Site Inspection Report for the Abandoned and Inactive Mines in Idaho on U.S. Forest Service Lands (Region 1), Nez Perce National Forest: Volume I: Florence and Rapid River Areas, Idaho County, Idaho

John Kauffman
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Field Inspection conducted by John Kauffman
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1.0 PROJECT OVERVIEW

1.1 INTRODUCTION

In order to fulfill its obligations under the Clean Water Act and related legislation, the Northern Region of the United States Forest Service (USFS) needs to identify and characterize the abandoned and inactive mines with environmental, health, and/or safety problems that are on or that could impact U.S. Forest Service-administered lands. The Northern Region of the USFS administers National Forest lands in the northern part of Idaho, Montana, and parts of North and South Dakota. The Idaho Geological Survey (IGS) is the lead state agency for the collection, interpretation, and distribution of information about the geology and mineral resources of Idaho. The USFS and the IGS, having determined that an inventory and preliminary characterization of abandoned and inactive mines in Idaho would be beneficial to both agencies, have entered into a series of participating agreements to accomplish this work. The first area inventoried was the Panhandle National Forests. This volume presents work that was done in the Florence and Rapid River areas of the Nez Perce National Forest. Appendix E contains a list of all reports prepared for this project. For continuity, the general design of this report follows that used by the Montana Bureau of Mines and Geology for similar studies in Montana.

1.2 PROJECT OBJECTIVES

In 1992, the USFS and IGS entered into an agreement to inventory abandoned and inactive mines on or affecting Forest Service lands in Idaho. Work on the initial phase of the project included developing a computerized database of all such mines and prospects and plotting the locations of these properties on National Forest base maps. Phase 2 work conducted the following year provided the Forest Service with screening forms containing site information from the database and map overlays at 7.5-minute scale for areas of dense mining activity. Phase 3 started in the summer of 1996 and included field examination of properties in the Prichard Creek and Eagle Creek basins (Summit mining district) in Shoshone County, field examination of properties in the Gold Creek drainage (Lakeview mining district) in Bonner County, and preparation of reports discussing the ownership and operational history of selected mines. Field work in the summer of 1997 covered properties in the Coeur d'Alene River basin surrounding the Coeur d'Alene mining district that had not been examined the previous summer. Properties north and south of the Coeur d'Alene River drainage were examined during the 1998 field season. In the summer of 1999, field work shifted to lands administered by the Clearwater and Nez Perce National Forests, and field work in the Nez Perce National Forest was completed in the 2000 field season.

The overall objectives of this inventory and preliminary characterization process, as defined by the USFS, are to:

1. Systematically identify all mine sites with possible human health, environmental, and/or safety related problems that either are on or affecting Forest Service lands.
2. Identify the human health and environmental risks at each location based on site characterization factors (see Section 1.5), including screening-level soil and water samples taken and analyzed in accordance with Environmental Protection Agency (EPA) protocols and quality control procedures.

3. Based on site characterization factors, identify those sites that are not affecting Forest Service lands and that can therefore be eliminated from further consideration.

4. Cooperate with other state and federal agencies, and integrate the Northern Region program with their programs.

5. Develop and maintain a data file of site information that will allow the Region to pro-actively respond to governmental and public interest group concerns.

In addition to the USFS objectives outlined above, the IGS objectives include gathering new information associated with these abandoned and inactive mines. The Survey’s enabling legislation (Sections 47-201–47-204 of the Idaho Code) designates the IGS as the lead state agency for the collection, interpretation, and distribution of all geologic and minerals data for Idaho.

1.3 ABANDONED AND INACTIVE MINES DEFINED

For the purposes of this study, mines, mills, or other processing facilities related to mineral extraction and/or processing are defined as abandoned or inactive as follows:

A mine is considered *abandoned* if there are no identifiable owners or operators for the facilities, or if the facilities have reverted to federal ownership.

A mine is considered to be *inactive* if there is an identifiable owner or operator of the facility, but the facility is not currently operating and there are no approved authorizations or permits to operate.

1.4 HEALTH AND ENVIRONMENTAL PROBLEMS AT MINES

A variety of safety, health, and environmental problems may occur at abandoned and inactive mines. These include metals that contaminate ground water, surface water, and soils; airborne dust from abandoned tailings impoundments; eroding mine and mill waste materials that contribute excessive amounts of sediment to surface waters; unstable waste piles with the potential for catastrophic failure; and physical hazards associated with mine openings and dilapidated structures. The most important environmental hazard is the contamination of both surface and subsurface water by metals, acid mine drainage, or sediment loading.

Metals are often transported from a mine by water (ground water discharge or surface runoff) and may be dissolved, suspended, or carried as part of the bedload. When sulfides are present, acid
water can form; this, in turn, increases the solubility of metals. This condition, known as acid mine drainage (AMD), is a significant source of metal releases at some mine sites in Idaho.

1.4.1 Acid Mine Drainage

Trexler and others (1975) identified six factors that govern the formation of metal-laden acid mine waters. They are:

1) availability of acid-producing minerals, particularly pyrite,
2) presence of oxygen,
3) moisture in the atmosphere,
4) availability of leachable heavy metals,
5) availability of water to transport the dissolved constituents, and
6) mine characteristics, which affect movement of air and water through the mine workings.

These factors occur not only within the mines themselves, but also within mine dumps and mill tailings piles, making these waste materials potential sources of contamination as well. Formation of acid mine drainage can be reduced if minerals such as calcite, which can neutralize acidity, are present (Trexler and others, 1975; Marvin and others, 1995).

Acid mine drainage is formed by the oxidation and dissolution of sulfides, particularly pyrite (FeS₂) and pyrrhotite (Fe₇₈S). Other sulfides play a minor role in acid generation. Oxidation of iron sulfides forms sulfuric acid (H₂SO₄), sulfate ions (SO₄²⁻), and reduced iron (Fe²⁺). When sulfide-bearing rock is mined, the sulfide minerals are exposed to atmospheric oxygen and oxygen-bearing water. Consequently, the sulfide minerals are oxidized, and acid mine waters are produced (Trexler and others, 1975; Marvin and others, 1995).

The oxidation of the reduced iron is the step that limits how much acid will form. The rate of this reaction can be greatly increased by iron-oxidizing bacteria (Thiobacillus ferroxidans). The oxidized iron produced by biological activity promotes further oxidation and dissolution of pyrite, pyrrhotite, and marcasite (FeS₂, a dimorph of pyrite) (Trexler and others, 1975; Marvin and others, 1995).

Once formed, the acid can dissolve other sulfide minerals to produce high concentrations of copper, lead, zinc, and other metals. Minerals that can contribute heavy metals to acid mine drainage include arsenopyrite, FeAsS; chalcopyrite, CuFeS₂; galena, PbS; tetrahedrite, (CuFe)₁₂Sb₄S₉₃; and sphalerite, (Zn, Fe)S. Aluminum can be leached by the dissolution of aluminosilicates common in soils and waste material found in Idaho. The dissolution of any given metal is controlled by the solubility of that metal (Trexler and others, 1975; Marvin and others, 1995).
1.4.2 Solubility of Selected Metals

The following information is paraphrased from Marvin and others (1995, p. 5-6). This report cites the following references as sources for this material: Lindsay (1979), Stumm and Morgan (1981), Hem (1985), and Maest and Metesh (1993). At a pH above 2.2, ferric hydroxide \([\text{Fe(OH)}_3]\) produces a brownish orange color in surface waters and forms a precipitate with a similar color on rocks in affected streams. If other metals, such as copper, lead, cadmium, zinc, and aluminum, are present in the source rock, they may also precipitate with or adsorb onto the ferric hydroxide (Stumm and Morgan, 1981). Alunite \([\text{KAl}_3\text{(SO}_4)_2(\text{OH})_6]\) and jarosite \([\text{KFe}_3\text{(SO}_4)_2(\text{OH})_6]\) will precipitate at a pH of less than 4, depending on \(\text{SO}_4^{2-}\) and \(\text{K}^+\) activities (Lindsay, 1979).

Under acidic conditions, the solubility of the metal controls how much will be released into the environment:

**Manganese** solubility is strongly controlled by the redox state and is limited by the presence of minerals such as pyrolusite and manganite; under reducing conditions, pyrolusite \([\text{MnO}_2]\) dissolves and manganite \([\text{MnO(OH)}]\) precipitates. Manganese is found in mineralized environments as rhodochrosite \([\text{MnCO}_3]\) and its weathering products.

**Aluminum** solubility is most often controlled by alunite \([\text{KAl}_3\text{(SO}_4)_2(\text{OH})_6]\) or by gibbsite \([\text{Al(OH)}_3]\), depending on pH. Aluminum is one of the most common elements in rock-forming minerals such as feldspars, micas, and clays.

**Arsenic** tends to precipitate and adsorb with iron at low pH and de-sorb or dissolve at higher pH. Once oxidized, arsenic will be found in solution in higher pH waters. When the pH is between 3 and 7, the dominant arsenic compound is a monovalent arsenate, \(\text{H}_2\text{AsO}_4\). Arsenic is abundant in metallic mineral deposits as arsenopyrite \([\text{FeAsS}]\), enargite \([\text{Cu}_3\text{AsS}_4]\), tennantite \([\text{Cu}_{12}\text{As}_4\text{S}_{13}]\), and other minerals.

**Cadmium** solubility data are limited. When the pH of soils is above 7.5, the solubility of cadmium is controlled by the carbonate species octavite \([\text{CdCO}_3]\); when the pH of the soil is below 6, cadmium solubility is controlled by strengite \([\text{Cd}_3(\text{PO}_4)_2]\). Octavite is the dominant control on the solubility of cadmium in soils. In water, at low partial pressures of \(\text{H}_2\text{S}\), \(\text{CdCO}_3\) is easily reduced to \(\text{CdS}\).

**Copper** solubility in natural waters is controlled primarily by the amount of carbonate present; malachite \([\text{Cu}_2(\text{OH})_2\text{CO}_3]\) and azurite \([\text{Cu}_3(\text{OH})_2(\text{CO}_3)_2]\)
form when CO$_3^-$ ions are available in sufficient concentrations. In soil, copper combines readily with iron to form cupric ferrite. Other compounds, such as sulfate and phosphates, may also control copper solubility in soils. Copper is present in many ore minerals, including chalcocite [Cu$_2$S], bornite [Cu$_3$FeS$_4$], chalcopyrite [CuFeS$_2$], and tetrahedrite [Cu$_{12}$Sb$_4$S$_{13}$].

**Mercury** readily vaporizes under atmospheric conditions and thus is most often found in concentrations well below the 25 µg/L equilibrium concentration. The most stable form of mercury in soil is its elemental form. Mercury is found in low temperature hydrothermal ores as cinnabar [HgS], in epithermal (hot springs) deposits as native mercury, and as native mercury in man-made deposits where mercury was used to process gold ores.

**Lead** concentrations in natural waters are controlled by the formation of lead carbonate, which has an equilibrium concentration of 50 µg/L when the pH is between 7.5 and 8.5. As with other metals, concentrations in solution increase with decreasing pH. In sulfate soils with a pH of less than 6, the formation of anglesite determines how much lead will remain in solution. The formation of cerussite, a lead carbonate, controls solubility in buffered soils. Lead occurs in the common ore mineral galena [PbS].

**Zinc** solubility is controlled by the formation of zinc hydroxide and zinc carbonate in natural waters. When the pH is above 8, the equilibrium concentration of zinc in water with a high bicarbonate content is less than 100 µg/L. Franklinite may control solubility at pH less than 5 in water and soils, and its formation is strongly affected by sulfate concentrations. Thus, production of sulfate from acid mine drainage may ultimately control the solubility of zinc in water affected by mining. Sphalerite [ZnS] is common in mineralized systems.

1.4.3 The Use of pH and Specific Conductivity to Identify Water Quality Problems

Specific conductance (SC) and pH provide a rapid way to distinguish many “problem” mine sites from those that have no adverse water-related impacts. As a rough screening tool, low pH (<6.0) and high SC (variable) usually occur at sites with problems; neutral or higher pH and low SC indicate sites that are less likely to have serious problems.

Limiting data collection only to pH and SC largely ignores the various controls on solubility and can lead to overlooking some types of problems. Arsenic, for example, is most mobile in waters with higher pH values (>7), and its concentration is strongly dependent on the presence of dissolved iron. Cadmium and lead may also exceed standards in waters with pH values within acceptable limits.
Reliance on SC as an indicator of site conditions can also be misleading in certain situations. The SC value of a sample represents 55 to 75 percent of the total dissolved solids (TDS), depending on the concentration of sulfate. Also, it is necessary to have a statistically significant amount of SC data for a study area in order to define what constitutes a high or low SC value.

In some cases, a water sample with a near-neutral pH and a moderate SC could have one or more dissolved metal species that may exceed standards. The complete evaluation of a mine site for adverse impacts on water and soil should include the collection of samples for analysis of metals, cations, and anions.

1.5 METHODOLOGY

1.5.1 Data Sources

The IGS began compiling a database of mining properties in Idaho in 1979. This work has continued to date, and the database (now digital) contains information on some 8,700 mines and prospects. All or parts of the following databases and information sources have been integrated into this digital information system:

1. the Mineral Industry Location Subsystem (MILS) database (U.S. Bureau of Mines)
2. the Mineral Resources Data System (MRDS) database (U.S. Geological Survey)
3. published compilations of mines and prospects data
4. state publications on Idaho mineral deposits
6. IGS mineral property files
7. mines and prospects noted on the appropriate USGS 7.5-minute quadrangle maps
8. data held in private collections or company information.

Most of the data for this project were collated with existing data in the IGS Mines and Prospects digital database. As noted, this is the most complete compilation available for information on Idaho’s mining properties. The IGS continues to update the database, which now contains an estimated 85-90 percent of the mining properties in the state. During the field visits, the IGS located some (but not many) mines and prospects for which no previous information existed. Also, a very few mines listed in the database were not found.

1.5.2 Pre-field Screening

Field crews visited almost all the mine sites in the study area, emphasizing the properties with the potential to release hazardous substances and those for which there was not enough information available to make that determination without a field visit. The IGS and the USFS developed screening criteria (Table 1.5-1) which they used to determine if a site had the potential to release hazardous substances or posed other environmental or safety hazards. The first page of the Field Form (Appendix A) contains the screening criteria. If any of the answers were “yes” or unknown,
the site was visited. Personal knowledge of a site and published information were used initially to answer the questions. Forest Service mineral specialists used these criteria to "screen out" several sites using their knowledge of an area.

Mine sites which were not visited were retained in the database along with the data source(s) that were consulted. However, if these sites were close to a visited site, the geologist usually looked at them to verify that the screening information was correct.

Placer mines were not studied as part of this project. Although mercury was used in amalgamating free gold in placer mines, the complex nature of placer deposits makes detection of mercury difficult and is beyond the scope of this inventory. Due to their oxidized nature, placer deposits are not likely to contain other anomalous concentrations of heavy metals.

Table 1.5-1. Screening Criteria (answer Yes or No to each item).

<table>
<thead>
<tr>
<th>Yes/No</th>
<th>Screening Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Mill site or tailings present.</td>
</tr>
<tr>
<td></td>
<td>2. Adits with discharge or evidence of discharge.</td>
</tr>
<tr>
<td></td>
<td>3. Evidence of or strong likelihood for metal leaching or AMD (water stains, stressed or lack of vegetation, waste below water table, etc.)</td>
</tr>
<tr>
<td></td>
<td>4. Mine waste in floodplain or shows signs of water erosion.</td>
</tr>
<tr>
<td></td>
<td>5. Residences, high public use area, or environmentally sensitive area (as listed in HRS) within 200 feet of the disturbance.</td>
</tr>
<tr>
<td></td>
<td>6. Hazardous wastes/materials (chemical containers, explosives, etc.)</td>
</tr>
<tr>
<td></td>
<td>7. Open adits/shafts, highwalls, or hazardous structures/debris.</td>
</tr>
</tbody>
</table>

If the answers to criteria 1 through 6 were all "NO" (based on literature, personal knowledge, or a site visit), the site was not investigated further.

1.5.3 Field Inspection Procedures

The sites which could not be screened out by using the criteria in Table 1.5-1 were visited by an IGS geologist. At sites for which little geologic or mining data existed, geologists characterized the geology, collected samples for geochemical analysis, evaluated the deposit, and described surface workings and processing facilities present. All information required to fill in the Field Questionnaire (Appendix A) was gathered.

When it was determined that a site had a possible environmental problem, more sampling and description were required. Information was collected concerning environmental degradation, hazardous mine openings, the presence of structures, and land ownership. After the potential
problems were described, appropriate soil and water samples were collected. All site locations were refined using conventional field methods, and each site was located by latitude and longitude and by Township, Range, and Section. If previously determined, these values were checked and corrected, as needed.

On public lands, sites with ground-water discharge, flowing surface water, or contaminated soils (as indicated by impacts on vegetation) were mapped. Sketch maps show locations of the workings, exposed geology, dumps, tailings, and surface water and geologic sample locations. Oblique aerial photographs were sometimes substituted or used to supplement the field sketches. The site was photographically recorded using both still images and videotape. The videotape record proved especially useful for site description and review, and is recommended for future studies.

1.5.3.1 Soil, Rock, Stream Sediment, and Mine Waste Sampling Procedures

At sites identified as having a potential problem, the geologist collected soil, rock, stream sediment, and waste samples, as appropriate. Sample locations were selected in areas where waste material was obviously impacting natural material. In most cases a composite sample was gathered to get as representative a sample as possible, or multiple samples were collected. All sample sites were located so as to assess conditions on National Forest lands. Three types of samples were collected:

1) select rock, soil, stream sediment, or waste samples—specimens representing a particular material taken for analysis;

2) composite samples—rock and soil taken systematically from a waste dump or tailings pile for analysis, representing the overall composition of material in the source;

3) leach samples—duplicates of selected composite samples (usually waste rock or mill tailings) for testing leachable metals.

The three types of samples were used to examine the metal content of dumps and tailings, and to check the availability of metals during leaching when sample sites were exposed to water. Outcrops and waste materials were not sampled extensively enough to provide reliable estimates of tonnages, grades, or economic feasibility.

1.5.3.2 Water Sampling Procedure

As noted, this project focused on the impacts of mining on surface water, ground water, and soils. The reasoning behind this approach was that a mine disturbance may have high total metal concentrations yet may be releasing few metals into the surface water, ground water, or soil. Conversely, another disturbance could have lower total metal content but be releasing metals in concentrations that adversely impact the environment.
The geologist selected and marked water sample sites based on field parameters (SC, pH, temperature) and observations (such as erosion and staining of soils or stream beds). Sample locations were chosen that would provide the best information on the relative impact of the site to surface water and soils. All sites were accurately located on topographic base maps. Surface water samples were collected at all discharge points at the site, as well as samples from upstream and downstream of the site.

At each water sampling site, the temperature, specific conductivity, and pH were measured. A unique sample number was affixed to the sample bottle. Two 125-ml samples were collected. One sample was left raw and the other was acidified with 0.1N nitric acid. Both samples were stored in a secured ice box. The samples remained under constant refrigeration and security until submitted for analysis.

Since monitoring wells were not installed as part of this investigation, the evaluation of metal contamination of ground water was limited to strategic sampling of surface water and soils. In most cases, reference water-quality data at a particular mine site was restricted to upstream surface water samples. However, in some drainages reference samples were collected at sites with no visible contamination and no known mining activity upstream from the sampling location. Reference soil samples were not collected. Laboratory leach tests were used to determine if metals might be released from mine waste material, which could provide additional insight to possible ground-water contamination.

1.5.4 Analytical Methods

The Analytical Sciences Laboratory at the University of Idaho performed all of the laboratory analyses using the following EPA-approved protocols and quality assurance standards:

Water Samples (acidified and unfiltered)—Total Recoverable Metal Screen (EPA Test 200.7).
Water Samples (acidified and unfiltered)—Arsenic (EPA Test 200.8), Lead (EPA Test 200.8), and Mercury (EPA Test 200.8); or Dissolved Heavy Metals Screen (which includes arsenic and lead) and Mercury (EPA Test 200.8).
Water Samples (raw and filtered 0.45 micron filter)—Dissolved Metal Screen (EPA Test 200.7).
Soil and Waste Material—Element Screen (EPA Test 3050), Leachable Metals [Toxicity Characteristic Leaching Procedure (TCLP) for Metals] Screen (EPA Test 1311/6010).

1.5.5 Standards

EPA and various state agencies have developed human health and environmental standards for various metals. In an attempt to put the metal concentrations that were measured into some perspective, they were compared to these developed standards. However, it is understood that the background metal concentrations in mineralized areas may exceed these standards.
1.5.5.1 Water-Quality Standards

The Safe Drinking Water Act (SDWA) directs EPA to develop standards for potable water. Some of these standards are mandatory (primary) and some are desired (secondary). The standards established under the SDWA are often referred to as primary and secondary maximum contaminant levels (MCLs). Similarly, the Clean Water Act (CWA) directs EPA to develop water-quality standards (acute and chronic) that will protect aquatic organisms. These standards may vary with water hardness and are often referred to as the Aquatic Life Standards. The primary and secondary MCLs along with the acute and chronic Aquatic Life Standards for selected metals are listed in Table 1.5-2. As these standards can vary with water hardness, a range of values is given for some elements. Hardness was not measured for this study.

Table 1.5-2. Standards for contaminants in water.

<table>
<thead>
<tr>
<th>Element</th>
<th>Primary MCL (mg/L)</th>
<th>Secondary MCL (mg/L)</th>
<th>Aquatic Life, Acute (mg/L)</th>
<th>Aquatic Life, Chronic (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>---</td>
<td>0.05-0.2</td>
<td>0.75</td>
<td>0.087</td>
</tr>
<tr>
<td>Arsenic</td>
<td>0.05</td>
<td>---</td>
<td>0.36</td>
<td>0.19</td>
</tr>
<tr>
<td>Barium</td>
<td>2</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Cadmium</td>
<td>0.005</td>
<td>---</td>
<td>0.004/0.009</td>
<td>0.001/0.002</td>
</tr>
<tr>
<td>Chromium</td>
<td>0.1</td>
<td>---</td>
<td>1.7/3.1</td>
<td>0.21/0.37</td>
</tr>
<tr>
<td>Copper</td>
<td>1.3</td>
<td>1</td>
<td>0.018/0.034</td>
<td>0.012/0.021</td>
</tr>
<tr>
<td>Iron</td>
<td>---</td>
<td>0.3</td>
<td>---</td>
<td>1</td>
</tr>
<tr>
<td>Lead</td>
<td>0.015</td>
<td>---</td>
<td>0.082/0.2</td>
<td>0.003/0.008</td>
</tr>
<tr>
<td>Manganese</td>
<td>---</td>
<td>0.05</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Mercury</td>
<td>0.002</td>
<td>---</td>
<td>0.0024</td>
<td>0.000012</td>
</tr>
<tr>
<td>Nickel</td>
<td>0.1</td>
<td>---</td>
<td>1.4/2.5</td>
<td>0.16/0.28</td>
</tr>
<tr>
<td>Zinc</td>
<td>---</td>
<td>5</td>
<td>0.12/0.21</td>
<td>0.11/0.19</td>
</tr>
</tbody>
</table>

1.5.5.2 Soil and Rock Background Standards

It is useful to have some idea about the natural background values of rocks and soils when interpreting geochemical data. Although no whole rock or soil samples were run for this study, an estimate for the granitic rocks can be made from the analyses presented by Bennett (1980). In this study, stream sediment samples were grouped according to the major rock type in the source area. The mean and standard deviation for granitic rocks of the Idaho batholith are presented in Table 1.5-3. These samples were analyzed by atomic absorption spectrophotometry. Geochemistry of the Seven Devils Group is discussed in Hamilton (1963).
Table 1.5-3. Mean and standard deviation of elements in stream sediment samples derived from rocks of the Idaho batholith (data from Bennett, 1980; ppm = mg/Kg).

<table>
<thead>
<tr>
<th>Element</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molybdenum (ppm)</td>
<td>2.43</td>
<td>0.43</td>
</tr>
<tr>
<td>Nickel (ppm)</td>
<td>11.85</td>
<td>5.31</td>
</tr>
<tr>
<td>Copper (ppm)</td>
<td>5.82</td>
<td>2.40</td>
</tr>
<tr>
<td>Lead (ppm)</td>
<td>17.79</td>
<td>6.32</td>
</tr>
<tr>
<td>Zinc (ppm)</td>
<td>60.14</td>
<td>104.21</td>
</tr>
<tr>
<td>Silver (ppm)</td>
<td>0.83</td>
<td>4.23</td>
</tr>
</tbody>
</table>

No. of Samples: 384

There are no federal standards for concentrations of metals and other constituents in soils; acceptable limits for such are often based on human and/or environmental risk assessments for an area. Since no assessments of this kind have been done, concentrations of metals in soils were compared to the limits postulated by the U.S. EPA for the Clark Fork Superfund site (Table 1.5-4). The proposed upper limit for lead in soils is 1,000 mg/Kg to 2,000 mg/Kg, and 80 to 100 mg/Kg for arsenic in residential areas.

Table 1.5-4. Clark Fork Superfund background levels for selected elements.

<table>
<thead>
<tr>
<th>Material</th>
<th>As (mg/Kg)</th>
<th>Cd (mg/Kg)</th>
<th>Pb (mg/Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Mean Soil</td>
<td>6.7</td>
<td>0.7</td>
<td>20.0</td>
</tr>
<tr>
<td>Helena Valley Mean Soil</td>
<td>16.5</td>
<td>0.2</td>
<td>11.5</td>
</tr>
<tr>
<td>Missoula Lake Bed Sediments</td>
<td>n.a.</td>
<td>0.2</td>
<td>34.0</td>
</tr>
<tr>
<td>Blackfoot River</td>
<td>4.0</td>
<td>&lt;0.1</td>
<td>n.a.</td>
</tr>
<tr>
<td>Phytotoxic Concentration</td>
<td>100.0</td>
<td>100.0</td>
<td>1,000.0</td>
</tr>
</tbody>
</table>

1.5.6 Analytical Results

The results of the sample analyses were used to estimate the nature and extent of potential impacts to the environment and human health. Selected results for each site are presented in the discussion; a complete listing of water quality, soil chemistry, and leach test results are presented in Appendix C. It should be noted that the sampling for this study was of a reconnaissance nature only, sufficient for outlining possible problem areas for future study. Sampling density was not sufficient to provide a statistically valid description of any specific site.
The data fields in the current database are presented in Appendix B, and the format (dBase IV) is compatible with the widely used ARC/INFO Geographical Information System (GIS). In addition, all of the field observations and analytical data were entered into a database compatible with other studies under way by the U.S. Forest Service.

1.5.7 Sample and Site Identification Numbers

All water, tailings, and dump samples were assigned unique numbers. These were constructed according to the following system: 1) an initial letter code identifying the person who took the sample (usually the first letter of the last name); 2) one digit for the month; 3) two digits for the day on which the sample was taken; 4) the last two digits in the year in which the sample was taken (i.e., “00,” if the samples was taken in 2000); and 5) two digits, including leading zeros, identifying the individual sample. Site numbers for properties that did not have a database identification number assigned to them were generated in the same manner.
2.0 FLORENCE AND RAPID RIVER AREAS, IDAHO COUNTY, IDAHO

2.1 INTRODUCTION

This volume, Volume I of the Nez Perce National Forest report, describes thirty-eight properties in the Florence and Rapid River areas of the Nez Perce National Forest. Twelve properties discussed in this volume reported lode production between 1900 and 1960, but none of these properties had over 500 tons of total lode output. Three of the twelve properties also reported placer production in addition to the lode output. Production data for the Micro Gold II site, which was active in the early 1980s, is not available.

The study area covers part of the Salmon River Ranger District, which is in Idaho County (Figure 2.1-1). The mineralized areas in the Florence area are in drainages that are tributary to the Salmon River. The mines in the Rapid River area are on the West Fork of Rapid River or on the Rapid River, which is a tributary of the Little Salmon River. Most of the mines in the study area are in the Rapid River drainage or around the town of Florence, although isolated properties to the east, north, and southwest of Florence are also discussed in this report. Access to the area is by unpaved roads from U.S. Highway 95, which traverses the north-south corridor that separates the Florence area from the Rapid River area; by numerous Forest Service roads throughout the study area; and by trails that connect to the Forest Service roads. Most of the drainages with past mining activity have dirt roads.

