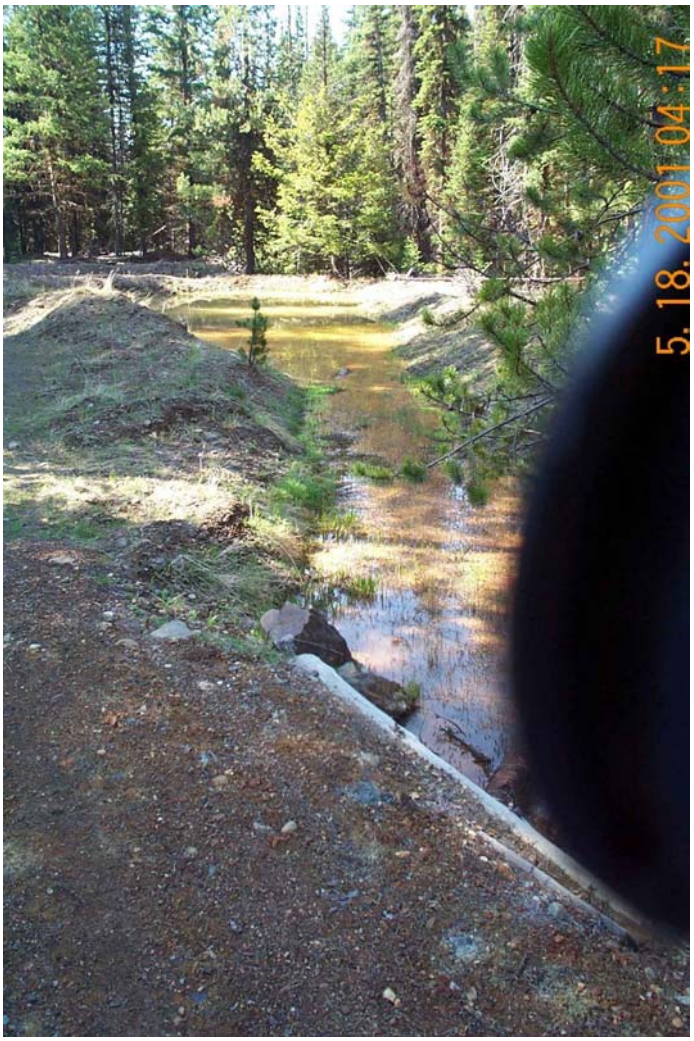
# *ABBREVIATED PRELIMINARY ASSESSMENT*

# *MAGNOLIA MINE*




Umatilla National Forest
Grant County, Oregon

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## APPENDICES

## EXECUTIVE SUMMARY

The Forest Service performed an Abbreviated Preliminary Assessment for the Magnolia Mine (Site) to determine the need for further site characterization. The Site waste piles are placed on relatively flat terrain and are located in the riparian area of Lucas Gulch. A Niton XRF unit was used for In Situ field screening of the waste piles for any potential contaminants. Water and sediment samples were not collected.

Arsenic concentrations were the only element that exceeded EPA Region IX Preliminary Remediation Goals (PRG) as to acceptable industrial levels in soil. It is apparent material is moving into Lucas Gulch from erosion forces.

Based on the proximity of the Site to Lucas Gulch, it is recommended 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.

## 2.0 SITE DESCRIPTION, OPERATIONAL HISTORY, AND WASTE CHARACTERISTICS

The Magnolia Mine (Site) is located approximately 3.0 miles north of Granite, OR, on County Road 73. The legal description for the Site is; Latitude: 44° 51' 32"N, Longitude: 118° 24' 08"W, Sec 22, T 8 S, R 35.5 E, USGS Quadrangle Map - Granite. The Site is situated on flat to moderate hillsides adjacent to Lucas Gulch. The Site is located in the mining district of Granite.

The Site consists of one adit with water discharge coming from the adit and discharging into two settling ponds in waste rock material with the final discharge into Lucas Gulch. The adit is screened, although a deer was observed coming out of the adit through an opening in the screen. The waste piles are situated on top of relatively flat terrain and in the riparian zone of Lucas Gulch. There is a cabin just north of the portal. Accessing the site is easily accomplished via way of the old Forest Service road. Approximately one acre is disturbed on the Site.

There is limited historical data available on this mine. It appears this mine was developed in the late 1800s, and consisted of three adits totaling 1400 feet. Three stopes were developed and the longest was 205 feet, with an average width of four feet. A ten-stamp mill was erected in 1899.

In 1996, EPA reported elevated arsenic (700 ppm) and mercury (1.6 ppm) in sediments in Lucas Gulch. The arsenic and mercury concentrations in the adit discharge were reportedly lower than what was in Lucas Gulch suggesting the bulk of the contamination might be from the Magnolia mine, which is further upstream. Lucas Gulch drains into Granite Creek, which is considered critical habitat for Chinook salmon.