The thirty-eight mines and prospects described in this volume are located on six 7.5-minute topographic maps (U.S. Geological Survey). The locations of these properties are shown in Figure 2.1-1. Elevations in the study area range from about 1,850 feet on the Salmon River downstream from the Looking Glass Prospect (southwest of Florence) to 7,197 feet at Cannon Ball Mountain in the Rapid River area; elevations near Florence are around 6,000 feet. The area is heavily forested with dense brush and conifers, and the topography is generally steep.

2.1.1 Summary of the Florence and Rapid River Study Area

There were thirty-eight mining properties (Table 2.1-1) examined in the Florence and Rapid River areas. Of these properties, nine have the potential to have an environmental impact on or near USFS lands, seven have water discharges that exceed one or more water quality standards, one has waste rock impinging on an active waterway, and one has both water quality concerns and waste rock impinging on an active waterway.

Of the thirty-eight sites discussed in this volume, nine have open adits or shafts. Of these, four properties have multiple open workings and one has a gated adit. Some of these openings pose significant safety hazards.

2.2 GEOLOGY

The most recent references showing the geology of the Florence and Rapid River areas are Mitchell (1996), Stanford (1996a, 1996b, 1996c), Gaston and Bennett (1979), and Mitchell and Bennett (1979). The geology and ore deposits of the area are discussed in Lindgren (1900), Reed
Figure 2.1-b  Location of properties in the Florence and Rapid River areas (Idaho Transportation Department Riggs 1:100,000-scale map)
Figure 2.1-1c. Location of properties in the Florence area (Idaho Transportation Department Warren 1:100,000-scale map).
Table 2.1-1. Summary of properties visited in the Florence and Rapid River areas. The properties are arranged according to site number. All sites were visited in 2000.

**Explanation:**

**Site Number:** Idaho Geological Survey file number, or field designation number.

**Surface Owner:** FS = Forest Service; P = Private or Patented claims; ? where ownership is uncertain

**Water/Solid Sample:** numbers indicate the number of samples collected.

**Environmental Concerns:** W = water; D = waste dump. Environmental concerns are noted as follows:

- W - samples of adit water or seeps from waste dumps that exceed one or more water quality standards in the *Dissolved Metals Screen*, the *Total Recoverable Metals Screen*, or the arsenic, lead (or the *Dissolved Heavy Metals Screen*), or mercury tests; D - dump samples that exceed background or environmental standards for one or more elements in the *Element Screen*, and/or dump samples that show significant leaching of one or more metals in the *TCLP for Metals Screen*.

**Physical Conditions:** AO = open adit; AC = caved or otherwise closed adit; AG = gated adit; SO = open shaft; SC = caved shaft; SiC = caved stope; T = trench; C = cut; P = prospect pit; OPR = reclaimed open pit. Numbers indicate how many of each are at the site; queried when type or condition of workings is uncertain or unknown.

<table>
<thead>
<tr>
<th>Site Number</th>
<th>Mine Name</th>
<th>Surface Owner</th>
<th>Water Samples</th>
<th>Solid Samples</th>
<th>Environmental Concerns</th>
<th>Physical Conditions/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC-650</td>
<td>Bullion Mine</td>
<td>FS</td>
<td>1</td>
<td>W</td>
<td>1AO; 1AC, several T</td>
<td></td>
</tr>
<tr>
<td>EC-656</td>
<td>Big Three Mine</td>
<td>FS(?)</td>
<td>1</td>
<td>W</td>
<td>4AC, 1SC</td>
<td></td>
</tr>
<tr>
<td>GR-12</td>
<td>Irishman Prospect</td>
<td>FS</td>
<td>none</td>
<td></td>
<td>1AC, 1SC, several P</td>
<td></td>
</tr>
<tr>
<td>GR-13</td>
<td>Golden Dike</td>
<td>FS</td>
<td>1</td>
<td>none</td>
<td>3AC, placer trenches</td>
<td></td>
</tr>
<tr>
<td>GR-14</td>
<td>Red Wing Prospect</td>
<td>FS</td>
<td>none</td>
<td></td>
<td>placer workings</td>
<td></td>
</tr>
<tr>
<td>GR-15</td>
<td>Ozark Claim</td>
<td>FS</td>
<td>none</td>
<td></td>
<td>2SC, placer workings</td>
<td></td>
</tr>
<tr>
<td>GR-16</td>
<td>Ozark Mine</td>
<td>FS</td>
<td></td>
<td>2SO(?), 2SC, 1AC, placer workings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GR-18</td>
<td>Bear Track Prospect</td>
<td>FS</td>
<td>none</td>
<td>1AC(?), abundant placer workings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GR-21</td>
<td>Mikado Prospect</td>
<td>P</td>
<td>none</td>
<td>1AC, 1SO(?), P or SC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GR-25(?)</td>
<td>Morning Sun(?)</td>
<td>FS</td>
<td>none</td>
<td>P, placer gullies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GR-28</td>
<td>Gilt Edge Prospect</td>
<td>FS</td>
<td>none</td>
<td>1 AC(?), several P, placer trenches</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GR-32</td>
<td>Waverly Mine</td>
<td>FS ?</td>
<td>1</td>
<td>W</td>
<td>1AC</td>
<td></td>
</tr>
<tr>
<td>GR-41</td>
<td>Hinckson &amp; Bishop</td>
<td>FS</td>
<td>none</td>
<td>1AC, 3SC, several P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GR-43</td>
<td>Elkhorn Prospect</td>
<td>FS</td>
<td>none</td>
<td>1SC, P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GR-44</td>
<td>Black Bear Mine</td>
<td>FS</td>
<td>1</td>
<td>W</td>
<td>3AC, several P</td>
<td></td>
</tr>
<tr>
<td>GR-46</td>
<td>U.S. Mine</td>
<td>FS</td>
<td>none</td>
<td></td>
<td>1AC, several P</td>
<td></td>
</tr>
</tbody>
</table>
Table 2.1-1 (continued). Summary of properties visited in the Florence and Rapid River areas.

<table>
<thead>
<tr>
<th>Site Number</th>
<th>Mine Name</th>
<th>Surface Owner</th>
<th>Water Samples</th>
<th>Solid Samples</th>
<th>Environmental Concerns</th>
<th>Physical Conditions/Comments</th>
</tr>
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<tbody>
<tr>
<td>GR-48</td>
<td>Red Bird Prospect</td>
<td>FS</td>
<td></td>
<td></td>
<td>none</td>
<td>2SC, several P and T</td>
</tr>
<tr>
<td>GR-49</td>
<td>Hi Yu Mine</td>
<td>FS</td>
<td></td>
<td></td>
<td>none</td>
<td>1AC, 1AO(?)</td>
</tr>
<tr>
<td>GR-51</td>
<td>Banner Mine</td>
<td>P</td>
<td></td>
<td></td>
<td>refused permission to visit workings</td>
<td></td>
</tr>
<tr>
<td>GR-52</td>
<td>Gold Bug Mine</td>
<td>P</td>
<td></td>
<td></td>
<td>refused permission to visit workings</td>
<td></td>
</tr>
<tr>
<td>GR-54</td>
<td>Lone Pine Mine</td>
<td>P ? FS ?</td>
<td>1</td>
<td>W</td>
<td>1AG, 2AC, ISC</td>
<td></td>
</tr>
<tr>
<td>GR-55</td>
<td>Mother Lode claim</td>
<td>P ?</td>
<td></td>
<td></td>
<td>none</td>
<td>1AC, several P</td>
</tr>
<tr>
<td>GR-56</td>
<td>Poorman Mine</td>
<td>FS</td>
<td>1</td>
<td>1</td>
<td>W, D</td>
<td>2 AC, 1SC, StC</td>
</tr>
<tr>
<td>GR-60</td>
<td>Yakima Mine</td>
<td>FS</td>
<td></td>
<td></td>
<td>none</td>
<td>1AC, several P</td>
</tr>
<tr>
<td>GR-217</td>
<td>Blue Gulch Prospect</td>
<td>FS</td>
<td></td>
<td></td>
<td>none</td>
<td>1AC; P</td>
</tr>
<tr>
<td>GR-220</td>
<td>Oregon Group</td>
<td>P, FS</td>
<td></td>
<td></td>
<td>none</td>
<td>2 AO (minor)</td>
</tr>
<tr>
<td>GR-221</td>
<td>McCrea Prospect</td>
<td>FS</td>
<td></td>
<td></td>
<td>none</td>
<td>1AO</td>
</tr>
<tr>
<td>GR-222</td>
<td>Echo Mine</td>
<td>FS</td>
<td></td>
<td></td>
<td>none</td>
<td>1AC; several C(?)</td>
</tr>
<tr>
<td>GR-223</td>
<td>Rattlesnake Ridge Prospect</td>
<td>FS</td>
<td></td>
<td></td>
<td>none</td>
<td>several minor T and P</td>
</tr>
<tr>
<td>K4260001</td>
<td>Looking Glass</td>
<td>FS</td>
<td></td>
<td></td>
<td>none</td>
<td>4AO (one partially gated)</td>
</tr>
<tr>
<td>K7250002</td>
<td>Carey Terese</td>
<td>FS</td>
<td></td>
<td></td>
<td>none</td>
<td>3AC, several P</td>
</tr>
<tr>
<td>K7260001</td>
<td>Unnamed Prospect</td>
<td>FS</td>
<td></td>
<td></td>
<td>none</td>
<td>2AC, several P, C</td>
</tr>
<tr>
<td>K7260002</td>
<td>Unnamed Prospect</td>
<td>FS</td>
<td></td>
<td></td>
<td>none</td>
<td>1AC, several P</td>
</tr>
<tr>
<td>K7260003</td>
<td>Unnamed Prospect</td>
<td>FS</td>
<td>1</td>
<td>W</td>
<td>1AC, P, several T</td>
<td></td>
</tr>
<tr>
<td>K7260005</td>
<td>Josephine or Juan Claim</td>
<td>FS</td>
<td></td>
<td></td>
<td>none</td>
<td>2AC</td>
</tr>
<tr>
<td>K8080002</td>
<td>Unnamed Prospect</td>
<td>FS</td>
<td></td>
<td></td>
<td>none</td>
<td>1AC</td>
</tr>
<tr>
<td>K8080004</td>
<td>Unnamed Prospect</td>
<td>FS</td>
<td>1</td>
<td>D</td>
<td>2AO, 3AC, ISC</td>
<td></td>
</tr>
<tr>
<td>K8150001</td>
<td>Jack Pot Prospect</td>
<td>FS</td>
<td></td>
<td></td>
<td>none</td>
<td>1AC, several P, placer gullies</td>
</tr>
<tr>
<td>K8150002</td>
<td>Eve Prospect</td>
<td>FS</td>
<td></td>
<td></td>
<td>none</td>
<td>placer trenches, pits</td>
</tr>
<tr>
<td>K8160001</td>
<td>Unnamed Prospect</td>
<td>FS</td>
<td></td>
<td></td>
<td>none</td>
<td>placer workings</td>
</tr>
</tbody>
</table>
Table 2.1-1 (continued). Summary of properties visited in the Florence and Rapid River areas.

<table>
<thead>
<tr>
<th>Site Number</th>
<th>Mine Name</th>
<th>Surface Owner</th>
<th>Water Samples</th>
<th>Solid Samples</th>
<th>Environmental Concerns</th>
<th>Physical Conditions/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>K8160002</td>
<td>Micro Gold II</td>
<td>FS</td>
<td>none</td>
<td>OPR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>no site #</td>
<td>Unnamed adit</td>
<td>FS</td>
<td>none</td>
<td>adit shown on west side Rapid River; did not find any workings</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reference sample — on Rapid River, 1⁄4 mile south of pack bridge across West Fork of Rapid River</td>
<td>FS</td>
<td>1</td>
<td>none</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reference sample — on West Fork of Rapid River, at pack bridge</td>
<td>FS</td>
<td>1</td>
<td>none</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1939), and Close and others (1982), and unpublished reports on individual deposits. Bennett (1980) discussed the geochemistry of sediments derived from Idaho batholith rocks similar to those that underlie much of the study area. A brief description of the geologic framework of the area follows.

Most of the mines and prospects in the Florence area are hosted by granitic rocks of the Cretaceous Idaho batholith (Figure 2.2-1). This area is near the Salmon River suture and the western margin of the batholith (Mitchell, 1996). The granitic rocks in the Florence area are mostly biotite granodiorite, which forms the bulk of the Atlanta lobe of the batholith (Lewis and others, 1987). The border zone of the batholith consists of older tonalitic rocks, many of which are foliated (Stanford, 1996a, 1996b; Mitchell, 1996). A roof pendant of Paleozoic(?) or Precambrian metasedimentary rocks is to the east of the Florence area (Stanford, 1996c; Mitchell, 1996; Lund and Esparza, 1990). The most prevalent ore deposits in the area are gold-silver veins, with or without base metals. These veins are probably related to the intrusion of the Idaho batholith (Snee and Lund, 1984).

The mines in the Rapid River area are in rocks of the Permo-Triassic Seven Devils Group, in associated sedimentary rocks or intrusive rocks (Vallier, 1977; Stanford, 1996b; Mitchell, 1996), or in younger intrusive rocks of Triassic and Jurassic age (Gaston and Bennett, 1979; Stanford, 1996b; Hamilton, 1963). The Seven Devils Group formed in a Permian to Late Triassic island arc that later collided with the North American continent (Mitchell, 1996; Vallier, 1995). Rocks mapped by Hamilton (1963) as the Riggins Group are probably higher-grade metamorphic equivalents of the Seven Devils Group (Lund and others, 1993; Mitchell, 1996).

The Rapid River thrust is a major north-trending fault that separates rocks of the Seven Devils Group from higher grade rocks (Hamilton, 1963; Lund and others, 1993; Stanford, 1996b). Northerly trending faults near the boundary between the North American continent and the Blue
Figure 2.2-1a. Geology of the properties in Florence area and vicinity, Idaho (Stanford, 1996a). T_Ph = Triassic or Permian(?) hornblende gneiss and schist; T_Pc = Triassic or Permian(?) calc-silicate gneiss; T_Psd = Late Triassic and Early Permian(?) Seven Devils Group; Kt, Ktf, Ktgn = Cretaceous tonalite; Kgd = Cretaceous granodiorite; Tcb, Ti, Tgn = Miocene Columbia River Basalt Group; Tsi = Miocene lacustrine and fluvial sediments; QTu = Quaternary alluvium and colluvium, undivided.
Figure 2.2-1b  Geology of properties in the Florener and Rapid River areas (Stanford, 1996b). Pr f1) = Paleozoic(?) to Middle Proterozoic metasedimentary rocks, sqs = cf, rfa, rt, rem, rs = Mesozoic(?) Riggins Group, T. Ped, T. vs = Triassic and Early Permian(?) Seven Devils Group, us = Triassic(?)/limestone, my = Mesozoic(?) mylonitic rocks; T. J., T. m = Triassic Martin bridge Formation, T. Jd = Middle Jurassic and Late Triassic intrusive rocks; Kpgr = Cretaceous to Permian(?)/gunn complex, Kkr = Cretaceous troilite-jennite, Kgd = Cretaceous granodiorite, Kgr = Late Cretaceous orthogneiss complex, Kfgd = Late Cretaceous foliated granodiorite, Tg = Eocene granite; Tdh = Eocene diorite; Ta = Eocene andesite dikes, Tjp = Eocene rhyolite porphyry plugs and dikes; Tch, Tt, Tug = Miocene Columbia River Basalt Group, Qg = Quaternary glacial deposits; Qd = Quaternary talus; Qal = Quaternary alluvium.
Figure 2.1-1c. Geology of properties in the vicinity of the Florence area (Stanford, 1996c). PzZq = Paleozoic(?) to Late Proterozoic quartzite and metaconglomerate; PzZa = Paleozoic(?) to Late Proterozoic metavolcanic sequence; PzZsm = Paleozoic(?) to Proterozoic garnet-biotite-muscovite schist and marble; Kg = Cretaceous muscovite-biotite granite; Kt = Late Cretaceous tonalite; Kfgd = Late Cretaceous foliated granodiorite; Qu = Quaternary surficial deposits, undivided.
Mountains island arc show recurrent movement, with the latest offset being northward strike-slip movement (Mitchell, 1996). North-northeast-trending, high-angle normal faults cut the plutonic rocks in the eastern part of the study area (Mitchell, 1996; Lund and others, 1993; Stanford, 1996a, 1996b, 1996c).

2.3 ECONOMIC GEOLOGY

2.3.1 General Characteristics of the Ore

Most of the lode mines in the Florence area consist of gold-bearing quartz veins or veinlets in granitic rocks of the Idaho batholith (Figure 2.2-1). Pyrite and arsenopyrite were sometimes present in the quartz (Reed, 1939). The mineral occurrences in the Rapid River area are in tactites, volcanogenic lenses, or mineralized shear zones. These deposits were prospected for gold and copper (Close and others, 1982).

Production was recorded from twelve lode mines in the study area, but no mine produced over 500 tons of ore between 1900 and 1982. All of these mines produced gold and silver. Three of these mines also reported placer production. One open pit mine operated after 1982, but the production from this property is not known.

2.3.2 Summary of Mill Development

The location and history of ore processing mills in the study area is important because a major source of environmental problems in many mining camps is old mill tailings disposal sites. These problems include high metal loadings, which could contaminate waterways, and fine sediment, which could increase loading of the streams or provide a source of wind-blown material. At one time or another, mills were present at the following properties in the study area:

- Micro Gold II
- Hi Yu Mine
- Banner Mine
- Poorman Mine
- Ozark Mine
- Waverly Mine
- Big Three Mine
- Gilt Edge Mine
- Golden Dike Prospect
- Bear Track Mine
- Mother Lode Mine
- Yakima Mine
- Gold Bug Mine
At the Micro Gold II property, gold was recovered by shaker tables and amalgamation. The site has been reclaimed.

A five-stamp mill and two arrastras were working at the Hi Yu Mine in 1882. By 1895, the Hi Yu ore was processed at a custom mill. A new five-stamp mill was installed at the end of 1897. In 1899, more stamps were added to the mill. Apparently that mill was later removed. A new owner installed a one-stamp mill in 1939.

A Huntington mill, including a grizzly and crusher, was installed at the Banner Mine in 1897. The mill, which replaced a previous mill, was designed to have a capacity of 20 to 25 tons per day (tpd). Wilfley tables were added to the mill the following year. In 1899, the mill was destroyed by fire. Two 5-foot Huntington mills were installed in 1900. By the late 1930s, the mill had been dismantled.

A five-stamp mill was brought to the Poorman Mine in 1898. The mill operated for only a short time and was later sold.

In October of 1897 the Ozark Mine put a five-stamp mill into operation. The mill was remodeled the following year. This mill was described as having 850-pound stamps that dropped ninety times per minute. In 1927, a new 20-tpd stamp mill was probably purchased for this property. The remains of a stamp mill and a small Huntington mill are still at the site, but no tailings were found.

The Waverly Mine had a two-stamp mill on the property by October of 1897. The company reportedly ordered a new five-stamp mill in November 1897, but it is not known whether this was ever actually used. In 1919, the mine apparently had a 10-tpd Kinkade oscillating rotary mill.

The Big Three Mine had a one-stamp mill in the 1920s, and the ore was treated by amalgamation. The stamp mill was later replaced by a 20-tpd rod mill. The rod mill was removed from the property in the 1940s. No tailings were noted at the site.

A three-stamp Merrall mill was on the Gilt Edge property by 1905. In the late 1930s, the old stamp mill was in disrepair. This mill was later moved to the Mother Lode Mine, but was never operated.

Ore from the Golden Dike was crushed in a small home-made rod mill, and the crushed material was run over a short sluice.

In 1904 the Bear Track Mine had a two-stamp triple-discharge mill.

There was a three-stamp mill at the Mother Lode Mine (moved there from the Gilt Edge), but it apparently never operated.
Part of the structure for what may have been a stamp mill was found at the Yakima Mine.

A small pilot mill was reportedly installed on the Gold Cross claim, which was part of the Gold Bug Group.

2.4 HYDROLOGY AND HYDROGEOLOGY

The study area covers the Forest Service lands in parts of the drainages of the Salmon and Rapid rivers (Figure 2.1-1). All of the streams in the study area flow into one of these rivers, and the Rapid River flows into the Little Salmon River, which is a tributary to the Salmon River.

As noted, a number of the mines in the study area are hosted by granitic rocks of the Idaho batholith. Most of the batholith rocks do not contain significant values of base metals. Table 1.5-3 (based on 384 samples taken from the southern part of the Atlanta lobe of the batholith) shows these rocks contain 60 ppm zinc, 18 ppm lead, and 6 ppm copper. Water discharges from the mines in the area reflect the metal content of the underlying rocks.

To test how the metal content of the country rock was impacting stream waters, two reference water samples were collected. The chemical analyses for these samples are shown in Tables 2.4-1 and 2.4-2, along with water quality standards suggested by the Environmental Protection Agency (EPA). The following reference water samples were collected:

- K4250001—Rapid River, ¼ mile south of pack bridge
- K4250002—West Fork of Rapid River, at pack bridge

These samples did not exceed any standards in either the dissolved metals or the total recoverable metals tests.

2.5 SUMMARY OF THE FLORENCE AND RAPID RIVER STUDY AREA

2.5.1 Summary of Environmental Observations

Most of the samples from properties with water discharge exceed EPA water standards for one or more elements (Tables 2.5-1 and 2.5-2). Water quality variances include significant amounts of iron and manganese at the Ozark Mine; aluminum, iron, and manganese at the Waverly Mine; cadmium, iron, and manganese at the Big Three Mine; and iron and cadmium at the Poorman Mine. Iron, often accompanied by manganese, in excess of one or more water quality standards is the most prevalent water quality variance in the Florence and Rapid River study area. At four out of the nine properties sampled, cadmium also exceeds the one or more standards. The elements detected in the water samples are also found in the rock units underlying the drainages.
Table 2.4-1. Dissolved metals in reference water samples from the Florence and Rapid River study area, Nez Perce National Forest.

<table>
<thead>
<tr>
<th>Field No.</th>
<th>Location</th>
<th>Al  (ppm)</th>
<th>As  (ppm)</th>
<th>Ba  (ppm)</th>
<th>Cd  (ppm)</th>
<th>Cr  (ppm)</th>
<th>Cu  (ppm)</th>
<th>Fe  (ppm)</th>
<th>Pb  (ppm)</th>
<th>Mn  (ppm)</th>
<th>Hg  (ppm)</th>
<th>Ni  (ppm)</th>
<th>Zn  (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>K4250001</td>
<td>Rapid River, 1/4 mile south of pack bridge</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>K4250002</td>
<td>West Fork of Rapid River, at pack bridge</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
</tbody>
</table>

**EXPLANATION**

Blank space equals no analysis

Below Detection Limit is ---

**WATER QUALITY STANDARDS**

<table>
<thead>
<tr>
<th>Source</th>
<th>Al (mg/L)</th>
<th>As (mg/L)</th>
<th>Ba (mg/L)</th>
<th>Cd (mg/L)</th>
<th>Cr (mg/L)</th>
<th>Cu (mg/L)</th>
<th>Fe (mg/L)</th>
<th>Pb (mg/L)</th>
<th>Mn (mg/L)</th>
<th>Hg (mg/L)</th>
<th>Ni (mg/L)</th>
<th>Zn (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary MCL</td>
<td>0.050</td>
<td>2.000</td>
<td>0.005</td>
<td>0.100</td>
<td></td>
<td>0.050</td>
<td></td>
<td></td>
<td>0.002</td>
<td></td>
<td>0.100</td>
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</tr>
<tr>
<td>Secondary MCL</td>
<td>0.05-0.2</td>
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<td>1.0000</td>
<td>0.300</td>
<td>0.05</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic Life, Acute</td>
<td>0.750</td>
<td>0.360</td>
<td>0.004-0.009</td>
<td>1.7-3.1</td>
<td>0.018-0.034</td>
<td>1.000</td>
<td>0.082-0.2</td>
<td>0.0024</td>
<td>1.4-2.5</td>
<td>0.12-0.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic Life, Chronic</td>
<td>0.087</td>
<td>0.190</td>
<td>0.001-0.002</td>
<td>0.21-0.37</td>
<td>0.012-0.021</td>
<td>0.003-0.008</td>
<td></td>
<td></td>
<td>0.000012</td>
<td>0.16-0.28</td>
<td>0.11-0.19</td>
<td></td>
</tr>
<tr>
<td>Estimated Detection Level (33% confidence)</td>
<td>0.10</td>
<td>0.0007</td>
<td>0.020</td>
<td>0.020</td>
<td>0.020</td>
<td>0.020</td>
<td>0.020</td>
<td>0.0025</td>
<td>0.020</td>
<td>0.00025</td>
<td>0.050</td>
<td>0.020</td>
</tr>
</tbody>
</table>

**mg/L = ppm**
Table 2.4-2. Total recoverable metals in reference water samples from the Florence and Rapid River study area, Nez Perce National Forest.

<table>
<thead>
<tr>
<th>Field No.</th>
<th>Location</th>
<th>Al (ppm)</th>
<th>As (ppm)</th>
<th>Ba (ppm)</th>
<th>Cd (ppm)</th>
<th>Cr (ppm)</th>
<th>Cu (ppm)</th>
<th>Fe (ppm)</th>
<th>Pb (ppm)</th>
<th>Mn (ppm)</th>
<th>Hg (ppm)</th>
<th>Ni (ppm)</th>
<th>Zn (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>K4250001</td>
<td>Rapid River, 1/4 mile south of pack bridge</td>
<td>0.006</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>0.160</td>
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<tr>
<td>K4250002</td>
<td>West Fork of Rapid River, at pack bridge</td>
<td>0.004</td>
<td>---</td>
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<td>---</td>
<td>0.110</td>
<td>0.0092</td>
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</tr>
</tbody>
</table>

**EXPLANATION**

Blank space equals no analysis
Below Detection Limit is ---

**WATER QUALITY STANDARDS**

<table>
<thead>
<tr>
<th>MCL Type</th>
<th>Al (mg/L)</th>
<th>As (mg/L)</th>
<th>Ba (mg/L)</th>
<th>Cd (mg/L)</th>
<th>Cr (mg/L)</th>
<th>Cu (mg/L)</th>
<th>Fe (mg/L)</th>
<th>Pb (mg/L)</th>
<th>Mn (mg/L)</th>
<th>Hg (mg/L)</th>
<th>Ni (mg/L)</th>
<th>Zn (mg/L)</th>
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</thead>
<tbody>
<tr>
<td>Primary MCL</td>
<td>0.05-0.2</td>
<td>2.000</td>
<td>0.005</td>
<td>0.100</td>
<td>0.050</td>
<td>0.002</td>
<td>0.10</td>
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</tr>
<tr>
<td>Secondary MCL</td>
<td>0.05-0.2</td>
<td>2.000</td>
<td>0.005</td>
<td>0.100</td>
<td>0.050</td>
<td>0.002</td>
<td>0.10</td>
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<td></td>
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</tr>
<tr>
<td>Aquatic Life, Acute</td>
<td>0.750</td>
<td>0.3600</td>
<td>0.004-0.009</td>
<td>1.7-3.1</td>
<td>0.018-0.034</td>
<td>1.000</td>
<td>0.082-0.2</td>
<td>0.0024</td>
<td>1.4-2.5</td>
<td>0.12-0.21</td>
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<td></td>
</tr>
<tr>
<td>Aquatic Life, Chronic</td>
<td>0.087</td>
<td>0.1900</td>
<td>0.001-0.002</td>
<td>0.21-0.37</td>
<td>0.012-0.021</td>
<td>0.003-0.008</td>
<td>0.000012</td>
<td>0.16-0.28</td>
<td>0.11-0.19</td>
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<tr>
<td>Estimated Detection Level (33% confidence)</td>
<td>0.0007</td>
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<td>0.020</td>
<td>0.020</td>
<td>0.05</td>
<td>0.0025</td>
<td>0.005</td>
<td>0.00025</td>
<td>0.05</td>
<td>0.02</td>
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Table 2.5-1. Dissolved metals in water samples from the Florence and Rapid River study area, Nez Perce National Forest. Numbers in bold-face type exceed one or more water quality standards.

<table>
<thead>
<tr>
<th>Field No.</th>
<th>Location</th>
<th>Al (ppm)</th>
<th>As (ppm)</th>
<th>Ba (ppm)</th>
<th>Cd (ppm)</th>
<th>Cr (ppm)</th>
<th>Cu (ppm)</th>
<th>Fe (ppm)</th>
<th>Pb (ppm)</th>
<th>Mn (ppm)</th>
<th>Hg (ppm)</th>
<th>Ni (ppm)</th>
<th>Zn (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>K4230001</td>
<td>Bullion Mine (EC-650), Adit 1</td>
<td>---</td>
<td>0.024</td>
<td>0.037</td>
<td>---</td>
<td>---</td>
<td>0.370</td>
<td>---</td>
<td>0.0080</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>K7250001</td>
<td>Big Three Mine (EC-656), Adit 1</td>
<td>---</td>
<td>0.0017</td>
<td>0.036</td>
<td>---</td>
<td>---</td>
<td>1.8000</td>
<td>---</td>
<td>0.1400</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>0.0920</td>
</tr>
<tr>
<td>K7250003</td>
<td>Poorman Mine (GR-56), Adit 2</td>
<td>---</td>
<td>---</td>
<td>0.029</td>
<td>---</td>
<td>---</td>
<td>0.1600</td>
<td>---</td>
<td>0.0220</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>K7250005</td>
<td>Lone Pine Mine (GR-54), Adit 1</td>
<td>---</td>
<td>---</td>
<td>0.021</td>
<td>---</td>
<td>---</td>
<td>0.028</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>K7260004</td>
<td>Unnamed Prospect K7260003, adit water</td>
<td>---</td>
<td>0.0061</td>
<td>0.024</td>
<td>---</td>
<td>---</td>
<td>0.0480</td>
<td>---</td>
<td>0.0094</td>
<td>---</td>
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</tr>
<tr>
<td>K8080001</td>
<td>Black Bear Mine (GR-44), Adit 3</td>
<td>---</td>
<td>---</td>
<td>0.066</td>
<td>---</td>
<td>---</td>
<td>0.220</td>
<td>---</td>
<td>0.0320</td>
<td>0.00042</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>K8080003</td>
<td>Waverly Mine (GR-32), adit water</td>
<td>0.31</td>
<td>0.032</td>
<td>0.077</td>
<td>---</td>
<td>---</td>
<td>2.200</td>
<td>---</td>
<td>0.2700</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>K8150003</td>
<td>Ozark Mine (GR-16), downstream</td>
<td>---</td>
<td>0.0076</td>
<td>0.046</td>
<td>---</td>
<td>---</td>
<td>1.900</td>
<td>---</td>
<td>0.2400</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>K8150004</td>
<td>Golden Dike Prospect (GR-13), Adit 1</td>
<td>---</td>
<td>0.0017</td>
<td>0.036</td>
<td>---</td>
<td>---</td>
<td>0.051</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

**EXPLANATION**

Blank space equals no analysis

Below Detection Limit is ---

**WATER QUALITY STANDARDS**

<table>
<thead>
<tr>
<th></th>
<th>Al (mg/L)</th>
<th>As (mg/L)</th>
<th>Ba (mg/L)</th>
<th>Cd (mg/L)</th>
<th>Cr (mg/L)</th>
<th>Cu (mg/L)</th>
<th>Fe (mg/L)</th>
<th>Pb (mg/L)</th>
<th>Mn (mg/L)</th>
<th>Hg (mg/L)</th>
<th>Ni (mg/L)</th>
<th>Zn (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary MCL</td>
<td>0.050</td>
<td>2.000</td>
<td>0.005</td>
<td>0.100</td>
<td>1.000</td>
<td>1.000</td>
<td>0.050</td>
<td>0.002</td>
<td>0.100</td>
<td>5.000</td>
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</tr>
<tr>
<td>Secondary MCL</td>
<td>0.05-0.2</td>
<td>0.360</td>
<td>0.004-0.009</td>
<td>1.7-3.1</td>
<td>0.018-0.034</td>
<td>1.000</td>
<td>0.082-0.2</td>
<td>0.0024</td>
<td>1.4-2.5</td>
<td>0.12-0.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic Life, Acute</td>
<td>0.750</td>
<td>0.360</td>
<td>0.004-0.009</td>
<td>0.001-0.002</td>
<td>0.021-0.021</td>
<td>0.003-0.008</td>
<td>0.000012</td>
<td>0.16-0.28</td>
<td>0.11-0.19</td>
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</tr>
<tr>
<td>Aquatic Life, Chronic</td>
<td>0.087</td>
<td>0.190</td>
<td>0.001-0.002</td>
<td>0.020</td>
<td>0.020</td>
<td>0.020</td>
<td>0.020</td>
<td>0.0025</td>
<td>0.050</td>
<td>0.020</td>
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<td>Estimated Detection Level (33% confidence)</td>
<td>0.10</td>
<td>0.0007</td>
<td>0.020</td>
<td>0.020</td>
<td>0.020</td>
<td>0.020</td>
<td>0.020</td>
<td>0.0025</td>
<td>0.050</td>
<td>0.020</td>
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</tbody>
</table>

**mg/L = ppm**
Table 2.5-2. Total recoverable metals in water samples from the Florence and Rapid River study area, Nez Perce National Forest.
Numbers in bold-face type exceed one or more water quality standards.

<table>
<thead>
<tr>
<th>Field No.</th>
<th>Location</th>
<th>Al (ppm)</th>
<th>As (ppm)</th>
<th>Ba (ppm)</th>
<th>Cd (ppm)</th>
<th>Cr (ppm)</th>
<th>Cu (ppm)</th>
<th>Fe (ppm)</th>
<th>Pb (ppm)</th>
<th>Mn (ppm)</th>
<th>Hg (ppm)</th>
<th>Ni (ppm)</th>
<th>Zn (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>K4230001</td>
<td>Bullion Mine (EC-659), Adit 1</td>
<td>0.042</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1.100</td>
<td>0.0150</td>
<td>--</td>
<td>--</td>
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</tr>
<tr>
<td>K7250001</td>
<td>Big Three Mine (EC-656), Adit 1</td>
<td>0.038</td>
<td>0.005</td>
<td>0.0110</td>
<td>0.012</td>
<td>2.100</td>
<td>0.1400</td>
<td>0.029</td>
<td>0.0900</td>
<td>--</td>
<td>--</td>
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</tr>
<tr>
<td>K7250003</td>
<td>Poorman Mine (GR-56), Adit 2</td>
<td>0.031</td>
<td>0.004</td>
<td>0.013</td>
<td>--</td>
<td>0.42</td>
<td>0.035</td>
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<tr>
<td>K7250005</td>
<td>Lone Pine Mine (GR-54), Adit 1</td>
<td>0.02</td>
<td>0.006</td>
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<td>0.060</td>
<td>0.0088</td>
<td>0.023</td>
<td>0.0068</td>
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<tr>
<td>K7260004</td>
<td>Unnamed Prospect K7260003, adit water</td>
<td>0.026</td>
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<td>0.0098</td>
<td>0.011</td>
<td>0.074</td>
<td>0.0140</td>
<td>0.028</td>
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</tr>
<tr>
<td>K8080001</td>
<td>Black Bear Mine (GR-44), Adit 3</td>
<td>0.045</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.120</td>
<td>0.0070</td>
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<td></td>
</tr>
<tr>
<td>K8080003</td>
<td>Waverly Mine (GR-32), adit water</td>
<td>0.044</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.760</td>
<td>0.1100</td>
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</tr>
<tr>
<td>K8150003</td>
<td>Ozark Mine (GR-16), downstream</td>
<td>0.039</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1.400</td>
<td>0.1400</td>
<td>--</td>
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<td>--</td>
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<td></td>
</tr>
<tr>
<td>K8150004</td>
<td>Golden Dike Prospect (GR-13), Adit 1</td>
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<td>--</td>
<td>--</td>
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<td>0.200</td>
<td>0.0140</td>
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</tbody>
</table>

**EXPLANATION**

| mg/L = ppm |

**WATER QUALITY STANDARDS**

<table>
<thead>
<tr>
<th>Field</th>
<th>Al (mg/L)</th>
<th>As (mg/L)</th>
<th>Ba (mg/L)</th>
<th>Cd (mg/L)</th>
<th>Cr (mg/L)</th>
<th>Cu (mg/L)</th>
<th>Fe (mg/L)</th>
<th>Pb (mg/L)</th>
<th>Mn (mg/L)</th>
<th>Hg (mg/L)</th>
<th>Ni (mg/L)</th>
<th>Zn (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary MCL</td>
<td>0.0500</td>
<td>2.000</td>
<td>0.005</td>
<td>0.100</td>
<td>0.0500</td>
<td>0.002</td>
<td>0.10</td>
<td>5.000</td>
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<tr>
<td>Secondary MCL</td>
<td>0.05-0.2</td>
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<td>0.009</td>
<td>1.7-3.1</td>
<td>0.018-0.034</td>
<td>1.000</td>
<td>0.082-0.2</td>
<td>0.002</td>
<td>0.12</td>
<td>1.4-2.5</td>
<td>0.12-0.21</td>
</tr>
<tr>
<td>Aquatic Life, Acute</td>
<td>0.750</td>
<td>0.3600</td>
<td>0.004-0.009</td>
<td>1.7-3.1</td>
<td>0.018-0.034</td>
<td>1.000</td>
<td>0.082-0.2</td>
<td>0.002</td>
<td>0.00012</td>
<td>0.16-0.28</td>
<td>0.11-0.19</td>
<td></td>
</tr>
<tr>
<td>Aquatic Life, Chronic</td>
<td>0.087</td>
<td>0.1900</td>
<td>0.001-0.002</td>
<td>0.21-0.37</td>
<td>0.012-0.021</td>
<td>0.003-0.008</td>
<td>0.0025</td>
<td>0.00025</td>
<td>0.05</td>
<td>0.02</td>
<td>1.4-2.5</td>
<td>0.12-0.21</td>
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**Estimated Detection Level (33% confidence)**

<table>
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<th>Ba (ppm)</th>
<th>Cd (ppm)</th>
<th>Cr (ppm)</th>
<th>Cu (ppm)</th>
<th>Fe (ppm)</th>
<th>Pb (ppm)</th>
<th>Mn (ppm)</th>
<th>Hg (ppm)</th>
<th>Ni (ppm)</th>
<th>Zn (ppm)</th>
</tr>
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<tbody>
<tr>
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<td>0.020</td>
<td>0.020</td>
<td>0.020</td>
<td>0.020</td>
</tr>
</tbody>
</table>
2.5.2 Mine Waste Samples

Samples were collected from most of the properties where the mine waste dump impinged on an active waterway (Tables 2.5-3 and 2.5-4). As expected, many of these samples contain metal loadings, including arsenic, copper, lead, and zinc, which exceed the Clark Fork Superfund Background Levels.
Table 2.5-3. Element screen for dump samples from properties in the Florence and Rapid River study area, Nez Perce National Forest.

<table>
<thead>
<tr>
<th>Field No.</th>
<th>Location</th>
<th>Al (ppm)</th>
<th>As (ppm)</th>
<th>Ba (ppm)</th>
<th>Cd (ppm)</th>
<th>Cr (ppm)</th>
<th>Cu (ppm)</th>
<th>Fe (ppm)</th>
<th>Pb (ppm)</th>
<th>Mn (ppm)</th>
<th>Hg (ppm)</th>
<th>Ni (ppm)</th>
<th>Zn (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>K7250004</td>
<td>Poorman Mine (GR-56), Adit 2 dump</td>
<td>NA</td>
<td>110</td>
<td>280.00</td>
<td>2.60</td>
<td>9.2</td>
<td>5.6</td>
<td>26</td>
<td>40.0</td>
<td>410.0</td>
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<td>85.0</td>
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<tr>
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<td>Unnamed Prospect K8080004, Adit 5 dump</td>
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<td>510.00</td>
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<td>7.6</td>
<td>4.3</td>
<td>24000</td>
<td>27.0</td>
<td>340.0</td>
<td>6.5</td>
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Clark Fork Superfund Background Levels (mg/Kg) = ppm

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<th></th>
<th>As</th>
<th>Cd</th>
<th>Pb</th>
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<tr>
<td>U.S. Mean Soil</td>
<td>6.7</td>
<td>0.7</td>
<td>20.0</td>
</tr>
<tr>
<td>Helena Valley Mean Soil</td>
<td>16.5</td>
<td>0.2</td>
<td>11.5</td>
</tr>
<tr>
<td>Missoula Lake Bed Sediments</td>
<td>NA</td>
<td>0.2</td>
<td>34.0</td>
</tr>
<tr>
<td>Blackfoot River</td>
<td>4.0</td>
<td>&lt;0.1</td>
<td>NA</td>
</tr>
<tr>
<td>Phytotoxic Concentration</td>
<td>100.0</td>
<td>100.0</td>
<td>1000.0</td>
</tr>
</tbody>
</table>

Explanation:
Below Detection Limit is ---
Not analyzed equals NA
Table 2.5-4. Toxicity Characteristic Leaching Procedure (TCLP) for dump samples from properties in the Florence and Rapid River study area, Nez Perce National Forest.

<table>
<thead>
<tr>
<th>Field No.</th>
<th>Location</th>
<th>As (ppm)</th>
<th>Cd (ppm)</th>
<th>Cr (ppm)</th>
<th>Pb (ppm)</th>
<th>Hg (ppm)</th>
<th>Se (ppm)</th>
<th>Ag (ppm)</th>
<th>Ba (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>K7250004</td>
<td>Poorman Mine (GR-56), Adit 2 dump</td>
<td>0.250</td>
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<td></td>
<td>2.200</td>
</tr>
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<td>K8080005</td>
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**EXPLANATION**
- Blank space equals no analysis
- Not Detected is ND
- Below Detection Limit is ---

**WATER QUALITY STANDARDS**

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<th>Pb (mg/L)</th>
<th>Hg (mg/L)</th>
<th>Se (mg/L)</th>
<th>Ag (mg/L)</th>
<th>Ba (mg/L)</th>
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3.0 NEZ PERCE NATIONAL FOREST MINE DESCRIPTIONS, FLORENCE AND RAPID RIVER AREAS

3.1 BULLION MINE (Site No. EC-650)
Alternate name—Harpster & Liddle; Bullion Lode Silver Mine.

3.1.1 Site Location and Access (Figure 2.1-1c)

The Bullion Mine is on the ridge between Bullion Creek and Halls Gulch in the SE¼ of the NE¼ of the SE¼ of section 33 (unsurveyed), T. 25 N., R. 4 E., on the Carey Dome 7.5-minute quadrangle (Figure 3.1-1). The property is accessible from the Salmon River by a pack trail originating at the Wind River pack bridge. The trail distance is about 2½-3 miles. The property can also be reached from the Florence area on Forest Service and all-terrain-vehicle roads that connect with the pack trail several miles above the mine. Elevation at the site is 3,900-4,100 feet. The mine is on acquired land administered by the Forest Service.

3.1.2 Geologic Features (Figure 2.2-1c)

The mine workings are on veins in granite. McKay (1998) reported the vein contained mostly silver with very little gold. Although Reed (1939, p. 39) did not visit the site, he noted:

The Bullion vein is reported to strike about east and to dip south at about 60°. Its thickness differs at different places, but reaches a maximum of about 5 feet.

3.1.3 Site History

McKay (1998, p. 196-198) noted:

The Bullion mine (then called the Harpster & Liddle) was one of the first lode mines discovered in Florence. It was first mentioned in a September 1865 letter. There were reportedly 53 claims made on this lode in 1865. The Fortune was the east extension of the claim. The first company organized to work the vein was the Florence Gold & Silver Mining Company, which owned 1,400 feet beginning near the point of first discovery. Two westerly extensions totaling 1,600 feet were followed by claims located by several individuals and companies. The company working the Bullion sank a shaft about 20 [feet] deep in the fall of 1865 and took out about 50 tons of ore from a vein that was over 10 feet wide. They then planned to run a tunnel to strike the vein 80 feet from the surface. During the winter of 1866-67 an opening was made to work the vein from the eastern extension. Reportedly quite a bit of money was taken out of the mine in 1867 and 1868. The company ran 300 feet of tunnel on the claim. Soon, however, the expense of packing ore over the mountains to the nearest quartz mill and the lack of machinery to work silver ore caused work to be suspended at the mine. The ore was rich, however; it was assayed at $15 and $17 per linear foot. In 1881 Dr.
Kelly of Lewiston still retained a large interest in the mine, but it had been inactive for a long time at that point.

The mine was apparently named for Abram Harpster and Robert O. Liddle. In an 1870 record, these two men plus Charles Schultz claimed three hill claims that were on the south side of Tanners Gulch and adjacent to the trail leading to the wire bridge.

The next period of activity at the Bullion mine was 1886-88, when S.S. Fenn, an Idaho Territorial delegate to Congress, began operations there. In the summer of 1886 he began hauling rock by pack animals from the upper tunnel at the Bullion to a new arrastra built by Mr. Beede at the mouth of Meadow Creek. Assays reported 242 ounces in silver and small amounts of gold per ton. By fall Fenn was shipping ore from the four-foot-wide vein to San Francisco. Despite having to haul the 1,300 tons of ore by mule to Grangeville, by team to Lewiston, and then by rail and water to the Selby Works in San Francisco, he reportedly received approximately $50 per ton after expenses. One carload of Bullion ore yielded 109 ounces per ton in silver, with a trace of gold; the average was reported to be 140 ounces. The treatment cost reported at that time was $13.50 per ton, and freight charges from Lewiston to San Francisco were $10.60 per ton. Fenn had an agreement with the pack trains returning from Warren to load their empty packs with Bullion ore. He also crushed Bullion ore that would not pay to ship to San Francisco in the arrastra on Meadow Creek. Development work included retimbering old workings and exploring new ground. According to a June 1887 letter, the Bullion cabins, garden, springs, and so on were located in a sheltered ravine on the west side of the trail to the Salmon River. Besides Fenn, who was the principal owner, other owners during this period included Weile & Wax (Mt. Idaho and Grangeville merchants) and Phil Cleary. By the summer of 1888 the mine was for sale, and various potential investors inspected it but were discouraged by the transportation difficulties.

The mine was idle in the early 1890s because of the relatively low price of silver. A new tunnel was begun on the Bullion in 1895, cutting the vein below a pinching of the vein that had frightened off many prospective buyers. In 1897 a four-foot vein was located that showed much silver. In 1898 owners Henry Wax of Grangeville and A.T. Reynolds had the Bullion surveyed for patent. The claim covered almost 20 acres and was developed by two tunnels (100 feet and 300 feet long) and an open cut.

The Bullion mine is mentioned infrequently after 1898. In 1918 a test shipment of concentrate containing silver was made from the mine. M. Katherine Cooke of Spokane owned the patented claim from at least 1931 until 1938.
3.1.4 Environmental Conditions

3.1.4.1 Site Features

The Bullion Mine was visited by John Kauffman on April 23, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 1, index 0:10:56-0:24:22). Documenting photographs are Roll 00K1, frames 1-6.

The property consists of two adits and several bulldozer trenches and cuts (Figure 3.1-2). Adit 1, the lower of the two, is caved with a seep of about 0.5 gallon per minute (Figure 3.1-3). Rails extend from the caved adit to the face of the waste dump (Figure 3.1-4). The dump measures 30 feet long, 25 feet wide, and about 15 feet thick. Adit 2 is about 150-200 feet above Adit 1. It is nearly caved, but has a narrow opening 4 feet wide by 1 foot high (Figure 3.1-5). The dump is very small, indicating a short tunnel.

One of the trenches is northwest of Adit 1 at a switchback on the road from Adit 1 to Adit 2. The trench curves up the slope for more than 100 feet and has a maximum depth of about 10 feet. Another large trench is directly above Adit 2 on the ridge top. This trench is 180 feet long with a sloping, south-facing headwall that is at least 20 feet high (Figure 3.1-6). Excavated material was pushed out both ends or piled on the southeast side of the trench. Two other cuts are at the ends of short access roads on the northeast side of the ridge. One is directly across the ridge from Adit 2, and the other is several hundred feet to the southeast. Although these might possibly be short caved adits, no waste dumps are associated with either site.

Pieces of a rusted compressor unit, including the flywheel (Figure 3.1-7), the boiler, and the compressor (Figure 3.1-8), are scattered on a topographic bench 200 feet west of Adit 1.

The total disturbed area at the site covers several acres.

3.1.4.2 Sample Locations

3.1.4.2.1 Solid Samples

No solid samples were collected.

3.1.4.2.2 Water Samples

Sample K4230001 was collected from the seep at Adit 1.

<table>
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<th>Sample No.</th>
<th>Location</th>
<th>Specific Conductivity (μs)</th>
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<th>pH</th>
<th>Flow (gpm)</th>
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<td>7.32</td>
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3.1.4.2.3 Analytical Results

Water Samples (Tables 2.5-1 and 2.5-2)

Sample K4230001 from the seep at Adit 1 exceeds the Secondary MCL for iron in the dissolved metals screen. In the total recoverable metals screen, iron exceeds the Secondary MCL and the Aquatic Life Acute standard.

3.1.5 Structures

There are no structures at the site.

3.1.6 Safety

Adit 2 has a narrow opening that could easily be enlarged to gain entry, although the tunnel is probably short. All-terrain-vehicle tracks at the site indicate that visitors had recently been to the mine and are likely to visit it in the future.
Figure 3.1-1. Location of the Bullion Mine, Idaho County, Idaho (U.S. Geological Survey Carey Dome 7.5-minute topographic map).
Figure 3.1-2. Sketch of the Bullion Mine.
Figure 3.1-3. Caved Adit 1 at the Bullion Mine, looking northeast. A small seep is flowing out of the caved adit (Roll 00K1, frame #3).
Figure 3.1-4. Looking southwest at the rails on the waste dump for Adit 1 at the Bullion Mine (Roll 00K1, frame #4).
Figure 3.1-5. Small opening into Adit 2 at the Bullion Mine (Roll 00K1, frame #6).
Figure 3.1-6. Large trench on the ridge top at the Bullion Mine. The headwall of the trench is about 20 feet high (Roll 00K1, frame #5).

Figure 3.1-7. Large metal flywheel and drive shaft for the steam compressor at the Bullion Mine. The waste dump for Adit is behind the large tree and to the right of the flywheel on the far slope (Roll 00K1, frame #2).
Figure 3.1-8. Old boiler and piston compressor at the Bullion Mine (Roll 00K1, frame #1).
3.2 BIG THREE MINE (Site No. EC-656)
Alternate name—Liberty Mine

3.2.1 Site Location and Access (Figure 2.1-1c)

The Big Three Mine is on the upper reaches of Witsher Creek near the center of the S½ of section 32 (unsurveyed), T. 25 N., R. 4 E., on the Carey Dome 7.5-minute quadrangle (Figure 3.2-1). Access from the Florence area is on FS Road 394 south and west to FS Road 9911, east and south on Road 9911 down the slope to FS Road 76327, and about ½ mile on Road 76327 to the mine. Road 76327 is not passable by vehicle; the mine, on Forest Service land, can be reached by foot or all-terrain vehicle, although there are several fallen trees across the road.

3.2.2 Geologic Features (Figure 2.2-1c)

The veins, striking N. 80° W. and dipping of 40-70° S., were in granitic country rock. The main vein was mostly crushed bedrock and gouge, with some quartz veinlets, and was a few inches to several feet thick (Reed, 1939).

3.2.3 Site History

McKay (1998, p. 193) reported:

E.M. Gillette located the mine in 1897. In 1919, the Big Three Gold Mining Company was incorporated. In 1922 the company treated a little gold ore in a one-stamp sampling mill, and the following year a lot of ore was treated by amalgamation in a test run. James G. Irvin was the president and manager of the company from then until at least 1939 (although Clarence W. Reeder owned it for some years in the early 1930s). In 1922 the claim had one 600-foot-long tunnel and another that was 90 feet long. The one-stamp mill was driven by a Pelton water wheel. In 1924 three tunnels were reported, with lengths of 100 feet, 600 feet, and 30 feet. Two of these tunnels were on the west side of Witsher Creek and two on the east side. [Note: this adds up to four tunnels, not three as stated in the previous sentence. Reed (1939) reported five tunnels, two on the east side and three on the west side of the creek.] Reuben Scott [re]located the claim in 1926, and the name of the mine was changed from the Big Three to the Liberty at this time. In the late 1930s there was a cabin at the mine (Gene Fuzzell tore this down under instructions from the Forest Service, probably in the 1940s). The rod mill (which replaced the earlier stamp mill) had a daily capacity of about twenty tons, and it was powered by water power when possible and otherwise by a gasoline engine. The gold was recovered on an amalgamating plate followed by a sluice box. The gold was 700 fine, and about two-thirds of the rest was silver. The two higher tunnels were 40 feet and 125 feet long and were about 37 feet apart vertically and connected by three raises (on the west side of the creek). The ore was reported to be $8 per ton (with gold at $20.67 per ounce). The lower
tunnel was 70 feet long and was 87 feet below the highest, apparently on a different vein than the two upper tunnels. One of the two tunnels on the east side of the creek was 500 feet long. The main vein was largely crushed bedrock and gouge, with some crushed quartz veinlets. Gene Fuzzel and his brother-in-law bought the claim in the 1940s and removed the rod mill. At that time the tunnels were [sic] in bad shape, and they found they could not work the claim. In 1988 features identified at the site included at least two adits, a stamp from the stamp mill, the old mill building, and four recent structures.

The second tunnel on the east side of the creek was about 50 feet up the dip from the larger tunnel (the 500-foot-long tunnel discussed above; Reed, 1939); the length of this tunnel is not known.

3.2.4 Environmental Conditions

3.2.4.1 Site Features

The Big Three Mine was visited by John Kauffman on July 25, 2000. A video segment describing the property is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 1, index 0:24:25-0:38:11). Documenting photographs are Roll 00K11, frames 1-9.

Mine workings found at the site include four caved adits and a caved shaft. Several buildings and a collapsed mill are also present (Figure 3.2-2).

Adit 1, probably the main tunnel at the mine, is on the east side of Witsher Creek at an elevation of about 4,900 feet. A shallow trough at the end of the access road marks the location of the adit (Figure 3.2-3). A minor seep of less than 0.1 gallon per minute trickles from the trough into the waste dump. Most of the dump, which measures 30 feet long, 12 feet wide, and 25 feet thick, is covered with a dense stand of saplings. Two 55-gallon barrels are on the dump, one apparently full and the other nearly empty. The contents of the barrels were not determined. Just below the waste dump are the remains of an old mill building. No tailings were noted in the area. The second adit on the east side of the creek (noted by Reed, 1939) was not found.

Adits 2 and 3, both caved, are on the west side of Witsher Creek near a cabin and outbuildings. The caved adits form shallow troughs, one above the other, on the slope (Figure 3.2-4). The waste dump for Adit 2 is 18 feet long, 18 feet wide, and 12 feet thick. An outhouse is on the north edge of the dump (Figure 3.2-5). Adit 3, just below the dump of Adit 2, has a dump measuring 15 feet long, 12 feet wide, and 15 feet thick.

Caved Adit 4 and the caved shaft are west of the cabin site and below the access road. The waste dump for Adit 4 is 15 feet long, 8 feet wide, and 10 feet thick. The shaft dump is similar in size, measuring 15 feet long, 6 feet wide, and about 10 feet thick.
Other prospect pits and possibly other adits may be in the area. The total disturbed area covers several acres.

3.2.4.2 Sample Locations

3.2.4.2.1 Solid Samples
No solid samples were collected.

3.2.4.2.2 Water Samples

Sample K7250001 was collected from the minor seep at Adit 1.