## 3.0 SITE SAMPLING AND TEST RESULTS

A Niton XRF, XL-722S was used to assess the waste piles 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.

No surface water, sediment, or adit discharge samples were collected and analyzed.

The following constituents exceeded EPA Region IX PRG industrial levels:

| Location | Constituent | Result (mg/kg) | PRG (mg/kg) |
|---|---|---|---|
| Upper Waste Pile | Arsenic | 395 | 2.7* |
| Lower Waste Pile | Arsenic | 470 | 2.7 |

*Arsenic Industrial PRG is 2.7 mg/kg for cancer end point and 440 mg/kg for noncancer endpoints.

It is apparent that material from the waste piles is entering Lucas Gulch. It is not clear whether subsurface seepage from the waste pile is occurring and thus creating a contaminated groundwater plume, which would also enter Lucas Gulch. The ramification from this material entering an aquatic environment is unknown at this time.

## 4.0 SUMMARY

The waste piles are situated in the riparian zone of Lucas Gulch. It was apparent erosion forces are contributing some material to Lucas Gulch.

The constituents of concern that exceeded EPA Region IX industrial levels in soil were arsenic. At this time, it is unclear as to any impacts to the aquatic environment from this constituent.

## 5.0 RECOMMENDATION

Based on the In Situ screening of the waste piles with the Niton XRF unit, the proximity of the waste pile to Lucas Gulch, and EPA's APA Checklist (Appendix A), it is recommended that a Site Inspection (SI) be completed. As part of this inspection, water samples from pore spaces of the stream gravels should be collected as well as sampling of the benthic macroinvertebrate organisms. In addition to testing water samples from the pore spaces of the gravels for the presence of metallic elements, water parameters such as pH, conductivity, turbidity, dissolved oxygen, temperature, total dissolved solids, hardness, and oxygen reduction potential are required. The waste pile should be sampled at depth and a determination of the volume should be calculated. The water from the adit should be sampled and tested for the field parameters as outlined above as well as for elemental contaminants. Acid base accounting (ABA) is required. Sediment samples are to be collected from transects of the stream and preferably at depth and analyzed for total as well as for available metals. Surface water samples are also required for analysis for both total and available metals.

# Appendix A

## 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:** Dennis Boles, Environmental Engineer (Name/Title) July 9, 2002 (Date)

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**Site Name:** Magnolia Mine

**Previous Names (if any):** None

**Site Location:** The Site is located approximately 3.0 miles north of Granite, OR on County Road 73. The site is located on the riparian area of Lucas Gulch.

**Legal Description:** Latitude: 44°51'32"N Longitude: 118°24'08"W

**Describe the release (or potential release) and its probable nature:** The waste piles are situated in the riparian zone of Lucas Gulch with obvious signs of migration of contaminants. The following element exceeded industrial levels of the PRGs and the results and relevant PRG industrial levels are listed in parentheses:

Arsenic – 420 (2.7 mg/kg cancer and 440 mg/kg) noncancer endpoints

**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? | | X |
| 2. Is the site being addressed by some other remedial program (Federal, State, or Tribal)? | | X |
| 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)? | | X |
| 4. Are the hazardous substances potentially released at the site excluded by policy considerations (i.e., deferred to RCRA corrective action)? | | X |
| 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)? | | X |

**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:**

| | |
|---|---|
| ( ) NFRAP | ( ) Refer to Removal Program – further site assessment needed |
| (X) Higher Priority SI | ( ) Refer to Removal Program – NFRAP |
| ( ) Lower Priority SI | ( ) Site is being addressed as part of another CERCLIS site |
| ( ) Defer to RCRA Subtitle C | ( ) Other: _____ |
| ( ) Defer to NRC | |

Regional EPA Reviewer: __N/A_____ _____
Print Name/Signature Date

**PLEASE EXPLAIN THE RATIONALE FOR YOUR DECISION:**

The waste piles at the Magnolia Mine are situated on the riparian zone of Lucas Gulch. It is obvious that material is transported to Lucas Gulch during rain and snowmelt situations. Considering Lucas Gulch is a tributary to Granite Creek, which is prime habitat for Chinook salmon and EPA reports showing elevated arsenic and mercury in sediments from Lucas Gulch, an SI is warranted for this Site. Also, water samples from the pore spaces of the gravels and sediments of Lucas Gulch should be collected both up and down stream from the Site and analyzed to determine impacts to benthic macroinvertebrate organisms. Iron and arsenic exceed the EPA Region IX PRGs for industrial levels.

**NOTES:**

The Site is situated on flat to moderate side slopes and getting drilling equipment on the waste pile can easily be accomplished. Based on this, drilling is appropriate in order to collect soil samples for laboratory evaluation and to determine the volume of material onsite as well as any impact to groundwater in the area.

# Appendix B

## ADDITIONAL SITE PHOTOS


***Portal***


***Adit Drainage***


***Settling Pond***