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<th>Temperature (° F)</th>
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<th>Flow (gpm)</th>
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<td>53</td>
<td>6.75</td>
<td>&lt;0.1</td>
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3.2.4.2.3 Analytical Results

Water Samples (Tables 2.5-1 and 2.5-2)

Sample K7250001 from Adit 1 exceeds the Secondary MCL and the Aquatic Life Acute standard for iron, and the Secondary MCL for manganese in the dissolved metals screen. In the total recoverable metals screen, cadmium equals or exceeds all standards, iron exceeds the Secondary MCL and the Aquatic Life Acute standard, manganese exceeds the Secondary MCL, and copper is at the lower limit of the Aquatic Life Chronic standard.

3.2.5 Structures

There are several buildings at the site. A cabin or large shed, probably used in part as living quarters, is near Adits 2 and 3 (Figure 3.2-6). A metal sink-and-cabinet unit, bedsprings, and firewood are stored inside the cabin (Figure 3.2-7). A small, open-sided storage shelter is near the cabin (Figure 3.2-8), and an outhouse, previously mentioned, is near Adit 2. Another small structure similar in appearance to an outhouse (Figure 3.2-9) is along the access road between the cabin and Adit 1. This building may have been for powder storage. The old mill building below the waste dump for Adit 1 has completely collapsed into the Witsher Creek drainage (Figure 3.2-10). Near the collapsed building is an old support frame for the stamp mill (Figure 3.2-11). One stamp was found near the support.

3.2.6 Safety

There are no safety hazards at the site.
Figure 3.2-1. Location of the Big Three Mine, Idaho County, Idaho (U.S. Geological Survey Carey Dome 7.5-minute topographic map).
Figure 3.2-2. Sketch of the Big Three Mine.
Figure 3.2-3. Caved Adit 1 at the Big Three Mine, looking northeast (Roll 00K11, frame #1).

Figure 3.2-4. Caved Adit 2 at the Big Three Mine, looking northwest. The large tree has fallen into the trough of the caved adit. The access road passes just above trough (Roll 00K11, frame #9).
Figure 3.2-5. Top of the waste dump for Adit 2 at the Big Three Mine, looking north. An outhouse is on the north side of the dump (Roll 00K11, frame #8).

Figure 3.2-6. Cabin or large shed at the Big Three Mine. Part of this building was probably used for living quarters (Roll 00K11, frame #5).
Figure 3.2-7. View inside the cabin or shed at the Big Three Mine. The metal sink-and-cabinet unit stored here is relatively modern, as are the bedsprings (Roll 00K11, frame #6).

Figure 3.2-8. Small shelter near the cabin at the Big Three Mine. The side facing to the right is open. A pile of boards and scrap wood is in the foreground (Roll 00K11, frame #7).
Figure 3.2-9. This small building at the Big Three Mine may have served as a powder house (Roll 00K11, frame #4).

Figure 3.2-10. Collapsed mill building on Witsher Creek below the waste dump for Adit 1 at the Big Three Mine (Roll 00K11, frame #2).
Figure 3.2-11. Frame for one stamp, found near the collapsed mill at the Big Three Mine. The stamp was lying on the ground a few feet from the frame (Roll 00K11, frame #3).
3.3 YAKIMA MINE (Site No. GR-60)

3.3.1 Site Location and Access (Figure 2.1-1b)

The Yakima Mine is on a tributary of Chessler Creek in the SW¼ of the SE¼ of section 36, T. 25 N., R. 3 E., on the Kelly Mountain 7.5-minute quadrangle (Figure 3.3-1). Chessler Creek is, in turn, a tributary of Robbins Creek. Access to the site from the Florence area is on FS Road 394 to its junction with FS Road 9911 on the edge of the Salmon River breaks. Road 9911 winds down the slope and connects with FS Road 9914 on the ridge east of Robbins Creek. The mine is about 1 mile northwest of the junction of Roads 9911 and 9914 near the end of Road 9914, and is on Forest Service land.

3.3.2 Geologic Features (Figure 2.2-1b)

The Yakima vein trended east and reached a maximum width of about 2 feet (McKay, 1998; Reed, 1939). The host rock is granite.

3.3.3 Site History

McKay (1998, p. 235-236) noted:

The claim was first mentioned in the summer of 1897, when it was worked by John P. Lefler, Lautz Herold, and Scott. By the fall of 1899 Claude Flint owned the Yakima and had drifted about 80 feet on the vein, which assayed $20-$100 per ton. In 1903, Flint and Reed were the owners of the claim. Flint continued to work on the claim, and in 1907 he drove a tunnel on it. By 1939 Eva Canfield and Jack Martin owned the mine. At that point it consisted of one inaccessible tunnel that was several hundred feet long. In the summer of 1939 a forest fire burned the mine buildings at the Yakima. Fred Johnson and Oscar Lynn worked on the Yakima. Johnson moved the arrastra from the Waverly mine to the Yakima by hauling it in a truck and then sledding it to the site on dirt. In the early 1970s the claim was owned by United Gold & Silver, Inc., of Spokane, which also owned the Waverly mine in Florence.

3.3.4 Environmental Conditions

3.3.4.1 Site Features

The Yakima Mine was visited by John Kauffman on July 25, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 1, index 0:38:15-0:45:17). Documenting photographs are Roll 00K11, frames 10-15.

Figure 3.3-2 is a sketch of the Yakima Mine site. An adit is noted on the topographic map, but only a large scarp was found along the access road at this location (Figure 3.3-3). There is also a
shallow trough on the slope above the scarp and several small prospect pits near a granite outcrop above the trough. A wide section of the access road in front of the scarp may be the waste dump. Cribbing beside the road along this wide section may have been an ore bin or loading chute, or possibly the upper part of a stamp mill (Figure 3.3-4). Collapsed timbers below the cribbing (Figure 3.3-5) may be a collapsed portion of the structure, or the timbers may be the collapsed entrance to an adit, although no waste dump was apparent. Two cabins and a shed at the end of the access road are described below. The disturbed area, including the cabin sites, covers about 1-1.5 acres.

3.3.4.2 Sample Locations

3.3.4.2.1 Solid Samples
   No solid samples were collected.

3.3.4.2.2 Water Samples
   No water samples were collected.

3.3.5 Structures

There are two cabins at the site, the first on the north side of the small tributary to Chessler Creek and the second at the end of the access road several hundred yards further to the northwest. The exteriors are in relatively good condition, and both cabins have metal roofs (Figures 3.3-6 and 3.3-7), but the interiors are in disrepair and are inhabited by mice and pack rats. A small shed and outhouse are behind the second cabin. Scrap wood and metal are in the gully next to the first cabin.

3.3.6 Safety
   There are no safety hazards at the site.
Figure 3.3-1. Location of the Yakima Mine, Idaho County, Idaho (U.S. Geological Survey Kelly Mountain 7.5-minute topographic map).
Figure 3.3-2. Sketch of the Yakima Mine site.
Figure 3.3-3. Large scarp along the access road, probably the caved Yakima adit noted on the topographic map (Roll 00K11, frame #14).

Figure 3.3-4. Log cribbing along the wide section of the access road across from the scarp at the Yakima Mine. This structure appears to have been an ore bin or loading chute (Roll 00K11, frame #13).
Figure 3.3-5  Collapsed timbers below the cribbing at the Yakima Mine. These timbers may be either part of the ore bin or the caved entrance to an adit (Roll 00K11, frame #12).

Figure 3.3-6  The first of the two cabins along the access road at the Yakima Mine, looking west (Roll 00K11, frame #11).
Figure 3.3-7. Looking northwest at the second cabin, which is at the end of the access road at the Yakima Mine. A small shed is behind the cabin (just to the right of the cabin) (Roll 00K11, frame #10).
3.4 LOOKING GLASS PROSPECT (Site No. K4260001)

3.4.1 Site Location and Access (Figure 2.1-1b)

The Looking Glass Prospect is on the southwest flank of Kelly Mountain in the SW¼ of section 17, the SE¼ of section 18, and the NE¼ of section 19, T. 24 N., R. 3 E., on the Riggins Hot Springs and Kelly Mountain 7.5-minute quadrangles (Figure 3.4-1). Access from Riggins is on the Salmon River Road to about 3 miles past Riggins Hot Springs and about 1 mile south of the mouth of Kelly Creek. A group of 33 claims extends for more than a mile along the west flank of Kelly Mountain (Figure 3.4-2). One adit is just off the east side of the road, two others are on the slope east of the road along a bulldozer trail, and the fourth is on the north side of an unnamed gully about 1,000 feet above the Salmon River. No trail was found to the fourth adit. All of the workings are on Forest Service land.

3.4.2 Geologic Features (Figure 2.2-1b)

The adits are on veins and altered zones in steeply dipping to vertical gneiss and schist with at least one zone of marble.

3.4.3 Site History

Nothing is known of the history of this site.

3.4.4 Environmental Conditions

3.4.4.1 Site Features

The Looking Glass Prospect was visited by John Kauffman on April 26 and May 8, 2000. A video segment documenting the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 1, index 0:45:20-1:00:09). Documenting photographs are Roll 00K1, frames 9-16, and frames 20-23.

Adit 1, shown on the Riggins Hot Springs topographic map, is about ½ mile south of the mouth of Kelly Creek and just above the Salmon River Road (Figures 3.4-3 and 3.4-4). This adit is shown on claim #23 on the claim map. The adit extends through gravel and colluvium into bedrock. The portal is boarded over (Figure 3.4-5), but an opening above the portal leads into the adit (Figure 3.4-6). The waste dump measures about 30 feet long, 10-15 feet wide, and 8 feet thick, and has been somewhat modified by bulldozer work. A possible second adit may be at this site. It is indicated by a scarp on the slope just south of Adit 1 and a small pile of material that could be a waste dump.

Adit 2, shown on the Riggins Hot Springs topographic map about ½ mile south of Adit 1, is about 200 yards up an old bulldozer road that angles northward up the slope from the Salmon River Road (Figure 3.4-7). The adit is on claim #29 on the claim map. Old boards that covered the
entrance have collapsed, and the adit is open (Figures 3.4-8 and 3.4-9). No discernible waste rock is associated with this adit, indicating it is short. Most of the material was probably removed or reworked when the road was bulldozed.

Adit 3 is 250 to 300 yards farther up the bulldozer trail and is shown on the Kelly Mountain topographic map. This adit is not shown on the claim map, but is probably on claim #24 or #25. The portal is caved, but there is a small opening into the adit that is partly covered with 2 by 4’s and plywood (Figures 3.4-10 and 3.4-11). The waste dump is very minor and insignificant, again indicating a short tunnel.

Adit 4 is about ½ mile due east of Adit 3 on the north side of an unnamed gully and is shown on the Kelly Mountain topographic map at an elevation of about 2,920 feet. The adit is open, although hidden behind a clump of brush (Figures 3.4-12 and 3.4-13). The small waste dump measures 15 feet long, 7 feet wide, and about 20 feet down the face. The thickness on the slope is no more than 5 feet (Figure 3.4-14). A minor amount of malachite staining occurs along the sheared rock above the portal.

A small prospect pit in marble was also found on the north side of the unnamed gully, at an elevation of about 2,700 feet (Figure 3.4-15).

The total disturbed area at these workings is less than 1 acre.

3.4.4.2 Sample Locations

3.4.4.2.1 Solid Samples
   No solid samples were collected.

3.4.4.2.2 Water Samples
   No water samples were collected.

3.4.5 Structures
   There are no structures at this site.

3.4.6 Safety

All of the workings have openings that could be entered. The Salmon River Road receives a significant amount of tourist travel. Consequently, some visitors to the adits are likely, especially to Adit 1, which is adjacent to the road.
Figure 3.4-1. Location of the Looking Glass Prospect, Idaho County, Idaho (U.S. Geological Survey Riggins Hot Springs and Kelly Mountain 7.5-minute topographic maps).
Figure 3.4-2. Claim map of the Looking Glass Prospect (from USFS property files, Slate Creek District).
Figure 3.4-3. Sketch of Adit 1 at the Looking Glass Prospect.
Figure 3.4-4. Looking east at Adit 1 of the Looking Glass Prospect. The Salmon River Road is in the foreground at the lower edge of the picture (Roll 00K1, frame #9).

Figure 3.4-5. Plywood-covered portal of Adit 1 at the Looking Glass Prospect. There is an opening into the adit above the sloughed debris on top of the portal (Roll 00K1, frame #10).
Figure 3.4-6. View of the opening into Adit 1 at the Looking Glass Prospect (Roll 00K1, frame #11).
Figure 3.4-7. Sketch of Adit 2 at the Looking Glass Prospect.
Figure 3.4-8. Looking east at open Adit 2 at the Looking Glass Prospect (Roll 00K1, frame #12).

Figure 3.4-9. View into Adit 2 at the Looking Glass Prospect (Roll 00K1, frame #13).
Figure 3.4-10. Looking east at Adit 3 at the Looking Glass Prospect (Roll 00K1, frame #14).

Figure 3.4-11. View into Adit 3 at the Looking Glass Prospect (Roll 00K1, frame #15).
Figure 3.4-12. Brush growing in front of Adit 4 at the Looking Glass Prospect, looking north (Roll 00K1, frame #20).
Figure 3.4-13. View into Adit 4 at the Looking Glass Prospect. Some minor malachite staining is visible along the sheared rock above the opening (Roll 00K1, frame #21).

Figure 3.4-14. Looking east at the small waste dump for Adit 4 at the Looking Glass Prospect. The dump extends down the slope in the foreground from about the center of the picture (Roll 00K1, frame #22).
Figure 3.4-15. Small prospect pit in marble west of Adit 4 at the Looking Glass Prospect (Roll 00K1, frame #23).
3.5 CAREY TERESE PROSPECT (Site No. K7250002)

3.5.1 Site Location and Access (Figure 2.1-1b)

This prospect is near the southeast end of the Florence district, in the NW¼ of the NW¼ of section 31 (unsurveyed; shown as Protraction Block (PB) 51 on the topographic map), T. 25 N., R. 4 E., on the Kelly Mountain 7.5-minute quadrangle (Figure 3.5-1). Access is by foot from FS Road 394 near its junction with FS Road 9911. An adit symbol is shown on the topographic map. The workings are on an old burn and are on Forest Service land.

3.5.2 Geologic Features (Figure 2.2-1b)

The workings are on quartz veins in granite.

3.5.3 Site History

A claim notice, dated October 1979, identifies this as the Carey Terese claim, posted by Robert Watson. The workings appear to predate that time period, but no prior history was found. The claim probably had a different name.

3.5.4 Environmental Conditions

3.5.4.1 Site Features

The Carey Terese was visited by John Kauffman on July 25, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 1, index 1:00:12-1:03:57). Documenting photographs are Roll 00K11, frames 16-18.

Three caved adits and several minor prospect pits were found (Figure 3.5-2). Adit 1, the main tunnel, has a few boards and beams from the portal standing in front of the caved debris (Figure 3.5-3). A trough extends up the slope behind the portal. Two rusted barrels filled with vein rock are near the portal (Figure 3.5-4). The waste dump is 60 feet long, 45 feet wide, and 12 feet thick. An old, rusted Pontiac car body is on the northwest face of the dump (Figure 3.5-5).

Adits 2 and 3 are a short distance east of Adit 1 and are also caved. These were apparently very short prospect adits, judging from the very small waste dumps (Figure 3.5-6). Several shallow prospect pits are also in the vicinity.

The total disturbed area covers less than 0.5 acre.

3.5.4.2 Sample Locations

3.5.4.2.1 Solid Samples

No solid samples were collected.
3.5.4.2.2 Water Samples
   No water samples were collected.

3.5.5 Structures
   No structures were found at the site.

3.5.6 Safety
   There are no safety hazards at the site.
Figure 3.5-1. Location of the Carey Terese Prospect, Idaho County, Idaho (U.S. Geological Survey Kelly Mountain 7.5-minute topographic map).
Figure 3.5-2. Sketch of the Carey Terese Prospect.
Figure 3.5-3. Looking south at caved Adit 1 at the Carey Terese Prospect. Boards from the old portal are under the horizontal log just left of the center of the picture. The two rusted barrels in the foreground contain fragments of vein rock (Roll 00K11, frame #16).

Figure 3.5-4. Waste dump for Adit 1 at the Carey Terese Prospect, looking west. An old Pontiac car body is on the face of the dump (Roll 00K11, frame #18).
Figure 3.5-5. Looking southeast at the small waste dump for Adit 3 at the Carey Terese Prospect. The dump is the small bare area near the center of the picture (Roll 00K11, frame #17).
3.6 POORMAN MINE (Site No. GR-56)
Alternate names—Sun Daun (or Dawn) Mine; Sundown.

3.6.1 Site Location and Access (Figure 2.1-1b)

The Poorman Mine is at the southwest edge of the Florence district near the center of the W¼ of the SW¼ of section 26, T. 25 N., R. 3 E., on the Kelly Mountain 7.5-minute quadrangle (Figure 3.6-1). A good road, probably FS Road 1860 or 1860A passes the mine, but this route was not taken. The route used was from FS Road 394 to the junction with FS Road 9929, north on FS Road 9929 past Looking Glass Butte to the ridge above the mine, and then downhill on foot less than ¼ mile to the mine. The Poorman can probably also be reached from Florence on FS Road 643 to its junction with Road 9929, then south about ½ mile to the ridge above the mine. The property is on Forest Service land.

3.6.2 Geologic Features (Figure 2.2-1b)

The mine workings are on quartz veins cutting granite. According to Lindgren (1900), the ore yielded equal parts of gold and silver. The quartz vein was similar to others in the Florence district, but also contained ruby silver and horn silver.

3.6.3 Site History

McKay (1998, p. 223-224) reported:

In 1894 C.B. Wood and others located the Poorman and adjacent claims (Silver King, Richmond, and Crown), and this discovery reportedly initiated Florence’s quartz boom. The Poorman was the first property to attract capital to Florence during this boom. In the summer of 1895 Wood sank a shaft to 50 feet and ran a tunnel to connect with the shaft and tap the vein at a depth of 60 feet below the surface. The property was bonded to J.F. Cameron of Wardner, Idaho, at that time. By late fall of that year the tunnel had reached a length of 198 feet, which was connected to the surface by a 60-foot-deep shaft. Another 50-foot-deep shaft sunk on the vein was planned. The ore averaged $35 per ton in gold and 1 to 400 ounces in silver. At the face of the tunnel, the vein was 5 feet wide.

By winter of 1895-96, Poorman was considered the most developed lode mine in Florence, and much ore was already stockpiled. The owners then were Phillips and Green. In early 1897 the Poorman group of mines was incorporated by George K. Reed (president), Ezra Baird, Charles Wood, M. Green, Charles Phillips, and J.A.S. Wood. That summer foreman Claude Flint had two shifts working on the Poorman tunnel and shaft, under the management of H.E. Heppner. Heppner bought one-seventh interest in the Poorman from Charles Phillips for $3,000 cash and a block of stock. During the summer, development work included blocking out ore ready for stoping, laying track, digging a good
A large house for employees was constructed, plus a building at the mouth of the tunnel that was used as a blacksmith shop and a place to store and frame timbers.

A five-stamp mill with pans and settlers (one man reports a Wilfley table) and a steam hoist were brought to the mine in 1898. They ran the mill in July for just a short time and then shut it down because it needed alterations (the mill was later sold to the Little Giant Company of Warren). During the summer of 1989 the tunnel reached over 500 feet in length, reaching a 12- to 15-foot-wide vein that yielded ore averaging $50-$60 per ton. That year the mine was out of debt and the mill was paid for. The Poorman Mining & Milling Company purchased two adjoining claims that had valuable timber, water, and right-of-way. Sale of stock yielded over $12,000 in cash. A total of 898 feet of underground workings had been completed, including a 140-foot shaft. Buildings at the mine included a bunkhouse, stable, blacksmith shop, carpenter and timber framing house, cookhouse, cold storage, woodshed, and shaft house, plus roadways and grading for hauling wood and timbers.

The excitement at the Poorman was short-lived, however, as no mention of it is found in contemporary newspapers or mining reports after 1898 until 1939, when John Reed described it as having been inactive for many years. He found large waste dumps at the site and inaccessible workings. According to Florence miner Gus Haldmage, the buildings still standing at the site in 1981 were the log office (which he re-roofed in 1930) and a two-seat outhouse. The twenty-four-bunk bunkhouse (40 feet x 60 feet) and the remaining eight or so buildings were burned down by Haldmage in about 1938 because they were seen as a hazard to cattle and because they were home to many packrats. The Poorman mine is now called the Sundown.

A recent claim notice at the site identified it as the Sun Daun (or possibly Dawn or Down) Mine, filed by Amador Silver and Gold Mining Co., Craigmont, ID. The notice was signed by David Lowery and dated July 22, 2000.

### 3.6.4 Environmental Conditions

#### 3.6.4.1 Site Features

The Poorman Mine was visited by John Kauffman on July 25, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 1, index 1:04:01-1:10:01). Documenting photographs are Roll 00K11, frames 19-22.

All of the workings found at the Poorman Mine are caved (Figure 3.6-2). These include two adits and two pits, which are either caved shafts or collapsed stopes. A cabin and outhouse are also at the site.
Adit 1, east of the cabin, is completely caved and has a minor seep that forms a small bog. A large scarp is on the low ridge behind the adit. The waste dump has been bulldozed to form a large flat area along the access road. On top of the low ridge are two pits, one about 15 feet in diameter and the other slightly smaller, that may be either caved shafts or collapsed stopes (Figure 3.6-3). Adit 2, behind the northwest corner of the cabin, is also caved. The resulting trough is filled with branches from a fallen tree (Figure 3.6-4). A minor seep flows from the caved adit. The waste dump extends out into the broad drainage, one of the headwater tributaries to Kelly Creek. The dump is 30 feet long and 18 feet wide, but only 4 feet thick (Figure 3.6-5). The disturbed area covers about 1 acre.

3.6.4.2 Sample Locations

3.6.4.2.1 Solid Samples

Sample K7250004 was collected from the thin waste dump for Adit 2, where the small creek flows around the nose.

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>Location</th>
<th>Analyzed (Yes/No)</th>
</tr>
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<tbody>
<tr>
<td>K7250004</td>
<td>Poorman Mine, Adit 2 dump</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3.6.4.2.2 Water Samples

Sample K7250003 was collected from the seep at Adit 2. Some of the water may be from the creek rather than from the adit.

<table>
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<tr>
<th>Sample No</th>
<th>Location</th>
<th>Specific Conductivity (μS)</th>
<th>Temperature (°F)</th>
<th>pH</th>
<th>Flow (gpm)</th>
<th>Analyzed (Yes/No)</th>
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<td>Poorman Mine, Adit 2</td>
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<td>40</td>
<td>6.7</td>
<td>minor seep</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3.6.4.2.3 Analytical Results

Solid Samples (Tables 2.5-3 and 2.5-4)

Sample K7250004 from the dump for Adit 2 has an elevated level of arsenic and slightly elevated levels of cadmium and lead in the element screen as compared to environmental standards. In the TCLP for metals test, minor amounts of arsenic are leaching from the sample.
Water Samples (Tables 2.5-1 and 2.5-2)

Sample K7250003 from Adit 2 does not exceed any standards in the dissolved metals screen. In the total recoverable metals screen, cadmium equals or exceeds both Aquatic Life standards and iron exceeds the Secondary MCL.

3.6.5 Structures

A log cabin with a corrugated metal roof is near the adits, and an outhouse is in the trees behind the cabin. The exterior of the cabin is in relatively good condition, although several of the roof panels are loose (Figures 3.6-6). Pieces of scrap metal and old boards are scattered around the cabin.

3.6.6 Safety

No safety hazards were found at the site.
Figure 3.6-1. Location of the Poorman Mine, Idaho County, Idaho (U.S. Geological Survey Kelly Mountain 7.5-minute topographic map).
Figure 3.6-2. Sketch of the Poorman Mine site.
Figure 3.6-3. Looking west at the pits on the low ridge above Adit 1 at the Poorman Mine. These may be caved shafts or collapsed stopes. The roof of the log cabin is in the distance (Roll 00K11, frame #22).
Figure 3.6-4. Looking east at caved Adit 2 at the Poorman Mine. The tree has fallen across the trough of the caved adit. The cabin is at the upper right (Roll 00K11, frame #20).

Figure 3.6-5. Looking north at the thin waste dump for Adit 2 at the Poorman Mine. The small creek flows around the far edge of the dump (Roll 00K11, frame #21).
Figure 3.6-6. Old log cabin at the Poorman Mine (Roll 00K11, frame #19).
3.7 LONE PINE MINE AND MOTHER LODE CLAIM (Site Nos. GR-54 and GR-55)

Although these sites have separate numbers, they are part of the same property, the Lone Pine Mine. They are the site described by Reed (1939) as the Holmadge, which name is probably a misspelling of “Halmadge,” the locator of the claims.

3.7.1 Site Location and Access (Figure 2.1-1b)

The Lone Pine Mine is at the head of Healy Creek in the SE¼ of the NW¼ of section 26, T. 25 N., R. 3 E., on the Kelly Mountain 7.5-minute quadrangle (Figure 3.7-1). The adit on the Mother Lode claim is about ¼ mile to the southwest along the ridge, which forms the divide for several drainages. The adit is in the headwaters of the West Fork of Robbins Creek. Access from the townsite of Florence is on FS Road 643 south to FS Road 9929. The Mother Lode adit is south of this junction less than ¼ mile, and the Lone Pine is just northeast of the junction. FS Road 76283, a short spur off Road 9929, leads to the main adit at the Lone Pine. The U.S. Geological Survey Kelly Mountain topographic map (1995) shows a square of patented land covering the Mother Lode and main Lone Pine adit, while the shaft at the Lone Pine is outside the patented claim block on Forest Service land. The topographic map provided by the Forest Service that shows roads and land status indicates a larger block of patented land, which includes the shaft. The base for the Forest Service map is dated 1977, so presumably the more recent USGS map shows the correct boundary for the claim block.

3.7.2 Geologic Features (Figure 2.2-1b)

The workings developed gold-bearing quartz veins in granite.

3.7.3 Site History

McKay (1998, p. 215-216) reported:
The Lone Pine claim of Gus Halmadge was located by Halmadge in 1935 (other claims included in the group included the Lone Pine Dump and the Moder Lode, aka Mother Lode). The Lone Pine was 2.5 miles southwest of Old Florence on the Allison Creek Road, west of the Gold Bug and north of the Poorman. The improvements on the three claims included the discovery cuts (all 6 feet deep), two 5-foot x 7-foot tunnels (200 feet and 126 feet to the face, and 40 feet and 133 feet to the face). A log cabin at the mine measured 20 feet by 50 feet. In 1939, a 70-foot-long tunnel exposed two veinlets that struck about north 65 degrees west and trended towards an old, caved-in shaft higher on the hill. The tunnel level was about 35 feet below the collar of the shaft. Halmadge did all the development work himself during the winter over the years, using an ore car and rail and bringing out the ore by hand. He never did send out any ore; he was planning to send some to the Bunker Hill but found that the cost of the canvas sacks was too high. He moved the three-stamp mill from the Gilt Edge to the Moder Lode, but
apparently he never set it up. In later years, the tunnel on the Moder Lode at the 
head of Cow Creek had a 240-foot-long tunnel. Gene Fuzzell reports that 
Halmadge took sixteen years to drive his tunnel 416 feet, leading Fuzzell to 
comment, “a gopher could do better than that.”

3.7.4 Environmental Conditions

3.7.4.1 Site Features

These properties were visited by John Kauffman on July 25 and 26, 2000. A video segment 
describing the sites is on Nez Perce National Forest Florence and Rapid River Areas Videotape 
(Tape 1, index 1:10:05-1:19:21). Documenting photographs are Roll 00K11, frames 23-24 
(Mother Lode) and 25-26 (Lone Pine), and Roll 00K12, frames 1-3 and 6-7 (Lone Pine).

The adit at the Mother Lode is beside Road 9929 and was driven northwest into the slope (Figure 
3.7-2). The portal timbers are upright, partly supported by a rock retaining wall, but the timbers 
beyond the portal have collapsed (Figure 3.7-3). There may be a short crawl space beneath some 
of the collapsed timbers, but a long trough up the slope indicates the adit is completely caved. 
The waste dump extends across the road and has probably been significantly modified. It is also 
overgrown with trees, making an estimate of its size difficult (Figure 3.7-4).

The Lone Pine Mine workings consist of two or three adits and a shaft at the head of Healy Creek 
(Figure 3.7-2). Adit 1 is open but gated and locked (Figure 3.7-5). Water flowing from the adit 
at 3-5 gallons per minute is the source of Healy Creek. The waste dump is 75 feet long, 60 feet 
wide, and 10 feet thick. The material has probably been spread out to form the large, open flat in 
front of the cabin at the site (Figure 3.7-6).

Adit 2 is on the slope above Adit 1 and just below Road 643. This tunnel is caved (Figure 3.7-7) 
and was probably short, as indicated by a minor waste dump. Two prospect pits, or very shallow 
shafts, are just west of the adit.

A possible third adit (probably the one noted on the topographic map) is indicated by a west-
trending trough on the slope behind the cabin. The entrance may be through the shed attached to 
the cabin.

A pit about 15 feet in diameter and 10 feet deep, probably a caved shaft, is northwest of the cabin 
along spur Road 76283 to the mine (Figures 3.7-8 and 3.7-9). The excavated rock forms a 
mound, measuring 15 feet long, 3-10 feet wide, and 4 feet high, around the north and east sides of 
the pit (Figure 3.7-10). A National Forest survey line, probably marking the boundary of the 
patented Lone Pine property, is just south of the pit.

Pieces of a disassembled three-stamp mill are at the junction of Roads 76283 and 76283A 
(Figures 3.7-11 and 3.7-12). This is probably the mill that was formerly at the Gilt Edge Mine.
3.7.4.2 Sample Locations

3.7.4.2.1 Solid Samples
No solid samples were collected.

3.7.4.2.2 Water Samples
Sample K7250005 was collected from the water flowing from Adit 1.

<table>
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<th>Sample No.</th>
<th>Location</th>
<th>Specific Conductivity (µS)</th>
<th>Temperature (°F)</th>
<th>pH</th>
<th>Flow (gpm)</th>
<th>Analyzed (Yes/No)</th>
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<tbody>
<tr>
<td>K7250005</td>
<td>Lone Pine Mine, Adit 1</td>
<td>19</td>
<td>47</td>
<td>7</td>
<td>70922</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3.7.4.2.3 Analytical Results

Water Samples (Tables 2.5-1 and 2.5-2)

Sample K7250005 does not exceed any standards in the dissolved metals or dissolved heavy metals screens. In the total recoverable metals screen, cadmium equals or exceeds all standards.

3.7.5 Structures

An old, maintained log cabin with an attached, open-sided shed (Figure 3.7-6) is next to Adit 1.

3.7.6 Safety

There are no significant safety hazards at the site. Adit 1 is closed with a locked, expanded-metal gate, and “Keep Out” is painted on the portal timbers. The Mother Lode adit appears to have a crawl space beneath some of the collapsed timbers, but complete caving beyond this apparent opening should discourage entry.
Figure 3.7-1. Location of the Lone Pine Mine and Mother Lode Claim, Idaho County, Idaho (U.S. Geological Survey Kelly Mountain 7.5-minute topographic map).
Figure 3.7-2. Sketch of the Lone Pine Mine site, including the Mother Lode adit.
Figure 3.7-3. Looking northwest at the portal of the Mother Lode adit of the Lone Pine Mine (Roll 00K11, frame #23).

Figure 3.7-4. Large pine trees (behind the dead tree) growing on the waste dump for the Mother Lode adit (Roll 00K11, frame #24).
Figure 3.7-5. Looking south at Adit 1 at the Lone Pine Mine (Roll 00K11, frame #25).

Figure 3.7-6. Log cabin and attached shed at the Lone Pine Mine. The flat in front of the cabin is probably bulldozed waste rock from Adit 1 and possible Adit 3 (Roll 00K11, frame #26).
Figure 3.7-7. Trough of caved Adit 2 at the Lone Pine Mine, looking south (Roll 00K12, frame #1).

Figure 3.7-8. Pit of the caved shaft at the Lone Pine Mine (Roll 00K12, frame #6).
Figure 3.7-9. Waste dump of the shaft at the Lone Pine Mine, looking south (Roll 00K12, frame #7).

Figure 3.7-10. Cam shaft, stamps, and ore feeder for the three-stamp mill near the Lone Pine Mine. The mill was probably the one moved from the Gilt Edge Mine (Roll 00K12, frame #2).
Figure 3.7-11. Discharge ports and boiler of the three-stamp mill near the Lone Pine Mine. The ore feeder is in the background at the right (Roll 00K12, frame #3).
3.8 UNNAMED PROSPECT (Site No. K7260001)

3.8.1 Site Location and Access (Figure 2.1-1b)

This prospect is on the ridge dividing the Kelly Creek and Greek Creek drainages, in the NE¼ of the NE¼ of section 27, T. 25 N., R. 3 E., on the Kelly Mountain 7.5-minute quadrangle (Figure 3.8-1). The site is on FS Road 643 and is accessible either from the Florence townsite to the northeast, or from FS Road 221 to the west. The site is on Forest Service land, about 1 mile by road west of the Lone Pine Mine.

3.8.2 Geologic Features (Figure 2.2-1b)

The workings are on thin quartz veins in granite.

3.8.3 Site History

Nothing is known about the history of this site.

3.8.4 Environmental Conditions

3.8.4.1 Site Features

The prospect was visited by John Kauffman on July 26, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 1, index 1:19:24-1:21:32). Documenting photographs are Roll 00K12, frames 4-5.

Two caved adits and several prospect pits (Figure 3.8-2) are at the site marked by two adit symbols on the topographic map. Caved Adit 1 (Figure 3.8-3), just below the road, has a small waste dump measuring 20 feet long, 14 feet wide, and 6 feet thick (Figure 3.8-4). The trough of caved Adit 2 is on the west edge of the road above Adit 1. The waste dump has been nearly destroyed by the road. This adit, shown trending northwest on the topographic map, actually has a west-southwest trend. Several shallow prospect pits and a bulldozer cut are on the west side of the saddle of the ridge. The disturbed area is minimal.

3.8.4.2 Sample Locations

3.8.4.2.1 Solid Samples

No solid samples were collected.

3.8.4.2.2 Water Samples

No water samples were collected.

3.8.5 Structures

There are no structures at the site.
3.8.6 Safety
There are no safety hazards at the site.
Figure 3.8-1. Location of Unnamed Prospect, Site No. K7260001, Idaho County, Idaho (U.S. Geological Survey Kelly Mountain 7.5-minute topographic map).
Figure 3.8-2. Sketch of Unnamed Prospect, Site No. K7260001.
Figure 3.8-3. Caved Adit 1 at Site No. K7260001, looking west (Roll 00K12, frame #4).

Figure 3.8-4. Small waste dump of Adit 1 at Site No. K7260001, looking east. The backpack is near the face of the dump (Roll 00K12, frame #5).
3.9 RED BIRD PROSPECT (Site No. GR-48)

Note: The property described in this section is at the approximate location reported for the Red Bird Prospect. It is possible, however, that these workings belong to some other prospect.

3.9.1 Site Location and Access (Figure 2.1-1b)

This prospect is near the head of Little French Creek along the center of the south edge of section 23, T. 25 N., R. 3 E., on the Kelly Mountain 7.5-minute quadrangle (Figure 3.9-1). A jeep trail extends north from the turnoff to the Lone Pine Mine and passes to the east of the site. This jeep road is labeled 76283A on the Forest Service version of the topographic map, and is the northward continuation of Road 9929. The site is on Forest Service land.

3.9.2 Geologic Features (Figure 2.2-1b)

The Red Bird explored a number of veinlets in granite (Reed, 1939).

3.9.3 Site History

McKay (1998, p. 225-226) noted:

The Red Bird claim was located at the head of French Creek. In December of 1895 it was owned by Sam Overlander and his partners and was yielding ore worth $12 per ton that was crushed in Florence’s custom mill. By January of 1897 F.E. Mix of Moscow and I.N. Foster of Spokane were the owners, and the next month there was a reported 75 tons of $30 ore on the dump. In March the bonders took the property and paid for the claim. A year later R.M. Sherman of the Vermont Loan & Trust Company of Spokane bought the Red Bird (rumors said for $45,000). Double shifts continued to sink a shaft on the vein below the existing workings and to drive ahead on the tunnel. The Red Bird mine was not mentioned again until the late 1930s, when John Reed reported that many veinlets had been prospected on the claim. He found a group of openings near the head of French Creek.

As mentioned above, the workings are at the head of Little French Creek, which probably corresponds with the “head of French Creek” in the early accounts. It is likely that the name “Little French Creek” postdates the early reports.

3.9.4 Environmental Conditions

3.9.4.1 Site Features

The Red Bird Prospect was visited by John Kauffman on July 26, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape
(Tape 1, index 1:21:35-1:27:25). Documenting photographs are Roll 00K12, frames 8-10, and 13.

Two adit symbols are shown east of Road 76283A and a shaft symbol is shown west of the road on the Kelly Mountain topographic map. Nothing was noted at the site where the two adit symbols are shown, even though any workings should have been relatively easy to find. At the location of the shaft symbol, one or two shafts and numerous pits and trenches were found (Figure 3.9-2).

The caved shaft forms a shallow pit in the bottom of a small, dry gully. It has log cribbing and is filled with water (Figure 3.9-3). The waste dump was built in the center of the gully. It measures 30 feet long, 10 feet wide, and 6 feet thick (Figure 3.9-4). A possible caved shaft (or sloughed-in pit) and a series of pits and trenches are a short distance northwest of the shaft along a northwest trend. Waste rock piled around the south edge of the possible shaft forms a dump 12 feet long, 6 feet wide, and 5 feet thick. Other pits and trenches are north and east of the first shaft, as noted on Figure 3.9-2.

An encampment along the jeep road north of the workings may be related to the mining activity. At this site, a camper is parked under an A-frame shelter (Figure 3.9-5). Also at the site are an old refrigerator, a storage bench, scrap metal, piles of boards, and a bulldozer blade. The site did not appear to have been used in the past several years.

The disturbed area, including the encampment, covers about 1 acre.

3.9.4.2 Sample Locations

3.9.4.2.1 Solid Samples
   No solid samples were collected.

3.9.4.2.2 Water Samples
   No water samples were collected.

3.9.5 Structures

The only structure is the A-frame shelter.

3.9.6 Safety

The shaft appeared to be caved, although it was difficult to be certain because of the water at the surface. The other pits, although as much as 10 feet deep, are sloughed-in and not a hazard.
Figure 3.9-1. Location of the Red Bird Prospect, Idaho County, Idaho (U.S. Geological Survey Kelly Mountain 7.5-minute topographic map).
Figure 3.9-2. Sketch of the workings at the Red Bird Prospect.
Figure 3.9-3. Cribbing of the caved, water-filled shaft at the Red Bird Prospect, looking east (Roll 00K12, frame #8).

Figure 3.9-4. Looking west across the waste dump for the shaft at the Red Bird Prospect (Roll 00K12, frame #9).
Figure 3.9-5. Encampment north of the Red Bird workings. A camper shell is stored under the A-frame shelter. A bulldozer blade is at the center right of the picture (Roll 00K12, frame #13).
3.10 UNNAMED PROSPECT (Site No. K7260002)

3.10.1 Site Location and Access (Figure 2.1-1b)

This prospect is on the east side of the ridge separating Little French Creek and Healy Creek, in the SW¼ of the NE¼ of section 23, T. 25 N., R. 3 E., on the Kelly Mountain 7.5-minute quadrangle (Figure 3.10-1). A shaft symbol marks the site on the topographic map. FS Road 76283A, the north continuation of Road 9929 and Road 76283, provides access to the prospect, although the road is inaccurately shown on the Forest Service engineering version of the topographic map. Fallen trees block the road just north of the encampment near the Red Bird Prospect, and the site had to be reached by foot. The prospect is on Forest Service land.

3.10.2 Geologic Features (Figure 2.2-1b)

This prospect is in granitic rocks of the Idaho batholith (Reed, 1939; Mitchell, 1996).

3.10.3 Site History

Nothing is known of the history of this site.

3.10.4 Environmental Conditions

3.10.4.1 Site Features

This prospect was visited by John Kauffman on July 26, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 1, index 1:27:29-1:30:26). Documenting photographs are Roll 00K12, frames 11-12.

Two pits and a caved adit were found at this site, along with several nearby shallow trenches and minor pits (Figure 3.10-2). One of the pits, about 10 feet in diameter and 8 feet deep, is near the location marked by the shaft symbol on the topographic map. If this was a shaft, it was shallow, judging by the small amount of material on the south rim of the pit. The other pit, 8 feet in diameter and 8 feet deep, is several hundred yards to the west along the access trail to the site.

The caved adit is in a wide gully below the access trail. The slope is relatively gentle with thick tree and brush cover. A trough extending 20-30 feet up the slope marks the adit location. The waste dump, built out onto the flat bottom of the gully, measures 50 feet long, 40 feet wide, and 4-6 feet thick (Figure 3.10-3). There is a small amount of water in the drainage above the dump, but the gully is dry below. A minor amount of scrap metal is on the dump.

The total disturbed area covers less than 0.5 acre.
3.10.4.2 Sample Locations

3.10.4.2.1 Solid Samples
   No solid samples were collected.

3.10.4.2.2 Water Samples
   No water samples were collected.

3.10.5 Structures
   No structures were found at the site.

3.10.6 Safety
   There are no safety hazards at the site.
Figure 3.10-1. Location of Unnamed Prospect, Site No. K7260002, Idaho County, Idaho (U.S. Geological Survey Kelly Mountain 7.5-minute topographic map).
Figure 3.10-2. Sketch of Site No. K7260002.
Figure 3.10-3. Looking northeast at the waste dump for the caved adit at Site No. K7260002 (Roll 00K12, frame #12).
3.11 UNNAMED PROSPECT (Site No. K7260003)

3.11.1 Site Location and Access (Figure 2.1-1b)

This unnamed prospect is east of the Gold Bug Mine in the N½ of the SE¼ of section 25, T. 25 N., R. 3 E., on the Kelly Mountain 7.5-minute quadrangle (Figure 3.11-1). Access from Florence is on FS Road 643 to Road 643C, then east on Road 643C about 1¼ miles. A short distance past point 6527, an old access road leads north several hundred yards to the site. The prospect is on Forest Service land and is marked by two adit symbols on the topographic map.

3.11.2 Geologic Features (Figure 2.2-1b)

The geology is probably similar to that at other properties in the Florence area, typically quartz veins and veinlets in granite.

3.11.3 Site History

Nothing is known about the history of this site.

3.11.4 Environmental Conditions

3.11.4.1 Site Features

This prospect was visited by John Kauffman on July 26, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 1, index 1:30:30-1:35:26). Documenting photographs are Roll 00K12, frames 14-16.

Although two adit symbols are shown on the topographic map, only one adit, a large pit, and several shallow trenches and pits were found (Figure 3.11-2). These workings are on the brush- and tree-covered north slope just below the ridge top. The adit is completely caved and has a seep of about 1 gallon per minute (Figure 3.11-3). A large pit, probably a collapsed stope, is at the head of the trough of the caved adit. The waste dump for the adit measures 100 feet long, 15 feet wide, and 30 feet thick on the nose (Figure 3.11-4). Several shallow trenches and a few shallow prospect pits are on the ridge above the adit and the large pit. A minor amount of scrap metal was found near the adit. The disturbed area at the site covers less than 1 acre.

3.11.4.2 Sample Locations

3.11.4.2.1 Solid Samples

No solid samples were collected.

3.11.4.2.2 Water Samples

Sample K7260004 was collected from the seep at the adit.
<table>
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<th>Specific Conductivity (μs)</th>
<th>Temperature (°F)</th>
<th>pH</th>
<th>Flow (gpm)</th>
<th>Analyzed (Yes/No)</th>
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<td>39</td>
<td>7</td>
<td>1</td>
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</table>

3.11.4.2.3 Analytical Results

Water Samples (Tables 2.5-1 and 2.5-2)

Adit water sample K7260004 does not exceed any standards in the dissolved metals screen. In the total recoverable metals screen, cadmium equals or exceeds all standards.

3.11.5 Structures

No structures were found at the site.

3.11.6 Safety

There are no safety hazards at the site.
Figure 3.11-1. Location of Unnamed Prospect, Site No. K7260003, Idaho County, Idaho (U.S. Geological Survey Kelly Mountain 7.5-minute topographic map).
Figure 3.11-2. Sketch of the workings at Site No. K7260003.
Figure 3.11-3. Looking south toward the caved adit at Site No. K7260003. A seep from the adit flows under the logs at the bottom right of the picture. Thick brush fills the trough of the caved adit (Roll 00K12, frame #14).
Figure 3.11-4. Looking northwest at the east side of the waste dump for the adit at Site No. K7260003. The sloping side of the dump extends to the right from the center of the picture (Roll 00K12, frame #15).
3.12 HI YU MINE (Site No. GR-49)
Alternate names—Hi-Yu; Hiyu; Hi You; Washington.

3.12.1 Site Location and Access (Figure 2.1-1b)

The Hi Yu Mine is near the confluence of Hi Yu Creek and Black Sand Creek in the NW¼ of the NW¼ of section 25, T. 25 N., R. 3 E., on the Kelly Mountain 7.5-minute quadrangle (Figure 3.12-1). Access from Florence is either on FS Road 643 to its junction with Road 643A, then east and north about ¼ mile to the mine, or directly on Road 643A, although this road is in rather poor condition in places and is best traveled by all-terrain vehicle. All of the workings are on Forest Service land.

3.12.2 Geologic Features (Figure 2.2-1b)

The vein system at the Hi Yu is 2-4 feet wide and consists of several quartz seams separated by soft, altered granite (Lindgren, 1900).

3.12.3 Site History

McKay (1998, p. 208-209) gave the following historical account of the Hi Yu:

The Hi-Yu vein was worked as early as 1872 as the Washington mine, and there was a five-stamp mill (reportedly the first in Florence) and two arrastra working its ore in 1882. It reportedly yielded $57,000 to over $100,000 at that time, with the richest ore coming from the 130-foot level. According to an 1899 account, the “happy-go-lucky owners” milled the ore in an arrastra, and after each clean-up they laid off and spent the proceeds in a “Hiyu spree” (in fact, in the late 1890s miners working underground in the Hi-Yu found dozens of old whisky bottles stashed away, including one made of glass in the shape of a log cabin and labeled “Log Cabin Bitters, 1860,” a favorite in early Florence). The shaft was abandoned, however, because of water, and the vein faulted and was lost in the upper workings. The owners, who were also placer miners, stopped the work. The mine was worked again beginning in the winter of 1895-96, when ore was milled at the custom mill. At the end of 1896 A. Walker bought the Hi-Yu, at which time 100 tons of $15 ore were in sight.

At the beginning of 1897, a crosscut tunnel was run on the Hi-Yu. The shaft was planned to follow the vein on its dip. In February Clem King and Mr. Tetherow of Spokane bonded the Hi-Yu for $4,000 and put in a hoist and sank on the old shaft. In April the crew struck rich ore in three places at the 50-foot level, and tapped in the lower tunnel 100 feet below. The vein was about 4 feet wide and the pay streak averaged 30 inches. Two shifts worked off and on through the summer. A wagon road was built up Black Sand Creek to the Banner [mine] that helped in hauling machinery to the Hi-Yu. A whim was built for the mine in August, and
that same month a strike on very rich free-milling ore was made in the tunnel. In late summer 1897 the Hi-Yu was sold under a sixty-day option to a syndicate of Coeur d'Alene capitalists, and C.B. King became president of the new Hiyu Gold Mining Company. The shaft was then down 90 feet, and the plan was to continue driving it 120 feet and then drift from there. Two hundred tons of ore were on the dump. The company installed a new five-stamp mill at the end of 1897.

The Hi-Yu passed into the control of an eastern syndicate (men with interests in the Brush Electric Company of Pittsburgh) under a bond of $60,000 in February of 1898. The company worked a crew of twelve to sixteen men the winter of 1898-99, which was about the only payroll in the camp that winter. At that time the mill was working ore from two large bodies of ore. The mill's capacity was only fourteen tons per day, but it reportedly operated with success, saving over 90 percent of the values on the plates, although in April a need for Wilfrey tables was reported and there was a shortage of fuelwood. A rich strike was made on the 90-foot level in April, where drifts ran east and west on the 160-foot-long vein that was 4 to 20 feet wide. The double-compartment incline shaft could be worked to the 500-foot level with the hoist the company had in place, and by May of 1899 the shaft was down 320 feet, making it the deepest developed property in Florence. Drifts totalling [sic] 250 feet were run east and west on the 200-foot level, and drifts were run east 120 feet and west 100 feet at the 300-foot level. The vein was 3.5-4 feet wide at the 300-foot level and averaged $30 per ton. In May the owners ordered a hoist, a new pump, more stamps for the mill (there were reportedly seven stamps at one time), and a 20-hp boiler for the mine. In November another strike was made on the east drift at a depth of 220 feet.

The Hi-Yu continued to change hands in the early 1900s. In spring of 1900 the company that owned it was based in Baltimore. In about 1902 the mine was in litigation. In late 1903 it was reported that the mine had been allowed to fill up with water, but the water was pumped out and work began again. By 1904, however, it was reported that the company ran short of funds when it needed to install expensive machinery in order to continue operating the mine.

From at least 1928 until 1930 Odle Paul of Whitebird owned the Hi-Yu mine. In 1936 it was owned by William A. Paul, and he discovered some rich veinlets along Hi-Yu Creek a short distance west of the old mine that trended north 85 degrees east and dipped steeply south. Several veinlets were exposed in a zone that was about 20 feet wide (the thickest was 4 inches). Paul had been doing ground sluicing on the claim since approximately 1919, and by 1939 he had installed a one-stamp prospect mill at the site.
3.12.4 Environmental Conditions

3.12.4.1 Site Features

The Hi Yu Mine was visited by John Kauffman on July 26, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 1, index 1:35:29-1:46:10). Documenting photographs are Roll 00K12, frames 17-25.

Features at this property include two adits, ditches, cuts, two apparent waste dumps, a cabin, and the remains of other buildings (Figure 3.12-2). The site has been modified by post-lode mining activity, mostly ditches and cuts that are probably related to placer activity. The two apparent dumps have no evidence of associated workings.

The two adits are caved or nearly caved, sloughed-in, and overgrown with brush. Adit 1, the lower of the two, has collapsed for about 50 feet from the original portal. Many of the old timbers and some cribbing line the resulting trough (Figure 3.12-3). At the head of the trough is a very small opening beneath a large boulder. This opening may lead into the adit. Along Hi Yu Creek in front of the adit is a broad flat area that is probably the bulldozed remnant of the waste dump. This area is 60 feet long, 20 feet wide, and about 6 feet thick. The old road to the adit ends on this flat (Figure 3.12-4).

Adit 2 is up the slope and offset to the south from Adit 1. This adit is completely caved, again forming a trough about 25-30 feet long on the slope (Figure 3.12-5). The waste dump is long, narrow, and somewhat irregular on top, measuring 50 feet long, 2-8 feet wide, and no more than 10 feet thick (Figure 3.12-6). Ditches parallel both sides of the dump for most of its length, and a section of flume pipe is in a cut across the end of the dump. On the slope above the two adits, at about the site marked by the shaft symbol on the topographic map, is a large flat area at the end of an access road. Material on the slope below the flat appears to be a waste dump. It may be the shaft dump, although no evidence of the shaft was found; the opening may have been backfilled.

Northeast of the above workings are an old log cabin, a partly collapsed shed, and a completely collapsed building; these are discussed in the Structures section. Extending off to the north-northwest from the cabin is a long rib of material that has the appearance of a waste dump (Figure 3.12-7), although no adit or shaft was found. This rib is over 100 feet long, 4-10 feet wide, and 6 feet thick. If any workings are present, they should be behind or near the cabin.

The total disturbed area covers several acres.

3.12.4.2 Sample Locations

3.12.4.2.1 Solid Samples

No solid samples were collected.
3.12.4.2.2 Water Samples
No water samples were collected.

3.12.5 Structures

The walls and roof of the old log cabin are intact (Figure 3.12-8), but the windows and doors are gone and the interior is in complete disrepair. The partly collapsed shed, also built with logs, is south of the cabin (Figure 3.12-9). The collapsed building is across the access road from the shed (Figure 3.12-10). A considerable amount of scrap metal and other old garbage is scattered around these buildings. An arrastra near these buildings is encased in concrete (Figure 3.12-11).

3.12.6 Safety

Potential hazards at the site are minimal. There may be a very small opening into Adit 1 that could be enlarged to gain entry, although some effort would be required. Many of the old boards around the buildings contain protruding nails.
Figure 3.12-1. Location of the Hi Yu Mine, Idaho County, Idaho (U.S. Geological Survey Kelly Mountain 7.5-minute topographic map).
Figure 3.12-2. Sketch of the Hi Yu Mine.
Figure 3.12-3. Collapsed section of Adit 1 at the Hi Yu Mine, looking southeast. Many of the old support timbers are in the trough of the caved adit (Roll 00K12, frame #19).

Figure 3.12-4. Flat area in front of Adit 1 at the Hi Yu Mine, probably the bulldozed waste dump, looking north (Roll 00K12, frame #20).
Figure 3.12-5. Trough of caved Adit 2 at the Hi Yu Mine, looking southeast. Much of the site is overgrown with brush similar to that seen in this picture (Roll 00K12, frame #17).
Figure 3.12-6. Looking northwest down the top of the waste dump for Adit 2 at the Hi Yu Mine. The narrow dump continues beyond the clipboard (near photograph center) for at least 30 feet (Roll 00K12, frame #18).

Figure 3.12-7. Long rib of material extending northeast from the cabin at the Hi Yu Mine. This appears to be a waste dump, although no adit or shaft was found associated with the feature (Roll 00K12, frame #22).
Figure 3.12-8. Log cabin at the Hi Yu Mine (Roll 00K12, frame #21).

Figure 3.12-9. Collapsing log shed at the Hi Yu Mine (Roll 00K12, frame #24).
Figure 3.12-10. Completely collapsed building at the Hi Yu Mine, looking west (Roll 00K12, frame #23).

Figure 3.12-11. Arrastra encased in concrete, near the buildings at the Hi Yu Mine (Roll 00K12, frame #25).
3.13 BANNER MINE (Site No. GR-51)
Alternate name—Esmeralda.

The Esmeralda was originally a separate property, but it became part of the Banner in 1900.

3.13.1 Site Location and Access (Figure 2.1-1b)

The Banner Mine is on the east side of Black Sand Creek in the NE¼ of the NW¼ of section 25, T. 25 N., R. 3 E., on the Kelly Mountain 7.5-minute quadrangle (Figure 3.13-1). Access from Florence is on FS Road 643 south to the junction with Road 643A, northeast on Road 643A along Hi Yu Creek about ¼ mile to the junction with Road 643A1, and south about ¼ mile on Road 643A1 to the mine. Road 643A is a poor jeep road, and Road 643A1 is an all-terrain-vehicle road. The Banner Mine workings (and the Gold Bug Mine) are on private land that is posted “No Trespassing.” These properties were not visited. Caretakers at the summer residence of the land owner declined permission to visit the workings at either site.

3.13.2 Geologic Features (Figure 2.2-1b)

The vein consisted of gold- and silver-bearing glassy, pure quartz up to 6 feet thick in altered granite, some of which was reported to be as rich as the quartz. The vein had a strike of N. 43° E. and a dip of 55° SE. Several minor faults crossed and, in places, offset the vein. The ore ran $50 per ton and contained 2½ ounces gold, 6-7 ounces silver, and very little pyrite (Lindgren, 1900).

3.13.3 Site History

McKay (1998, p. 188-191) reported the following on the history of the property:
The Banner Mine was one of the principal lode mines in Florence, and like the others, the most development work was done on it in 1897. The Banner claim was located on the south branch of Black Sand Creek, about 1.5 miles southwest of New Florence. It was located in 1894 by Robert J. McLean, who gave half-interest in the claim to Dan P. Dwight. The Banner group consisted of two claims, the Banner and the Esmeralda, adjacent to the north. In 1899 the ground was covered with dense underbrush and second-growth timber; timber for the mine had to be harvested about three miles to the south. . . . Much of the granite in the Banner mine was decomposed, so the development and stoping work was mostly done with picks instead of dynamite. The “Gold Bug-Banner group” was under the same ownership in the late 1890s, and it was composed of the Banner Group (Banner and Esmeralda claims) and the Gold Bug group (Gold Bug, Gold Cross, Mystery, Independence, Golconda, Little Chief, Faction [probably Fraction], and Tryangle [also spelled “Triangle”] claims). The Gold Bug claim was located a short distance southwest of the Banner.
The Banner mine is first mentioned as a producing mine in October of 1895, when owner Dan Dwight crushed 20 tons of free-milling ore from the Banner in the new custom mill 1.5 miles to the north and obtained $50 per ton. A few months later owners McLean and Dwight were asking $50,000 for the mine, which was developed by a 55-foot shaft and had a double shift working the claim. The returns continued to be good from the mine, as [and] in March the custom mill crushed 32 tons of ore that yielded $67 per ton. Other Florence miners were interested in their results, hoping that good news from the Banner might add value to every claim in the camp. Dwight and McLean continued work, including a drift 60 feet on the vein, until in June S.S. Glidden and F.R. Culbertson bought the Banner group and the Gold Bug for $20,000. Glidden and Culbertson were owners of the Poorman-Tiger mines in the Coeur d’Alene district and Glidden was interested in the Old National Bank of Spokane; they had the financial means to develop the mine further.

By the fall of 1896 a crew of ten men was working on the Banner mine, dwellings and other buildings had been constructed, and the owners planned to build a mill that would serve the Banner and Gold Bug mines. In October the Banner vein had been cut at a depth of 125 feet and showed a 12-foot paystreak, averaging $12-$20 per ton. Soon an upraise was driven to connect with the 55-foot discovery shaft. The crosscut tunnel at this time was 365 feet long, and it showed 8 feet of ore where the vein was cut. The gold from the Banner and Gold Bug groups was valued at $13.53 per ounce. The Banner was described as having the largest body of exposed ore in Florence (about 18 feet between walls).

In January of 1897 the Banner Gold Mining Company, under the local management of H.M. Glidden, let a contract to extend the existing 600-foot-long tunnel another four hundred feet. A contract was also let to sink the 100-foot-deep shaft another 100 feet. Drifts were run 200 feet each way on the 100-foot level. During the late winter and early spring several strikes of rich ore were made in the shaft and drifts, and the mill runs averaged over $50 per ton. The crews averaged fifteen to twenty men. By April, a hoist and boiler for the Banner were moved to the claim. The company planned to sink a 300-foot-deep shaft. The shaft was then 75 feet below the adit tunnel, with a vertical stoping depth of 185 feet. The ground was prospected 300 feet east and 100 feet west of the shaft by a tunnel driven on the vein that showed 18 inches to 8 feet of paying quartz. The company reported about 300 tons of ore on the dump (average $27 per ton) and over 2,500 tons in sight in the mine.

The next important development at the Banner was in July of 1897, when the owners of the Banner and Gold Bug contracted with Fraser & Chalmers of Chicago for a Huntington mill, including a grizzly and crusher, to be operated by steam power. The mill was designed to have a capacity of 20 to 25 tons per day.
A wagon road was built up Black Sand Creek to the Banner to help in hauling the machinery in. In September 32,000 pounds of machinery for the Banner was hauled through Grangeville on the way to Florence. A six-horse team pulled the mill's driving wheel. The old mill on the Banner saved about 60 percent of the values, but the new mill was expected to save 95 percent. The mill began operation under the management of R.C. Bishop in early October of 1897, reducing eighteen tons of ore per day from the Banner and the Gold Bug mines. In the first sixteen days, ore from the Banner yielded 19 pounds of gold (six gold bricks). A later run yielded 25 pounds valued at $4,000-$5,000. The ore reportedly averaged $12 per ton in gold and some silver, and it could be mined and milled for $3 per ton or less. At the end of 1897, the Banner and Gold Bug mines were working forty men, and facilities included a boarding house, bunkhouse, tool house, magazine, and blacksmith shop.

Development work on the Banner continued during 1898. In February a twelve-man crew worked on building roads for hauling timber and fuelwood for the mine. In April, the original shaft was 176 feet deep, and the hoist was moved to sink a new 4-foot X 7-foot shaft, which was down ninety feet within a month. Wilfley concentrator works were added to the mill. In early 1899, however, because of litigation over title, the Banner closed down. Then, on June 11 of that year, the mill building, blacksmith shop, and timber shed were totally destroyed by fire.

When the Banner lode claim was surveyed for patent in 1899, the following developments were noted: a 5-foot X 7-foot timbered tunnel that ran 615 feet with a 166-foot drift that connected with a timbered double-compartment hoist shaft, with a 69-foot connection to the surface at the shaft house, plus crosscuts for a total of 783 feet. The hoist shaft was 69 feet deep, with a 20-hp steam hoist. The hoist shaft was full of water beginning at 10 feet below the surface. The mine was patented in 1901.

The mine was full of water and remained idle until 1900, when it became the property of the First National Bank of Spokane. John M. Herman of Moscow and New York men named B.P. Armstrong and S.C. Sammis organized the Florence Gold Mining Company for the mine's operation, leasing it from the Spokane owners, and the company spent $20,000 installing two 5-foot Huntington mills and doing development work on the mine (the hoist, engine, boiler, and Huntington mill from the Blossom [mine] were purchased and moved to the Banner). The underground workings totaled 1,200 feet and the shaft was 200 feet deep. Additional locations were made along the vein and on the creek bottom below the mill to protect the company's interests. In January of 1902 the Banner had a crew of thirty-five men working on it, and a steam pump was being used to pump out the water from the mine. By August of 1902, however, the Spokane owners and the New York lessees were disagreeing over terms, and the New York investors
abandoned the deal. The mine close down, however, in the spring of 1903 and was then again in litigation.

The Old National Bank of Spokane continued to own the Banner mine until approximately 1938, when the Gold Cross Mining Company obtained the four patented claims. C.B. Drinnon operated the Banner (as the Gold Bug) in 1939 and obtained good returns.

McKay (1998, p. 202) reported the following about the history of the Esmeralda: The Esmeralda mine was located just north of the Banner mine on the south branch of Black Sand Creek and was actually one of the two claims in the Banner group. The Esmeralda [sic] mine was located in 1895 by R.J. McLean, Charles Morehouse, and C.W. Cuff. In 1899 the discovery shaft was 6 feet X 8 feet X 12 feet, and there was a 50-foot-long cut that measured 6 feet in width and 8 feet in depth. In 1897 the Esmeralda Consolidated Company began work on the mine and filed articles of incorporation. The Florence Mining Company of New York bought the Esmeralda and the Banner claims in 1900 and sent in supplies to develop both claims. The claim was patented by the Banner Gold Mining Company in 1901.

3.13.4 Environmental Conditions

3.13.4.1 Site Features

The Banner Mine is on patented land and was not visited. Caretakers for the property refused permission to visit the workings.

3.13.4.2 Sample Locations

3.13.4.2.1 Solid Samples

No solid samples were collected.

3.13.4.2.2 Water Samples

No water samples were collected.

3.13.5 Structures

It is not known if any buildings or other structures are at the site. Reed (1939) noted that the mill had been dismantled.

3.13.6 Safety

The site was not visited. The condition of the workings is unknown, although Reed (1939) reported that the tunnels and shaft were inaccessible. It is doubtful that these have been reopened.
Figure 3.13-1. Location of the Banner Mine, Idaho County, Idaho (U.S. Geological Survey Kelly Mountain 7.5-minute topographic map).
3.14 GOLD BUG MINE (Site No. GR-52)
Alternate names—Little Chief; Triangle; Golconda; Mystery; Fraction; Independence;
Gold Cross.

3.14.1 Site Location and Access (Figure 2.1-1b)

The Gold Bug group of claims is at the head of Black Sand Creek near the center of the W½ of
section 25, T. 25 N., R. 3 E., on the Kelly Mountain 7.5-minute quadrangle (Figure 3.14-1). The
mine is on private land and is posted “No Trespassing.” Access to the owner’s summer residence
is south from Florence on FS Road 643 to Road 643C, then east on Road 643C about 1 mile to
where an access road to the residence heads to the northwest. The road is posted and can be
blocked by a cable.

3.14.2 Geologic Features (Figure 2.2-1b)

Lindgren (1900, p. 236) reported the following on the geology of the Gold Bug:
This vein strikes N. 50° E. and dips 65° SE. It is opened by means of a tunnel and
shows in places up to 3 feet of quartz. Tellurides are reported to have been found
in the ore from this mine.

As for other veins in the Florence area, the host rock is granite.

3.14.3 Site History

McKay (1998, p. 205-206) gave the following historical information on the property:
The Gold Bug group consisted of a number of claims (Little Chief, Triangle,
Golconda, Mystery, Fraction, Independence, and Gold Bug) and was also in the
late 1890s associated with the Banner group because both groups were owned and
managed by the same people. The Gold Bug claim was located a short distance
south of the Banner, at the head of Black Sand Creek. The vein struck north 50
degrees east and dipped 65 degrees southeast. Tellurides were reported in the ore.
A 1903 report stated that the Gold Bug and Banner claims yielded some $50,000
worth of ore (but in 1939 John Reed said the Gold Bug alone had reportedly
produced about $100,000). The Gold Bug claim was located in 1893 by Charles
P. Cone and John Wells (Cone was a local miner and the Wells was a prospector
from Butte). They ran open cuts and sank shafts on the claim. This may be the
claim from which Charles Cone rocked out $25 worth of gold in five hours from
decomposed quartz in January of 1895. In late fall of 1895, 20 tons of ore from
the Goldbug [Gold Bug] yielded $35 per ton (prior to milling, it had already
yielded $23.50 per ton in a rocker). At that time the shaft was down 30 feet, and
Cone traded half interest in another claim for 480 feet of tunnel to be built on the
Gold Bug. By June Cone and Wells had driven about 186 feet on the tunnel that
was designed to tap the vein at a depth of about 100 feet. That month, however,
S.S. Glidden and Frank R. Culberson, owners of the Tiger-Poorman mine in the Coeur d'Alenes, purchased the Gold Bug mine and put it under the same management as the Banner mine, which they also owned. By the winter of 1896-97, the Gold Bug's main tunnel was in about 500 feet, giving a depth of about 125 feet. The ore body averaged 2 feet in width. Although some of the ore assayed quite high, a mill run of 23 tons of ore made during the 1896 development averaged only $17 per ton.

In early 1897 a 20-inch vein of ore showing free gold in the face of the Gold Bug tunnel was expected to mill between $20 and $25 per ton. Another body of ore that was twenty-four to thirty inches wide assayed from $60-$80 per ton. In the summer the company contracted for the sinking of a 100-foot shaft from the 700-foot tunnel on a shoot of ore (struck about 125 feet below the surface). In October of 1897 a Huntington mill was installed to crush the ore from the Banner and Gold Bug mines, and in December six gold bricks from the two claims were produced that weighed 25 pounds and were valued at $4,000-$5,000. At that time the two mines were working forty men, and the aboveground improvements included a boarding house, bunkhouse, tool house, magazine, and blacksmith shop. When the Gold Bug group of seven claims was patented in 1899, the improvements included five tunnels totalling [sic] 1,116 feet, two shafts, and two open cuts. Even in 1924, the Banner and Gold Bug mines were working about twenty-five or thirty men.

In 1936 the Gold Cross Mining Company owned both the Gold Bug and Banner mines. The 210-foot-long crosscut tunnel from the 1890s was inaccessible. In 1936 a new tunnel at nearly the same level as the old one was driven southward into the hill toward the vein. The operators hoped to reach the vein with a 370-foot tunnel. In approximately 1938, the mine belonged to eight people, including Jack Hardin. The last operator was C.B. Drinon, who hauled ore out and then moved to Coeur d'Alene. Hardin bought the group of owners out over a period of thirty years, but by the time he had control of the property he was too old to work it. The Gold Bug did produce some gold in 1939. Hardin burned down the old stamp mill because people were camping in it. In the early 1950s, Florence miner Foster Morgan loaned Hardin money for half interest in the mine and helped with the assessment work. In 1964 or 1965, Foster bought the mine from Hardin. Foster did some development work on it every year and got out a little gold. He also sold the timber on the claim to the Wickes Corporation.

Of the Gold Cross, one of the claims on the Gold Bug group, McKay (1998, p. 206-207) wrote:
The Gold Cross claim was located near the Gold Bug claim and was part of the Gold Bug group. In 1896 owners Cone and Wells ran a tunnel on the claim that was intended to tap the lead about 80 feet from the surface. After 1896, the mine is not mentioned again until 1936. At that time, it was reported that Ed Heintz,
Archie Adley and associates developed the property to some extent and erected a small pilot mill on the “W.A. Paul” property for the Gold Cross Mining Company (presumably on the same claim). A lack of finances hindered development, however. The Gold Cross Mining Company was based in Sprague, Washington. The company held nine patented and one unpatented claim. The property was developed by four tunnels that were 250, 100, 100, and 380 feet in length. In 1937, four men worked at the mine and did 200 feet of development work. The next year the property was leased to C.B. Drinnon of Wallace, but apparently the mine was inactive after that.

The history of the Fraction claim was reported as follows (McKay, 1998, p. 202):
The Fraction claim was located in 1896 by Robert J. Bryce. In 1899, when it was surveyed for patent with the Gold Bug group, the Fraction had a timbered 4-foot X 7-foot tunnel that was 45 feet long. The claim was patented in 1902 by the Gold Bug Mining & Milling Company.

Concerning the Golconda, McKay (1998, p. 205) noted:
The Golconda claim was located near the south branch of Black Sand Creek, adjacent to the Banner mine, Charles P. Cone filed on the Golconda in 1894. In 1899 the Golconda tunnel was reported to be dry and to have occasional rich freemilling ore. The tunnel was 4 feet X 7 feet, timbered, and 240 feet long.

McKay (1998, p. 211) reported the following on the history of the Independence:
The Independence claim was located south of the Gold Bug, near and on the head of Black Sand Creek, and it was located by Charles P. Cone and John Wells in 1896. When the Independence claim was surveyed for patent in 1899 as part of the Gold Bug group, it had a 123-foot tunnel that was 4 X 7 feet and timbered. The claim was patented in 1902 by the Gold Bug Mining & Milling Company.

The following information was noted on the history of the Little Chief claim (McKay, 1998, p. 214-215):
The Little Chief lode claim was just south of the Banner claim and was part of the Gold Bug group southwest of Florence on Black Sand Creek. Its ore contained both gold and silver. John Wells and Charles P. Cone located the Little Chief in 1894. The only mention of work on the Little Chief was in February of 1896, when Cone and Wells hired Minet and Boyce to drive forward on the drift on the claim. The two miners were to run 450 feet of tunnel for half interest in the Little Chief and Golconda (adjoining on the west) claims. When the Little Chief was surveyed for patent in 1899, it had a 50-foot-deep, 4-foot X 6-foot shaft. The claim was patented in 1902 by the Gold Bug Mining & Milling Company.
McKay (1998, p. 219) reported the following on the Mystery claim:
The Mystery claim was adjacent to the Gold Bug on the east and was located on
the divide between Black Sand Creek and South Sand Creek. The claim was
located in 1896 by Charles P. Cone and John Wells. In 1899 when the claim was
surveyed for patent the Mystery had a 10-foot-deep open cut that was 6 feet wide
and 25 feet long, plus a timbered 4-foot X 7-foot tunnel that was 140 feet long.
The Mystery claim was patented in 1902 by the Gold Bug Mining & Milling
Company.

According to McKay (1998, p. 229), the following is known about the history of the Triangle
claim:
The Triangle claim was located by Robert Boyce in 1896. When the Triangle
claim was surveyed for patent in 1899, it had a 10-foot X 40-foot open cut that
was 15 feet deep and a timbered 4-foot X 7-foot tunnel that was 12 feet long. The
Triangle claim was patented in 1902 by the Gold Bug Mining & Milling Company.

3.14.4 Environmental Conditions

3.14.4.1 Site Features

The Gold Bug Mine is on patented land and was not visited. Caretakers for the property refused
permission to visit the workings.

3.14.4.2 Sample Locations

3.14.4.2.1 Solid Samples
No solid samples were collected.

3.14.4.2.2 Water Samples
No water samples were collected.

3.14.5 Structures

A maintained, modern log cabin at the Gold Bug is the summer residence for the owner or the
caretakers. It was not determined if any of the old buildings remain at the site.

3.14.6 Safety

The condition of the workings is not known, although the caretakers indicated the old workings
are all caved.
Figure 3.14-1. Location of the Gold Bug Mine, Idaho County, Idaho (U.S. Geological Survey Kelly Mountain 7.5-minute topographic map).
3.15 JOSEPHINE CLAIM OR JUAN CLAIM PROSPECT (Site No. K7260005)

The workings described below are identified as part of the Banner Mine (GR-51) on the video segment. However, it was later determined that they are most likely on either the Josephine claim or the Juan claim, both of which are adjacent to the Banner Group on the north side. Therefore, the workings were given a unique site number.

3.15.1 Site Location and Access (Figure 2.1-1b)

Two caved adits are on Black Sand Creek in the NE¼ of the NW¼ of section 25, T. 25 N., R. 3 E., on the Kelly Mountain 7.5-minute quadrangle (Figure 3.15-1). One adit is on Forest Service land on the east side of the creek adjacent to the patented Banner Group, and the other is on the west side of the creek, also on Forest Service land, between the Banner Group and the Hi Yu Mine. From Florence, the prospects can be reached by following FS Road 643 south to Road 643A, then traveling northeast on Road 643A to Black Sand Creek, where an all-terrain-vehicle trail heads south along the east side of the creek.

3.15.2 Geologic Features (Figure 2.2-1b)

The prospects are probably along quartz veins or veinlets in granite, similar to others in the Florence area.

3.15.3 Site History

McKay (1998, p. 212) reported the following on the history of the Josephine claim:

The Josephine mine was located near the head of Black Sand Creek, north of the Banner. M.M. Chamberlain located it in 1896. In the spring of 1896 Owens and Huff bought half interest in the Josephine mine for $3,000 (others interested in the property were from Lewiston). A few months later A.F. McKenna sold half interest in the mine to George Chapman for $750 and half interest to C.S. Voorhees and Senator Wilson of Spokane. In July of 1896 a double shift of men were working the mine, but it is not mentioned in later newspapers or reports.

No historical information is available on the Juan claim.

3.15.4 Environmental Conditions

3.15.4.1 Site Features

These minor workings were visited by John Kauffman on July 26, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 1, index 1:46:47-1:49:35). Documenting photograph is Roll 00K12, frame 26.

The prospect on the east side of Black Sand Creek consists of a caved adit and a short prospect trench (or very short caved adit) adjacent to the adit (Figure 3.15-2). The caved adit is marked by a trough extending up the slope for about 150 feet (Figure 3.15-3). The dump is small, somewhat
irregular, and is overgrown with small trees. On the south side of the trough for the caved adit is a shallow trench and a very small dump. A 55-gallon barrel is on the waste dump for the trench. The disturbed area covers less than 0.5 acre.

The adit on the west side of the creek is also caved and was very short. The adit is in the trees along an old trail that comes from the Hi Yu Mine. The disturbed area is minimal and insignificant.

3.15.4.2 Sample Locations

3.15.4.2.1 Solid Samples
   No solid samples were collected.

3.15.4.2.2 Water Samples
   No water samples were collected.

3.15.5 Structures
   No structures were found at this site.

3.15.6 Safety
   There are no safety hazards at this site.
Figure 3.15-1. Location of the Josephine or Juan Claim prospects, Idaho County, Idaho (U.S. Geological Survey Kelly Mountain 7.5-minute topographic map).
Figure 3.15-2. Sketch of the caved adit on the east side of Black Sand Creek at Site No. K7260005, probably on the Josephine claim.
Figure 3.15-3. Trough of the caved adit on the east side of Black Sand Creek at Site No. K7260005 (Roll 00K12, frame #26).
3.16 U. S. MINE (Site No. GR-46)
Alternate name—Queen of the East.

3.16.1 Site Location and Access (Figure 2.1-1b)

The U. S. Mine is on the east side of Black Sand Creek near the center of the E½ of the SW¼ of section 24, T. 25 N., R. 3 E., on the Kelly Mountain 7.5-minute quadrangle (Figure 3.16-1). Access from Florence is on FS Road 643A, mostly an all-terrain-vehicle trail. The site can also be reached on Road 643 south from Florence to Road 643A, then northeast on Road 643A about ½ mile to a collapsed cabin along the road on the west side of the creek. The workings are in the trees across the creek from the cabin and are on Forest Service land.

3.16.2 Geologic Features (Figure 2.2-1b)

The vein at the U. S. Mine strikes N. 54° E. and dips 70-80° SE. At the surface, the vein was 3½ inches thick, but in the old workings at a depth of 70 feet, it was considerably thicker (Reed, 1939). The country rock is granite.

3.16.3 Site History

McKay (1998) noted the claim was located in 1897 and was owned by Jack Hardin beginning in 1928. Reed (1939, p. 43) reported:

The U. S. prospect of Jack Hardin is on the east side of Black Sand Creek near the Hardin cabin. Development consists of two small tunnels, one 60 feet and the other 70 feet long. Mr. Hardin, in 1934, was starting a crosscut tunnel to the lode. The property is said to have produced a little gold many years ago from ore reported to run about $18.00 per ton.

3.16.4 Environmental Conditions

3.16.4.1 Site Features

The U. S. Mine was visited by John Kauffman on July 26, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 1, index 1:49:39-1:54:46). Documenting photographs are Roll 00K13, frames 1-4.

Several of the old U. S. Mine workings were found on the east side of Black Sand Creek across from the old Hardin cabin (Figure 3.16-2). Two adit symbols are shown on the topographic map. A caved adit, at the site of the lower symbol, forms a long trough up the slope. The trough is enclosed by brush and small trees (Figure 3.16-3). The waste dump measures 60 feet long, 10-18 feet wide, and about 5 feet thick on the slope (Figure 3.16-4). A pile of coarse rock fragments is on the northwest end of the dump. Above the trough of the caved adit, at about the site of the second adit symbol on the map, are several pits or, possibly, collapsed stopes. Deadfall
crisscrosses the pits (Figure 3.16-5), which are surrounded by small mounds of waste rock. The second adit reported by Reed (1939) was not found. The disturbed area at the site is less than 0.5 acre.

3.16.4.2 Sample Locations

3.16.4.2.1 Solid Samples
No solid samples were collected.

3.16.4.2.2 Water Samples
No water samples were collected.

3.16.5 Structures

Part of the old Hardin cabin is standing, but most of the rear portion has collapsed (Figure 3.16-6). There may also be a collapsed shed or shelter near the cabin.

3.16.6 Safety

The standing section of the cabin appears ready to collapse. No other hazards were found at the site.
Figure 3.16-1. Location of the U. S. Mine, Idaho County, Idaho (U.S. Geological Survey Kelly Mountain 7.5-minute topographic map).
Figure 3.16-2. Sketch of the U. S. Mine.
Figure 3.16-3. Looking southeast up the trough of the caved adit at the U. S. Mine (Roll 00K13, frame #1).
Figure 3.16-4. Waste dump for the adit at the U. S. Mine (Roll 00K13, frame #2).
Figure 3.16-5. Shallow pits on the slope above the caved adit at the U. S. Mine. The slope is covered with crisscrossing deadfall (Roll 00K13, frame #3).
Figure 3.16-6. Old Hardin cabin along FS Road 643A, now an all-terrain-vehicle trail. The back part of the cabin has collapsed (Roll 00K13, frame #4).
3.17 BLACK BEAR MINE (Site No. GR-44)

3.17.1 Site Location and Access (Figure 2.1-1b)

The Black Bear Mine is at the head of a northwest-flowing tributary of Greek Creek near the center of the north-south section line between sections 22 and 23, T. 25 N., R. 3 E., on the Kelly Mountain 7.5-minute quadrangle (Figure 3.17-1). Access is by traveling south and west about 5-6 miles on FS Road 221 from the turnoff to Florence to the junction with FS Road 9321, then east and south on Road 9321 about 2½ miles. The workings are in the draw below the road and can only be reached by foot. The site is on Forest Service land.

3.17.2 Geologic Features (Figure 2.2-1b)

The mine probably developed quartz veins in granite.

3.17.3 Site History

McKay (1998, p. 194) noted:

The claim was located by J.S. Pennell in 1896. In the late 1930s it consisted of several small prospect pits and tunnels that totaled several hundred feet in length. No work had been done there for at least five years [according to Reed (1939)]. In 1988 a log structure, a platform, an adit, and other features were found at the site.

3.17.4 Environmental Conditions

3.17.4.1 Site Features

The Black Bear Mine was visited by John Kauffman on August 8, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 2, index 0:00:35-0:05:34). Documenting photographs are Roll 00K13, frames 9-12.

Three caved adits were found in fairly thick timber and underbrush a few hundred feet from FS Road 9321 (Figure 3.17-2). Adit 1, the southernmost, is along the main gully and is completely caved. The waste dump is small, measuring 12 feet long, 9 feet wide, and 8 feet thick (Figure 3.17-3).

Adits 2 and 3 are on a small side gully north of Adit 1. Both of these adits are also caved. Adit 2, driven eastward into the slope, has the largest waste dump of the three adits, measuring 60-70 feet long, 6-8 feet wide, and 10-12 feet thick (Figure 3.17-4). A small, flat, rectangular area at the mouth of the adit trough may have been the site for a compressor. Adit 3 is north of Adit 2 and was driven northward into the slope. A minor seep flows from the caved adit. The dump for Adit 3 is 50 feet long, 6-10 feet wide, and 5-10 feet thick. The dumps for both of these adits extend into the gully, but the minor seep is the only water in the drainage.
The total disturbed area covers less than 0.5 acre.

3.17.4.2 Sample Locations

3.17.4.2.1 Solid Samples
No solid samples were collected.

3.17.4.2.2 Water Samples

Sample K8080001 was collected from the minor seep at Adit 3.

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<th>pH</th>
<th>Flow (gpm)</th>
<th>Analyzed (Yes/No)</th>
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<td>6.7</td>
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</table>

3.17.4.2.3 Analytical Results

Water Samples (Tables 2.5-1 and 2.5-2)

Sample K8080001 does not exceed any standards in the dissolved metals, the dissolved heavy metals, or the total recoverable metals screen. Mercury exceeds the Aquatic Life Chronic standard in the EPA 200.8 - Mercury test.

3.17.5 Structures

The log structure and platform reported by McKay (1998) were not seen.

3.17.6 Safety
No safety hazards were found at the site.
Figure 3.17-1. Location of the Black Bear Mine, Idaho County, Idaho (U.S. Geological Survey Kelly Mountain 7.5-minute topographic map).
Figure 3.17-2. Sketch of the Black Bear Mine site.
Figure 3.17-3. Small waste dump of Adit 1 at the Black Bear Mine, looking northwest (Roll 00K13, frame #9).

Figure 3.17-4. Waste dump for Adit 2 at the Black Bear Mine, looking west. Several of the trees growing on the dump are more than one foot in diameter (Roll 00K13, frame #10).
3.18 ELKHORN PROSPECT (Site No. GR-43)

3.18.1 Site Location and Access (Figure 2.1-1b)

The Elkhorn Prospect is about ¼ mile northeast of the Black Bear Mine in the SE¼ of the NW¼ of section 23, T. 25 N., R. 3 E., on the Kelly Mountain 7.5-minute quadrangle (Figure 3.18-1). Access is the same as for the Black Bear Mine, then east several hundred feet to the junction of Roads 9321 and 9321E. The prospect is less than ¼ mile up Road 9321E just past the bend where the road turns to the north. The site, which is on Forest Service land, is on the low divide between two branches of Little French Creek.

3.18.2 Geologic Features (Figure 2.2-1b)

The prospect developed quartz veins in granite.

3.18.3 Site History

McKay (1998, p. 201) reported:

Ore from the 3-foot-wide vein was milled as early as the winter of 1895-96, and it continued to produce ore in 1896 and 1897. The mine was owned by Charles Thompson and partners (Thompson was then considered one of the oldest quartz miners of Florence). In the spring of 1897 the crew ran a 140-foot tunnel to tap the old shaft where they had seven feet of vein. They then planned to run on the vein to find a rich ore chute [shoot] thought to be 75 or 100 feet east of the shaft. Day and night shifts worked the mine during the summer of 1897, and in the spring of 1898 work was undertaken on a new shaft and in the lower tunnel.

Reed (1939) stated that only a “small inaccessible shaft was noted near the trail.”

3.18.4 Environmental Conditions

3.18.4.1 Site Features

The Elkhorn Prospect was visited by John Kauffman on August 8, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 2, index 0:06:38-0:08:53). Documenting photographs are Roll 00K13, frames 13-14.

The only workings found were a caved shaft, probably the one noted by Reed (1939), and a minor prospect pit nearby (Figure 3.18-2). The pit of the caved shaft is 8-10 feet deep and about 10 feet in diameter (Figure 3.18-3). The pit is surrounded by fir trees. The waste dump is a low mound extending southwest from the pit. The dump measures 12 feet long, 12 feet wide, and 5 feet thick. It has numerous small trees growing on its surface (Figure 3.18-4). A very minor, shallow pit is in the trees northeast of the shaft. None of the other workings reported by McKay (1998) were found. The disturbed area is minimal.
3.18.4.2 Sample Locations

3.18.4.2.1 Solid Samples
No solid samples were collected.

3.18.4.2.2 Water Samples
No water samples were collected.

3.18.5 Structures
No structures were found at the site.

3.18.6 Safety
No safety hazards were found at the site.
Figure 3.18-1. Location of the Elkhorn Prospect, Idaho County, Idaho (U.S. Geological Survey Kelly Mountain 7.5-minute topographic map).
Figure 3.18-2. Sketch of the Elkhorn Prospect.
Figure 3.18-3. Pit of the caved shaft at the Elkhorn Prospect (Roll 00K13, frame #14).

Figure 3.18-4. Small waste dump for the caved shaft at the Elkhorn Prospect, looking east (Roll 00K13, frame #13).
3.19 HINCKSON AND BISHOP PROSPECT (Site No. GR-41)

3.19.1 Site Location and Access (Figure 2.1-1b)

This prospect is on a low ridge east of Healy Creek near the center of the north-south section line dividing sections 23 and 24, T. 25 N., R. 3 E., on the Kelly Mountain 7.5-minute quadrangle (Figure 3.19-1). The site is about 1 mile (by road) south of Florence on the west side of FS Road 643. A shaft and an adit symbol are shown on the topographic map at this location. Road 643 crosses a saddle on the low ridge about ¼ mile south of the prospect. An old bulldozer road follows the ridge crest to the prospect, although this old road is obscure among the trees. The prospect is on Forest Service land.

3.19.2 Geologic Features (Figure 2.2-1b)

Granite outcrops are near the workings. The prospect probably explored quartz veins in the granite.

3.19.3 Site History

Reed (1939, p. 40) reported:

An old prospect now reported to be the property of Messrs. Hinckson and Bishop lies near the center of the west line of Sec. 24, T. 25 N., R. 3 E., and is partly in Sec. 24 and partly in Sec. 23. The underground openings, consisting of a shaft and a tunnel, were inaccessible. Several open cuts have been made nearby. There is no record of production from this property.

3.19.4 Environmental Conditions

3.19.4.1 Site Features

The Hinckson and Bishop Prospect was visited by John Kauffman on August 8, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 2, index 0:08:56-0:16:20). Documenting photographs are Roll 00K13, frames 15-19.

Three pits (either caved shafts or collapsed stopes), a small pit, a shallow cut, a caved adit, and two collapsed cabins were found at this site (Figure 3.19-2). The adit is on the east slope of the low ridge and was driven west. The waste dump is 30 feet long, 5-10 feet wide, and 10 feet thick (Figure 3.19-3). A shallow pit is at the mouth of the adit. The pit from a caved shaft is at the head of the trough from the caved adit. This pit is 20 feet in diameter and 15 feet deep (Figure 3.19-4). The largest pit or caved shaft is on the ridge top about due west of the first pit. The pit measures 25 feet in diameter and 18 feet deep (Figure 3.19-5). The third and smallest pit, about 10 feet in diameter and 8 feet deep, is adjacent to the south side of the large pit. Little waste rock
is associated with these pits, indicating the material was probably taken out through the adit. Other minor, shallow pits and cuts are in the vicinity. The disturbed area covers less than 1 acre.

3.19.4.2 Sample Locations

3.19.4.2.1 Solid Samples
No solid samples were collected.

3.19.4.2.2 Water Samples
No water samples were collected.

3.19.5 Structures

Two collapsed log buildings are east of the waste dump for the adit. The eastern and smaller of the buildings is near a large granite outcrop (Figure 3.19-6). This building was about 16-20 feet long and 12 feet wide. The second building was about twice as large and had three sections. The two end sections were about 14 feet square, apparently with a 6-foot-wide connecting section between them. Only a portion of one end remains standing (Figure 3.19-7).

3.19.6 Safety

Although two of the pits are relatively deep (15 feet and 18 feet), the sides are not overly steep. Therefore, they are not much of a hazard. No other potential hazards were found at the site.
Figure 3.19-1. Location of the Hinckson and Bishop Prospect, Idaho County, Idaho (U.S. Geological Survey Kelly Mountain 7.5-minute topographic map).
Figure 3.19-2. Sketch of the workings at the Hinckson and Bishop Prospect.
Figure 3.19-3. Looking northwest at the waste dump for the caved adit at the Hinckson and Bishop Prospect. The bright area in the center of the picture is the face of the dump (Roll 00K13, frame #15).
Figure 3.19-4. Pit of the caved shaft above the trough of the caved adit at the Hinckson and Bishop Prospect (Roll 00K13, frame #18).
Figure 3.19-5. Pit of the largest caved shaft at the Hinckson and Bishop Prospect (Roll 00K13, frame #19).
Figure 3.19-6. Smaller of the two collapsed log buildings at the Hinckson and Bishop Prospect, looking south. A large granite outcrop is behind the building (Roll 00K13, frame #17).

Figure 3.19-7. Larger of the two collapsed buildings at the Hinckson and Bishop Prospect, looking southwest. Some of the ruins are behind the small trees to the right of the standing wall (Roll 00K13, frame #16).
3.20 UNNAMED PROSPECT (Site No. K8080002)

3.20.1 Site Location and Access (Figure 2.1-1b)

This prospect is beside Healy Creek and FS Road 643 in the NW¼ of the NW¼ of section 24, T. 25 N., R. 3 E., on the Kelly Mountain 7.5-minute quadrangle (Figure 3.20-1). A caved adit is along the west edge of the road, just before the road crosses the creek. An adit symbol is shown on the topographic map at this location. The prospect is on Forest Service land about ¼ mile south of Florence.

3.20.2 Geologic Features (Figure 2.2-1b)

The prospect is in granite and probably explored narrow quartz veins.

3.20.3 Site History

The history of this site is not known.

3.20.4 Environmental Conditions

3.20.4.1 Site Features

This prospect was visited by John Kauffman on August 8, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 2, index 0:16:24-0:21:09). Documenting photographs are Roll 00K13, frames 20-21.

The adit at this site, beside the road at creek level, is completely caved. Old timbers and the remains of a wooden gate on the portal are in the trough of the collapsed tunnel (Figure 3.20-2). Water in the trough near the mouth of the adit is probably from the creek rather than from the adit. The waste dump no longer exists; it was probably incorporated into the road. There are also several shallow pits on the slope above the caved adit. The disturbed area is insignificant.

3.20.4.2 Sample Locations

3.20.4.2.1 Solid Samples

No solid samples were collected.

3.20.4.2.2 Water Samples

No water samples were collected.

3.20.5 Structures

There is a cabin just north of the adit, shown by a building symbol on the topographic map. The cabin appears to be more modern than the adit. Posts and wood footings from an unknown structure are on the grassy floodplain of Healy Creek near the adit (Figure 3.20-3).
3.20.6 Safety
   No safety hazards were found at this site.
Figure 3.20-1. Location of Unnamed Prospect, Site No. K8080002, Idaho County, Idaho (U.S. Geological Survey Kelly Mountain 7.5-minute topographic map).
Figure 3.20-2. Caved adit at Site No. K8080002, looking west (Roll 00K13, frame #20).
Figure 3.20-3. Wood posts and footings of an old structure in the Healy Creek drainage near Site No. K8080002, looking southwest (Roll 00K13, frame #21).
3.21 WAVERLY MINE (Site No. GR-32)
Alternate name—Monte Cristo Mining Company.

3.21.1 Site Location and Access (Figure 2.1-1a)

The Waverly Mine is on FS Road 643H in the SW¼ of the SW¼ of section 13, T. 25 N., R. 3 E., on the Florence 7.5-minute quadrangle (Figure 3.21-1). Access from Florence is on FS Road 643 south to FS Road 643H, then northwest about ¼ mile on Road 643H to the mine. Reed (1939) indicates the mine is on a patented claim, although the site labeled the Waverly on the topographic map is on Forest Service land. The shaft mentioned by Lindgren (1900) and Reed (1939) was not found; it is probably on the block of private land (presumably a patented claim) south of the adit described below.

3.21.2 Geologic Features (Figure 2.2-1a)

As with other lode mines in the Florence area, the Waverly developed gold-bearing quartz veins in granite. Lindgren (1900, p. 237) reported: “this vein has the usual E.-W. strike and southerly dip; its width is about 12 feet.”

3.21.3 Site History

In 1897, the development on the property consisted of a shaft 116 feet deep. The property was idle during part of 1898 (Lindgren, 1900). McKay (1998, p. 231-234) gave the following historical account of the Waverly Mine:

It was reportedly discovered by Chinese placer miners, but Charles Gutman located it in 1894. The lode was poorly defined, consisting of groups of small veinlets. It was worked as early as 1895, giving $25 per ton in ore. By early 1896 the Waverly Mining Company of Moscow [Idaho] had been organized. In the fall of 1896 forty-four tons of ore from the mine yielded 110 ounces in gold. During the winter of 1896-97 the mine worked a small crew. The next summer the owners purchased a steam hoist and pump, and a shaft was sunk at least 100 feet deep. The mine had a two-stamp mill on the property by October of 1897 and was reducing six tons of ore daily that yielded just over $200 per ton.

The company reportedly ordered a new five-stamp mill in November 1897, but it is not known whether this was ever actually used on the Waverly because the company soon experienced financial difficulties. In February of 1898 the company surrendered the management of the property to the employees until its debt (several months’ wages) were satisfied. The workers operated it cooperatively. At that time Charlie Aldridge was mine foreman and J.C. Moore mill foreman. In March a rich strike was made on the 130-foot level of the 160-foot shaft, but the mine closed down and was idle later in the year. J.M. Herman took an option on the Waverly in 1898 and spent $3,000 on the mine but ended up giving it back to the original owners because he was not able to keep water out of the workings.
The Waverly mine was surveyed for patent in October 1901 for the Waverly Mining Company of Moscow. The development work up to that time included the following: a 4-foot X 6-foot shaft 150 feet deep topped by a 16-foot X 36-foot shaft house (the shaft was perpendicular for the first 50' and then dipped at an angle of 78 degrees from the horizontal for the remaining 100 feet), a 26-foot X 12-foot stamp mill building, a 10-foot X 12-foot ore bin. The shaft had a connecting 90-foot-long adit and three drifts (155 feet at the 50-foot level, 100 feet at the 100-foot level, and 155 feet at the 130-foot level). There was also a hoist building and machinery, blacksmith shop, mess and bunkhouses, and an old building for the arrastra. The vein was reportedly 3 feet wide at the foot of the shaft and milled about $55 per ton. To the southeast was the road to J.C. Meinert's cabin, and just beyond the cabin was Florence's custom mill, which was recorded as having been little used. The recorder commented, "There has been a great amount of Placer Mining above, every gulch having been washed out, and the country is full of old abandoned water ditches."

By 1901 the Waverly Gold Mining Company of Moscow owned the Waverly and was working it off and on. In 1902 poor management and reported trouble among the stockholders shut down the work. In July of 1903 only three men were working the mine, and in the fall it was reported that the boiler and engine, hoist, and mining implements on the claim were to be sold by the Idaho County assessor and tax collector for nonpayment of taxes.

No mention of the Waverly mine has been found between 1903 and 1921, although a group of Waverly claims, including a tunnel claim, was located in 1919. In the latter year, the Waverly Mining Company (with officers in Lewiston) was working an average of three men. The one patented and nine unpatented claims had 850 feet of underground workings. The Kinkade oscillating rotary mill on the property had a 10-ton capacity. The Monte Cristo Mining Company was incorporated in 1927 to operate the Waverly group of two claims in Florence and the Monte Cristo group in the Buffalo Hump district. In 1932 the company worked an average of four men on the Waverly year-round, using a gas-driven compressor. For the next several years two to seven men worked on the claim, doing small amounts of development work on the tunnel and shaft (most of the old workings were inaccessible because of flooding). During the summer of 1939 the Waverly reportedly made good returns when water was available, operated under lease and bond to Fred Johnson (president of the Monte Cristo Mining Company). The Waverly was one of the three top producing lode mines in Florence that year. Johnson's crew worked the mine until the early 1940s, but they had difficulty holding the ground; it collapsed easily. Johnson moved the gas-powered arrastra on the Waverly to the Yakima mine.

In the 1940s or 1950s, Gene Fuzzell and his brother-in-law leased the Waverly mine from Fred Johnson. Working only on weekends, they drove a 150-foot
tunnel below the Waverly shaft, from Miller Creek to the Waverly, in an attempt to find solid ground to work. They supported the tunnel with split lodgepole, timbering it close. Two men did the drilling with compressed-air drills, while one man cut the timbers and laid the charges. They drove approximately 5 or 6 feet a day.

In 1988 the Waverly mine site included parts of the ball mill, six structures, an earthen dam, and cast-iron and sheet-metal piping.

3.21.4 Environmental Conditions

3.21.4.1 Site Features

The Waverly Mine was visited by John Kauffman on August 8, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 2, index 0:21:13-0:29:52). Documenting photographs are Roll 00K13, frames 22-26.

As stated above, the shaft reported by Lindgren (1900) and Reed (1939) was not found, but is probably on the private land to the south of the site that was visited. The private land was not examined. The mineral survey plat of the Waverly claim (Survey No. 1657, shown in McKay, 1998, p. 233) shows the shaft near the middle of the claim. A notation at the lower right corner of the claim indicates a nearly east direction (the number appears to be N. 83° 20' 30" E.) of about 2,344 feet to U.S. Mineral Monument 1 (USMM 1) from the southeast corner of the claim. The monument location shown on the topographic map is about that distance and direction from the southeast corner of the private land.

The site labeled “Waverly Mine” on the topographic map, where adit and building symbols are shown, is the site that was visited. A caved adit, a waste dump, a cabin, a collapsed building, and the remains of an old mill are at this site (Figure 3.21-2). The long trough of the caved adit is at the head of a shallow ravine that branches from a tributary of Miller Creek. Iron-rich water from the caved adit, estimated at 5-10 gallons per minute (Figure 3.21-3), flows through the trough and into a grassy wetland behind an earthen dam. An underground map of the adit (Reed, 1939, Figure 18; Figure 3.21-4) shows about 800 feet of tunnel, with several hundred feet of drifts to the west off the main tunnel. The waste dump, built along Road 643H and beginning at least 100 feet northwest of the adit trough, has probably been modified to some extent, but still measures 150-200 feet long, 10 feet wide (from the south edge of the road), and 15-20 feet thick (Figure 3.21-5). The cabin is at the northwest end of the adit trough, the collapsed building is northwest of the cabin, and the remnants of the mill are below the earthen dam. The disturbed area covers about 2 acres.
3.21.4.2 Sample Locations

3.21.4.2.1 Solid Samples

Although the toe of the dump reaches the drainage, there is very little water other than that from the adit in the drainage, and nearly all of the dump material is disaggregated granite. Therefore, no sample was collected.

3.21.4.2.2 Water Samples

Sample K8080003 was collected from the water flowing from the caved adit.

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<th>Location</th>
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<th>pH</th>
<th>Flow (gpm)</th>
<th>Analyzed (Yes/No)</th>
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<td>40</td>
<td>45</td>
<td>7.5</td>
<td>5-10</td>
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3.21.4.2.3 Analytical Results

Water Samples (Tables 2.5-1 and 2.5-2)

Sample K8080003 exceeds the Secondary MCL and the Aquatic Life Chronic standard for aluminum, the Secondary MCL and Aquatic Life Acute standard for iron, and the Secondary MCL for manganese in the dissolved metals screen. Iron and manganese exceed the Secondary MCLs in the total recoverable metals screen.

3.21.5 Structures

The old log cabin at the Waverly Mine is standing but is in disrepair (Figure 3.21-6). The roof has been covered with blue nylon tarpaulins, but these have degraded and are falling apart. The interior of the cabin is in poor condition. Scrap metal, old boards, and other miscellaneous garbage, some of which is recent, are around the site. A completely collapsed building is northwest of the cabin near the head of the waste dump (Figure 3.21-7). Very little remains of the old mill except for some planks, timbers, and parts of the crusher and drive mechanism (Figure 3.21-8). This may be the Kinkade rotary mill reported by McKay (1998).

3.21.6 Safety

There are no significant safety hazards at the site. Minor hazards include nails protruding from old boards and sharp edges on scrap metal.
Figure 3.21-1. Location of the Waverly Mine, Idaho County, Idaho (U.S. Geological Survey Florence 7.5-minute topographic map).
Figure 3.21-2. Sketch of the Waverly Mine.
Figure 3.21-3. Looking southeast up the trough of the caved adit at the Waverly Mine. Water flows out of the adit at about 5-10 gallons per minute (Roll 00K13, frame #22).
Figure 3.21-4. Underground geologic map of the Waverly adit (Reed, 1939, Figure 18).
Figure 3.21-5. Looking northwest along the waste dump for the Waverly adit (Roll 00K13, frame #26).

Figure 3.21-6. Old log cabin at the Waverly Mine, looking northwest (Roll 00K13, frame #23).
Figure 3.21-7. Collapsed building northwest of the cabin at the Waverly Mine (Roll 00K13, frame #24).

Figure 3.21-8. Remains of the old mill at the Waverly Mine (Roll 00K13, frame #25).
3.22 UNNAMED PROSPECT (Site No. K8080004)

3.22.1 Site Location and Access (Figure 2.1-1a)

This prospect is over the ridge to the northeast of the Waverly Mine near the center of the SW¼ of section 13, T. 25 N., R. 3 E., on the Florence 7.5-minute quadrangle (Figure 3.22-1). Access from Florence is south on FS Road 643 to Road 643H, then northwest on Road 643H past the Waverly Mine to Trail 303, a distance of about ½ mile. The workings are on Trail 303 about ¼ mile south of the junction with Road 643H and are on Forest Service land.

3.22.2 Geologic Features (Figure 2.2-1a)

Rock on the waste dumps at this site indicate the workings are on quartz veins in granite.

3.22.3 Site History

Nothing is known about this site, although its proximity to the Waverly Mine indicates the two properties may be related. It is also possible that this site may be the Bull Run (Site No. GR-33), which is in the SW¼ of section 13. However, according to Reed (1939), the Bull Run is on the north side of Miller Creek, while this prospect is on the south side.

3.22.4 Environmental Conditions

3.22.4.1 Site Features

This prospect was visited by John Kauffman on August 8, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 2, index 0:29:56-0:36:55). Documenting photographs are Roll 00K14, frames 1-7.

Several adits and a shaft, along with placer workings, were found at this site (Figure 3.22-2). Adits 1 through 4 are south of Trail 303 on the east side of a tributary to the main drainage. Adit 5 was driven southward into the slope beside Trail 303, just west of the tributary drainage.

Adit 1 is nearly caved but has a small opening at the head of a trough on the slope (Figures 3.22-3 and 3.22-4). A few old support timbers are in the trough. Adit 2, about 20 feet north of Adit 1, is completely caved and also is expressed as a trough on the slope (Figure 3.22-5). A waste dump, probably for both adits, is built out into the drainage, although it has been modified by erosion and later placer operations. The remaining dump area measures about 50 feet long, 20 feet wide, and 7 feet thick. Remnants of a log cabin and a small log outbuilding are on the dump (Figure 3.22-6). A large pit, measuring 15 feet in diameter and 10 feet deep, is on the slope above Adit 1. The pit, probably a caved shaft, has a small rim of waste rock on the west side.

Adits 3 and 4 are about 100-200 feet south of Adit 1. Adit 3, which was probably short, has a small opening. Very little waste rock is associated with this adit, although some material may
have been removed by placer operations or erosion. A long trough on the slope south of Adit 3 has been designated Adit 4, although it may have been a trench rather than an adit. This trough is about 200 feet long. A small amount of waste rock is at the lower, west end of the trough.

Adit 5, beside Trail 303, is completely caved behind the portal timbers (Figure 3.22-7). The waste dump was built across the drainage north of the trail and has been bisected by the small creek (Figure 3.22-8). The dump is about 30 feet long, 15 feet wide, and 5-7 feet thick.

The total disturbed area at the site covers about 1 acre.

3.22.4.2 Sample Locations

3.22.4.2.1 Solid Samples

Sample K8080005 was collected from the waste dump at Adit 5.

<table>
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</thead>
<tbody>
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<td>Site No. K8080004, Adit 5 waste dump</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3.22.4.2.2 Water Samples

No water samples were collected.

3.22.4.2.3 Analytical Results

Solid Samples (Tables 2.5-3 and 2.5-4)

In sample K8080005, cadmium is slightly above the expected background level in the element screen. In the TCLP for metals test, slight amounts of mercury are leaching from the sample.

3.22.5 Structures

The remains of a log cabin and a small, square log outbuilding beside the cabin are on the waste dump for Adits 1 and 2 (Figure 3.22-6). An old compressor, powered by a gasoline engine, is along Trail 303 east of Adit 5 (Figure 3.22-9). Another log cabin, possibly related to this prospect, is along FS Road 643H several hundred yards west of the junction with Trail 303. This cabin is relatively intact, although in poor condition.

3.22.6 Safety

Adits 1 and 3 have small openings that could be enlarged to provide access into the workings.
Figure 3.22-1. Location of Unnamed Prospect, Site No. K8080004, Idaho County, Idaho (U.S. Geological Survey Florence 7.5-minute topographic map).
Figure 3.22-2. Sketch of the workings at Site No. K8080004.
Figure 3.22-3. Trough of Adit 1 at Site No. K8080004, looking southeast. A small opening into the adit is at the top of the trough (Roll 00K14, frame #1).
Figure 3.22-4. Small opening into Adit 1 at Site No. K8080004 (Roll 00K14, frame #2).
Figure 3.22-5. Trough of caved Adit 2 at Site No. K8080004, looking east (Roll 00K14, frame #4).
Figure 3.22-6. Waste dump for Adits 1 and 2 at Site No. K8080004, looking northwest. A collapsed log building is on the dump at the left, and a small log structure is on the right (Roll 00K14, frame #3).

Figure 3.22-7. Looking southwest at caved Adit 5 at Site No. K8080004. The adit is caved just beyond the portal timbers (Roll 00K14, frame #5).
Figure 3.22-8. Notch eroded through the waste dump for Adit 5 at Site No. K8080004. Sample K8080005 was collected from the slope of the cut (Roll 00K14, frame #6).

Figure 3.22-9. Old compressor, which was powered by a gasoline engine, along Trail 303 at Site No. K8080004 (Roll 00K14, frame #7).
3.23 MIKADO PROSPECT (Site No. GR-21)

3.23.1 Site Location and Access (Figure 2.1-1a)

The Mikado Prospect is north of Baboon Gulch near the center of the NW¼ of section 13, T. 25 N., R. 3 E., on the Florence 7.5-minute quadrangle (Figure 3.23-1). An access road to the property probably originates on FS Road 643 north of Florence and branches off the road to the Florence cemetery, although this route was not taken. The prospect is on a block of patented land that has been logged within the past few years. The patented land is surrounded by Forest Service land.

3.23.2 Geologic Features (Figure 2.2-1a)

The workings at the Mikado developed quartz veins in granite.

3.23.3 Site History

McKay (1998, p. 217) reported:

- The Mikado lode claim was located at the head of Baboon Gulch. J.B. Crooks and Kerlee located it in 1896. First mentioned in the summer of 1897, the owners began a 200-foot tunnel that would tap the vein at a depth of about 100 feet. During the winter of 1898-99, ore worth $1 per pound was being taken from the claim, and the lower drift was in 40 feet. By March a crew under the management of A.H. Bishop was working on the 60-foot level running a 46-foot-long east drift. The vein was crosscut about 16 feet on that level. The ore body was reportedly expensive to work because it was solid. That summer the Mikado purchased the hoist that had been on the Bay Horse claim and set it up to work the lower levels on the Mikado. The mine was mentioned in 1901, when it was listed as having much development work. In 1907 the owners (from Dayton, Washington) made a three-ton test run at the mill on the Bear Track claim and got a return of about $125, averaging over $40 gold per ton. The Mikado is not mentioned again until 1926, when a little gold ore was treated by amalgamation. From at least 1931 until 1937, the claim was owned by J.W. Jesse of Dayton, Washington.

Reed (1939, p. 41) noted: “The principal evidence of former development at the Mikado is an inaccessible shaft in the NW 1/4 of Sec. 13, T. 25 N., R. 3 E., on a branch of Miller Creek.”

3.23.4 Environmental Conditions

3.23.4.1 Site Features

The Mikado Prospect was visited by John Kauffman on August 8, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 2, index 0:36:58-0:42:34). Documenting photographs are Roll 00K14, frames 8-9.
Two pits, one of which was a shaft, and a probable caved adit are on the west-facing slope below an old cabin near the eastern edge of the patented block of land (Figure 3.23-2). A logging road switches back down the hill from the cabin and passes just above the workings. The pit for the shaft is 12-15 feet in diameter and 15 feet deep (Figure 3.23-3). There is a hole in the bottom of the pit that is filled with water, although the shaft may be caved just below water level. The waste dump is about 15 feet long, 12 feet wide, and about 10-15 feet thick. Just west of the shaft and above a trough is a second pit, about 10 feet in diameter and 8 feet deep. This may be a collapsed stope above a caved adit. A somewhat irregular dump, about 75 feet long, 10 feet wide, and 15 feet thick, extends into the dry drainage from the lower end of the trough. Some of this material may have been reworked by later placer operations. The disturbed area from lode mining covers less than 0.5 acre.

3.23.4.2 Sample Locations

3.23.4.2.1 Solid Samples
No solid samples were collected.

3.23.4.2.2 Water Samples
No water samples were collected.

3.23.5 Structures

There is an old log cabin on the ridge top at the eastern edge of the property (Figure 3.23-4). The cabin has a metal roof and appears to be maintained. The National Forest boundary is a few feet east of the cabin.

3.23.6 Safety

It could not be determined if the shaft is open or caved below the water in the bottom of the pit. If it is open, the shaft is a significant hazard; if it is caved, there is little or no hazard.
Figure 3.23-1. Location of the Mikado Prospect, Idaho County, Idaho (U.S. Geological Survey Florence 7.5-minute topographic map).
Figure 3.23-2. Sketch of the Mikado Prospect.
Figure 3.23-3. Looking down at the pit of the shaft at the Mikado Prospect. Water fills a hole in the bottom of the pit (Roll 00K14, frame #9).

Figure 3.23-4. Old log cabin at the eastern edge of the patented claim. The trees behind the cabin are on National Forest land (Roll 00K14, frame #8).
3.24 JACK POT PROSPECT (Site No. K8150001)

“Jack Pot” is a recent name found on a claim notice dated 1973. The site may be on the old Blossom claim, although the description of the Blossom workings in McKay (1998, p. 194-195) indicate more substantial workings than were found.

3.24.1 Site Location and Access (Figure 2.1-1a)

The Jack Pot Prospect is on the ridge that extends southwest from the Florence cemetery in the SE¼ of the NW¼ of section 13, T. 25 N., R. 3 E., on the Florence 7.5-minute quadrangle (Figure 3.24-1). An adit symbol is shown on the topographic map at this location. The site was reached by foot from the cemetery, although a jeep trail to the property originates on the short access road to the cemetery from FS Road 643. The prospect is on Forest Service land.

3.24.2 Geologic Features (Figure 2.2-1a)

The prospect is on quartz veins in granite.

3.24.3 Site History

Nothing is known about the history of the Jack Pot. If this site is on the old Blossom claim, a brief historical account of that claim can be found in McKay (1998, p. 194-195).

3.24.4 Environmental Conditions

3.24.4.1 Site Features

The Jack Pot Prospect was visited by John Kauffman on August 15, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 2, index 0:42:38-0:47:57). Documenting photographs are Roll 00K14, frames 10-11.

One caved adit was found on the property, along with deep placer gullies and trenches. The partly collapsed portal of the adit has a wooden door that is open, but the adit is caved just past the portal (Figure 3.24-2). A very minor seep forms a wet area in front of the adit. The waste dump appears to have been removed by placer operations. Both sides of the low ridge have been placered, resulting in deep ravines and cuts on the slopes. Minor trenches are on the ridge near the adit. The disturbed area from lode mining is minimal. Placer mining impacted several acres.

3.24.4.2 Sample Locations

3.24.4.2.1 Solid Samples

No solid samples were collected.
3.24.4.2.2 Water Samples
No water samples were collected.

3.24.5 Structures

A modern cabin and a shed, each about 16 feet long and 12-14 feet wide (Figure 3.24-3), are on the flat ridge top a short distance southeast of the adit. The jeep road to the site ends at the cabin.

3.24.6 Safety
No safety hazards were found at the site.
Figure 3.24-1. Location of the Jack Pot Prospect, Idaho County, Idaho (U.S. Geological Survey Florence 7.5-minute topographic map).
Figure 3.24-2. Wooden door on the portal of the caved adit at the Jack Pot Prospect (Roll 00K14, frame #10).

Figure 3.24-3. Modern cabin and storage shed at the Jack Pot Prospect (Roll 00K14, frame #11).
3.25 MORNING SUN PROSPECT (Site No. GR-25)

3.25.1 Site Location and Access (Figure 2.1-1a)

The Morning Sun Prospect is at the head of Baboon Gulch in the SW¼ of the NE¼ of section 13, T. 25 N., R. 3 E., on the Florence 7.5-minute quadrangle (Figure 3.25-1). The site is accessible by foot and is a short distance down the slope from FS Road 643, starting from the junction between Road 643 and the road to the Florence cemetery. The site is on Forest Service land.

3.25.2 Geologic Features (Figure 2.2-1a)

There were both placer and lode operations at the Morning Sun Prospect. The lode prospects were on quartz veins in granite. According to Reed (1939), the veinlets trended nearly east and had a maximum thickness of several inches.

3.25.3 Site History

McKay (1998, p. 218) reported:
In 1920 A.S. Deflong, James Ward, and Thomas Thompson claimed the mine, one of many placer and lode claims held by Ward and associates. In 1934 the Peterson brothers sank a small shaft on a veinlet, one of several on the claim that trended nearly east and reached a few inches in thickness.

3.25.4 Environmental Conditions

3.25.4.1 Site Features

The Morning Sun Prospect was visited by John Kauffman on August 15, 2000. No video or photographs were taken at this site.

A small pit, about 10 feet in diameter and 5 feet deep, was found at the site, possibly the “small shaft” reported by Reed (1939, Plate 1). The size of the associated waste dump indicates the shaft was at least 15-20 feet deep, but probably not over 50 feet. Reed’s map also showed a nearby adit, which also appears on the Florence 7.5-minute topographic map. No conclusive evidence for this adit was found. The entire upper part of the Baboon Gulch drainage has been placered, and there are numerous deep gullies on the sides of the drainage. Some of these have the general appearance of a caved adit, although none had an obvious waste dump. The disturbed area is minimal, although the old placer workings probably cover several acres.

3.25.4.2 Sample Locations

3.25.4.2.1 Solid Samples
No solid samples were collected.
3.25.4.2.2 Water Samples
   No water samples were collected.

3.25.5 Structures
   No structures were found at the site.

3.25.6 Safety
   There are no safety hazards at the site.
Figure 3.25-1. Location of the Morning Sun Prospect, Idaho County, Idaho (U.S. Geological Survey Florence 7.5-minute topographic map).
3.26 GILT EDGE MINE (Site No. GR-28)

3.26.1 Site Location and Access (Figure 2.1-1a)

The Gilt Edge Mine is at the end of FS Road 643D1 in the NW¼ of the SW¼ of section 18 (Protraction Block 44), T. 25 N., R. 4 E., on the Florence 7.5-minute quadrangle (Figure 3.26-1). At Florence, FS Road 643D branches to the east from Road 643. After about ½ mile, Road 643D1 branches to the northeast from Road 643D and ends at the mine, a distance of about ¼ mile. The site is on Forest Service land.

3.26.2 Geologic Features (Figure 2.2-1a)

No description of the geology of the Gilt Edge was found, but it is most likely similar to other prospects in the Florence area.

3.26.3 Site History

McKay (1998, p. 203-205) reported:

The Gilt Edge mine was located on Summit Creek northeast of New Florence[. ] J.B. Williams discovered it in 1895, and development work began on the claim in the winter of 1895-96. By spring of 1896, the mine was producing ore that was crushed at the custom mill in Florence. The owners at that time were Miller, Huff, and McKenna. The returns must have been profitable, because in May of 1896 the owners paid off the purchase price of the property plus all the operating expenses and declared a dividend within 30 days. During 1896 or 1897, Huff and two others took out $1,280 after paying $9 per ton for milling. By summer 1898 Robert J. McLean of Florence owned the Gilt Edge. In 1900 eight tons of ore that were run through the mill yielded about $800. A year later the Gilt Edge mine had the most activity in Florence. Minnesota men who had invested in the mine installed a hoist and planned to sink a double-compartment shaft 100 feet to reach the ore body.

By 1903 the mine had been developed by a 150- or 200-foot shaft. The ore was reported to yield $50-$70 in free-milling gold. In the fall of 1903 the Gilt Edge Mining Company filed suit against Robert McLean and the Old National Bank of Spokane (which held the contract), saying the mine had been salted. The result of the suit is not known, but by 1904 the Gilt Edge was reported to be paying. A three-stamp Merrall mill was on the property by 1905. During 1904 and 1905 it was worked by S.H. Murphy, a mining man of Idaho, Washington, and Oregon. Unlike most other lode mines in Florence, the Gilt Edge continued to be worked in the 1910s. In 1912 it was reported that equipment and one hundred cords of wood were being hauled to the mine, which was owned by Dan Dunn. In the late 1930s, John Reed found the old stamp mill in disrepair. He reported that the mill
[mine] was developed by a shaft and short tunnel. Gus Halmadge later moved the stamp mill to his Mother Lode claim [Lone Pine Mine], but he never operated it.

During the summer of 1896, four men tried to jump the claim while C.M. Huff was working there. He was shot in the right wrist but managed to get his gun; they were at a stand-off for three hours until help came from town. The Gilt Edge was also the scene of an accident in 1903. Dr. Jackson, Dr. Phelps, and a Mr. Day, all of Spokane, were preparing to start the pump to drain the shaft when Day climbed into the shaft to do a repair. After the pump started, a chain broke and a pipe fell on Day’s head.

In the late 1930s, the Gilt Edge was reported to be the property of James Ward, Hinckson, and Bishop (Reed, 1939).

3.26.4 Environmental Conditions

3.26.4.1 Site Features

The Gilt Edge Mine was visited by John Kauffman on August 15, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 2, index 0:48:19-0:52:14). Documenting photographs are Roll 00K14, frames 15-16.

Very little other than small, sloughed pits and trenches, placer piles, and an old cabin remain at the Gilt Edge. Timbers and planks below the west edge of the access road not far from the cabin may be either the entrance to an adit, the surface framing of a shaft, or a storage cellar (Figure 3.26-2). No waste dump was associated with this feature. The cabin site and placer workings cover several acres, although the placered area has been revegetated with lodepole pine and fir trees, as well as low bushes and grass in places.

3.26.4.2 Sample Locations

3.26.4.2.1 Solid Samples
   No solid samples were collected.

3.26.4.2.2 Water Samples
   No water samples were collected.

3.26.5 Structures

An old log cabin at the site is standing but in overall disrepair, although the inside support beams are still in good condition. An outhouse is in the trees behind the cabin, and a small storage shed is a short distance south of the cabin. A considerable amount of scrap metal, boards, old garbage, and some recent garbage litter the area.
3.26.6 Safety

Except for the minor possibility of cuts or punctures from nails and scrap metal, no safety hazards were found at the site.
Figure 3.26-1. Location of the Gilt Edge Mine, Idaho County, Idaho (U.S. Geological Survey Florence 7.5-minute topographic map).
Figure 3.26-2. Boards and timbers of an undetermined structure below the access road near the cabin at the Gilt Edge Mine. The structure could be either an adit entrance, a shaft, or an underground storage compartment (Roll 00K14, frame #16).

Figure 3.26-3. Old log cabin at the Gilt Edge Mine. The metal roof has protected the cabin to some extent, but overall, the building is in poor condition (Roll 00K14, frame #15).
3.27 OZARK CLAIM (Site No. GR-15)
Alternate name—Black Hawk Prospect.

3.27.1 Site Location and Access (Figure 2.1-1a)

The Ozark Claim is on the south side of upper Ozark Creek near the center of the S½ of the SE¼ of section 12, T. 25 N., R. 3 E., on the Florence 7.5-minute quadrangle (Figure 3.27-1). The site was reached by hiking from FS Road 643J, a short spur west off of Road 643 about 1 mile north of Florence. The prospect is on the west side of a small side tributary to Ozark Creek at an elevation of 6,000 feet. It is on a small, north-trending spur to the main ridge between two branches of Ozark Creek. The site is on Forest Service land.

3.27.2 Geologic Features (Figure 2.2-1a)

The prospect is on thin quartz stringers in granite. Reed (1939, p. 42) noted:
A tunnel and shaft, both inaccessible, indicate that the lode trends N. 85° W. and dips 65° S. Pieces of vein quartz as much as 6 inches thick were seen on the tunnel dump.

3.27.3 Site History

In the late 1930s, a claim notice at the site identified it as the Ozark claim. The claim had formerly had been called the Black Hawk and was located by W. R. Crim (Reed, 1939).

McKay’s (1998, p. 220-222) history of the “Ozark” mostly contains information on the Ozark Mine, a separate property (see Section 3.28). However, information on this site, the Ozark Claim, is mixed with that for the Ozark Mine, and information for a third Ozark claim may also be included in McKay’s (1998) “Ozark” history.

3.27.4 Environmental Conditions

3.27.4.1 Site Features

The Ozark Claim prospect was visited by John Kauffman on August 15, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 2, index 0:52:19-0:55:17). Documenting photographs are Roll 00K14, frames 17-18.

Although Reed (1939) reported a tunnel and a shaft, only the shaft with an adjacent pit was found (Figure 3.27-2). The shaft is on the nose of the small, flat-topped spur ridge. The shaft is caved, but the pit is 12 feet in diameter and 10-12 feet deep. It has steep walls on the south and east sides (Figure 3.27-3). The dump extends north from the pit, measuring 30 feet long, 10 feet wide, and 4-10 feet thick (Figure 3.27-4). A shallow pit, adjacent to the northeast edge of the pit for the shaft, is 8 feet in diameter and 5 feet deep. A small pile of excavated material is on the northeast rim of the shallow pit. The disturbed area covers less than 0.25 acres.
3.27.4.2 Sample Locations

3.27.4.2.1 Solid Samples
   No solid samples were collected.

3.27.4.2.2 Water Samples
   No water samples were collected.

3.27.5 Structures
   No structures were found at the site.

3.27.6 Safety

The steep south and east walls of the shaft pit are hazardous, but the north and west sides are less steep and should provide a means of escape from the pit. No other potential hazards were found.
Figure 3.27-1. Location of the Ozark Claim, Idaho County, Idaho (U.S. Geological Survey Florence 7.5-minute topographic map).
Figure 3.27-2. Sketch of the workings at the Ozark Claim.
Figure 3.27-3. Caved shaft at the Ozark Claim. View is to the south of the steep south and east walls of the pit. Quartz stringers can be seen cutting the granite (Roll 00K14, frame #17).
Figure 3.27-4. Shallow pit adjacent to the shaft (lower right foreground) and the waste dump for the shaft (center of the picture behind the clump of trees) at the Ozark Claim (Roll 00K14, frame #18).
3.28 OZARK MINE (Site No. GR-16)
Alternate name—Bald Eagle.

3.28.1 Site Location and Access (Figure 2.1-1a)

The Ozark Mine is at the head of Ozark Creek in the extreme southeast corner of section 12, T. 25 N., R. 3 E., on the Florence 7.5-minute quadrangle (Figure 3.28-1). A short access road about 1 mile north of Florence leads to the mine from FS Road 643, although this road is not shown on the topographic map. The site is on Forest Service land.

3.28.2 Geologic Features (Figure 2.2-1a)

Lindgren (1900, p. 237) reported:
The deposit consists of one principal vein averaging 18 inches in thickness and striking S. 84° E. A smaller vein averaging a foot in width joins the former vein at an acute angle, having a strike of N. 88° E. A number of smaller stringers run parallel to the latter. The largest vein cuts off the second as well as its parallel stringers. In all, these stringers form a zone up to 50 feet wide, which is said to contain enough to be milled with profit. The quartz is of the ordinary glassy kind, seemingly characteristic of this camp. It contains but little sulphures and shows excellent comb structure. Some of the altered granite along the stringers carries free gold and is crushed with the quartz.

3.28.3 Site History

McKay (1998, p. 220-222) gave the following account of the Ozark Mine history:
The Ozark was first mentioned by name in the fall of 1895, when J.P. Fitzgerald and J.S. Rhoades [later spelled without the “e”] were the owners of the claim (in 1890 Fitzgerald and one other man wintered in Florence developing a claim owned by Rhoads that may have been the Ozark - Rhoads owned it beginning in 1890 - but that claim was described as being 0.75 mile south of Florence, on Caribou Hill). They put in a 30-foot-deep shaft by October, with a reported $17 per ton yield, and in December they sold the claim to Gilbert (president of the First National Bank of Moscow) and Jacobs and McCrea of Kendrick for $10,000. Fitzgerald continued working the mine under contract to the new owners.

By March of 1896 the mine had new owners, McDonald & Komers of a mercantile firm in Julietta [Juliaetta]. Fitzgerald continued to work on the mine under contract. Other contract workers included John S. and L.E. Smith of Grangeville, experienced miners who by the summer of 1896 had driven 175 feet of tunnel on the property. Then, in July, Fitzgerald and Rhoades sold the Ozark for a reported $20,000, retaining an interest in the mine. The vein at that time was 3 feet 4 inches wide, and the ore yielded about $10-$15 per ton. In October of 1897 the Blossom
mine put into operation a five-stamp mill. In January of 1897 the Idaho County Free Press reported that the mine had previously been mismanaged and the old company had run into debt. A new company of Spokane and Moscow investors hired a large crew to work the low-grade ore deposit and run the mill, under the management of A. Walker. The mill, manufactured by the Risdon Iron Works of San Francisco, was remodeled, and some new machinery was added. By summer the mill was working day and night under the management of M. James Shields of Moscow, and it ran and made cleanups until it had crushed all the extracted ore and then ran again in the fall with a large payroll, crushing 12 tons of ore per day. In one 36-hour period in November, the mill produced 100 ounces of gold, and the free gold was described as being “as large as a pen.” The five-stamp mill at the Ozark was described as having 850-pound stamps that dropped ninety times per minute. The Chalmer ore feeder conveyed 12 to 15 tons every twenty-four hours, and the mortar weighed fifty-six hundred pounds. The mill was powered by a 14-hp Buffalo Pits engine. The water feeding the battery ran backward and forward in pipes through the firebox of the engine.

After the intense activity at the Ozark during 1897, at which time it and the Hi-Yu were the only producing mines in Florence, activity slowed down greatly. The mill crushed ore from the Ozark mine in 1898 and the mine was active in 1900, but it was rarely mentioned after 1897. One account says the mine did not produce after 1897. By 1900 the development included two tunnels 600 feet long that cut the seam obliquely and struck about north 62 degrees east [paraphrased from Lindgren, 1900]. In 1903 M.J. Shields of Moscow was the owner, but the mine was idle.

In 1927 Al Deflong, who had owned this mine since 1923 (and also owned the Annie Laurie and Morning Sun), purchased a twenty-ton stamp mill that the Idaho County Free Press reported as being for the “Deflong mine.” The crusher could handle fifteen to twenty tons of ore per day, and it was operated by a 3-hp engine. The stamp mill was probably purchased for the Ozark mine.

When John Reed visited the site of the Ozark mine in the late 1930s, he reported that the workings were inaccessible but that the large waste dumps contained pieces of quartz up to 6 inches thick [this quartz was seen on the Ozark Claim (GR-15), not the Ozark Mine (GR-16)]. The “old stamp mill” (perhaps the one purchased by Deflong in 1927) was still visible along the creek, and a small shaft (three sets deep) was found along the north-south section line. During the 1950s the Jungert brothers and Albert Hale owned the Ozark claim. Hale died in early 1958 (he had been a miner in Florence for over twenty years). The Jungerts made many tests on the vein, finding gold values over 20 feet in length on one stringer. They dug many prospect trenches and sank a single-compartment shaft twenty-six feet deep. They used a three-quarter-yard shovel and bulldozer for open-pit
excavation, drainage, and exploratory operations in 1957. The Jungerts located
the property for the Idaho Mining & Milling Co. based in Lewiston (Philip Jungert
president and Marion Jungert secretary-treasurer).

3.28.4 Environmental Conditions

3.28.4.1 Site Features

The Ozark Mine was visited by John Kauffman on August 15, 2000. A video segment describing
the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 2,
index 0:55:21-1:12:55). Documenting photographs are Roll 00K14, frames 19-24, and Roll
00K15, frames 1-2.

Four shafts, an adit, and several trenches are at this site, along with some machinery, the remains
of a stamp mill, and a small Huntington mill (Figure 3.29-2). Shafts 1 and 2 are in the bottom of
the broad drainage. Both shafts may be open, although they are filled with water and the depth
below the water could not be determined. Shaft 1, possibly the shaft described by Reed (1939,
p. 42) as “three sets deep . . . along the north-south section line,” is framed and lagged with logs,
and covered with planks and logs, giving it the appearance of a bridge across the creek (Figure
3.28-3). A wide pit is adjacent to the log framing and is also filled with water. The pit and shaft
are surrounded by the remnants of an old fence. Shaft 2 is west of Shaft 1. It is also filled with
water and the sides are lagged with logs (Figure 3.28-4). This may be the “single-compartment
shaft twenty-six feet deep” reported by McKay (1998, p. 222) to have been dug in the 1950s.
The broad valley has a flat, grassy area and a shallow pond which may contain waste rock that has
been spread out below the shafts. No obvious waste dumps are associated with either shaft,
although there are low mounds in the area. Some of these mounds may be related to post-lode-
mining placer operations.

The adit is on the northeast side of Ozark Creek on the slope north of the two shafts and is
completely caved. A large trough on the slope marks its location (Figure 3.28-5). The waste
dump is 75-80 feet long, 10-20 feet wide, and 25 feet thick (Figure 3.28-6), indicating rather
extensive workings. This may possibly be one of the two 600-foot-long adits reported to be at
the Ozark Mine. The other adit was not found.

On the slope above the adit are two more shafts, Shafts 3 and 4. Shaft 3 (possibly a collapsed
stope) is directly above the adit and is caved. The pit of the caved shaft is at least 20 feet in
diameter and 12-15 feet deep (Figure 3.28-7). Numerous long, small-diameter logs in the pit may
once have covered the opening. Shaft 4 is further up the slope near the ridge top and is also
caved. The pit for this shaft is smaller and shallower than that for Shaft 3. A rim of waste rock
surrounds the pit. Several trenches and pits are in the vicinity of Shaft 4. Other shallow trenches,
two of which may be short, caved prospect adits below the main adit, are along the access road.
Equipment left at the site includes an old bulldozer (Figure 3.28-8), the remains of a four-stamp mill (Figure 3.28-9), and a small Huntington mill (or crusher) driven by a gasoline engine (Figure 3.28-10). No tailings were evident at either mill site.

3.28.4.2 Sample Locations

3.28.4.2.1 Solid Samples
No solid samples were collected.

3.28.4.2.2 Water Samples

A water sample was collected from a small stream in the drainage below the remains of the stamp mill. This water soon disappears into placer tailings and intermittently reappears farther downstream.

<table>
<thead>
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<th>Sample No.</th>
<th>Location</th>
<th>Specific Conductivity ($\mu$S)</th>
<th>Temperature ($^\circ$F)</th>
<th>pH</th>
<th>Flow (gpm)</th>
<th>Analyzed (Yes/No)</th>
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<tbody>
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<td>K8150003</td>
<td>Ozark Mine, downstream</td>
<td>35</td>
<td>58</td>
<td>4.5</td>
<td>1 ft. wide, 0.1 ft. deep</td>
<td>Yes</td>
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</table>

3.28.4.2.3 Analytical Results

Water Samples (Tables 2.5-1 and 2.5-2)

Sample K8150003, from the minor flow in the creek below the old stamp mill, exceeds the Secondary MCL and Aquatic Life Acute standard for iron and the Secondary MCL for manganese in both the dissolved metals and the total recoverable metals screens.

3.28.5 Structures

There are no buildings at the site, but there is an old outhouse and a very small, metal-roofed storage compartment (seen in Figure 3.28-8) at the site. A considerable amount of scrap metal, old boards, and other debris is also present.

3.28.6 Safety

Shafts 1 and 2, although probably not very deep, may be open below water level. Depending on the depths to which they are open, either or both shafts could be hazardous.
Figure 3.28-1. Location of the Ozark Mine, Idaho County, Idaho (U.S. Geological Survey Florence 7.5-minute topographic map).
Figure 3.28-2. Sketch of the workings at the Ozark Mine.
Figure 3.28-3. Log frame and cribbing at Shaft 1 at the Ozark Mine. The covered shaft has the appearance of a bridge. Water fills the shaft and the pit beside the shaft. The pit wall is in weathered granite (Roll 00K14, frame #21).

Figure 3.28-4. Log cribbing of Shaft 2 at the Ozark Mine. Water also fills this shaft. The depth below water level was not determined (Roll 00K14, frame #20).
Figure 3.28-5. Deep trough of the caved adit at the Ozark Mine, looking northeast (Roll 00K14, frame #22).

Figure 3.28-6. Looking southwest across the waste dump for the adit at the Ozark Mine from the top of the trough of the caved adit. Several piles of timbers are on the long waste dump (Roll 00K14, frame #24).
Figure 3.28-7. Pile of long, small-diameter logs in the pit of caved Shaft 3 at the Ozark Mine (Roll 00K14, frame #23).
Figure 3.28-8. Old bulldozer and metal-roofed storage compartment at the Ozark Mine, looking south. Some of the log framework for Shaft 1 is in the background behind and to the right of the bulldozer. Shaft 2 is in the bushes off the right edge of the picture (Roll 00K14, frame #19).

Figure 3.28-9. Stamps and cam shaft drive wheel for the four-stamp mill at the Ozark Mine (Roll 00K15, frame #1).
Figure 3.28-10. Huntington mill (covered with metal sheets, just right of center), drive wheel, and red gasoline engine (under crude tripod) along the access road northwest of the main Ozark Mine site (Roll 00K15, frame #2).
3.29 IRISHMAN PROSPECT (Site No. GR-12)

3.29.1 Site Location and Access (Figure 2.1-1a)

The Irishman Prospect is on the northeast side of Ozark Creek in the SE¼ of the SE¼ of section 12, T. 25 N., R. 3 E., on the Florence 7.5-minute quadrangle (Figure 3.29-1). Access is by foot from the road that continues past the Ozark Mine. The minor workings are on Forest Service land near the top of a low ridge between dry side gullies that are tributaries of Ozark Creek.

3.29.2 Geologic Features (Figure 2.2-1a)

The workings are in granite. The waste dumps have a few small fragments of white vein quartz.

3.29.3 Site History

The Irishman is shown on Reed's (1939) map of the Florence district, which is dated 1937. No other information was found about the history of this site.

3.29.4 Environmental Conditions

3.29.4.1 Site Features

This prospect was visited by John Kauffman on August 15, 2000. No video or photographs were taken at the site.

This minor prospect consists of a shaft and adit, both of which are caved. The shaft is on top of the low ridge and has a small mound of excavated rock on the east rim. The adit is directly below the shaft and was driven westward into the slope. The waste dump for the adit measures 25 feet long, 15 feet wide, and 5 feet thick. Several minor prospect pits are also in the area. The disturbed area covers less than 0.5 acre.

On the next drainage north of this prospect are numerous narrow, deep gullies on the side slopes, all of which appear to be placer workings. This may be the site of the Red Wing prospect (Site No. GR-14). The placer workings cover several acres in the drainage.

3.29.4.2 Sample Locations

3.29.4.2.1 Solid Samples
No solid samples were collected.

3.29.4.2.2 Water Samples
No water samples were collected.
3.29.5 Structures
   No structures were found at the site.

3.29.6 Safety
   No safety hazards were found at the site.
Figure 3.29-1. Location of the Irishman Prospect, Idaho County, Idaho (U.S. Geological Survey Florence 7.5-minute topographic map).
3.30 GOLDEN DIKE PROSPECT (Site No. GR-13)
Alternate names - Golden Dyke; Sampson.

3.30.1 Site Location and Access (Figure 2.1-1a)

The Golden Dike Prospect is at the head of Pioneer Gulch in the SW¼ of the SW¼ of section 7 (Protraction Block 43), T. 25 N., R. 4 E., on the Florence 7.5-minute quadrangle (Figure 3.30-1). An adit and a building symbol are shown on the topographic map at this site. A short access road, which is about ½ mile south of the turnoff from Road 394, leads to the site from FS Road 643. The prospect is on Forest Service land.

3.30.2 Geologic Features (Figure 2.2-1a)

Hundreds of quartz veinlets are on the claim. Most of the veinlets strike northwest and have generally steep northeast or southwest dips. A few veinlets strike northeast (Reed, 1939). The host rock for the veinlets is granite.

3.30.3 Site History

McKay (1998, p. 207) reported:
The Golden Dike fraction claim was located near the head of Pioneer Gulch, on the west side of the Meadow Creek - Miller Creek divide. It extended along the road a distance between Archie B. Adley's cabin and the Pape cabin. Adley worked the claim on a small scale for many years. In 1939 the development work consisted of several very short tunnels and many prospect cuts in the weathered bedrock that had been exposed by the old placer work in the area. The old workings on the claim included the outcrops of an extensive altered zone that contained many very rich quartz veinlets. Ore from the Golden Dike was crushed in a small home-made rod mill on Pioneer Creek, and the crushed material was run over a short sluice that recovered much of the gold from the rich ore. . . . The Golden Dike mine was one of three main producers of gold in Florence in 1940.

3.30.4 Environmental Conditions

3.30.4.1 Site Features

The Golden Dike Prospect was visited by John Kauffman on August 15, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 2, index 1:13:19-1:21:32). Documenting photographs are Roll 00K15, frames 3-10 (several frames are duplicates, and frame 8 is blurred).

This site consists of three short, caved adits, a cabin, and numerous placer workings (Figure 3.30-2). Caved Adit 1 is at the head of a deep cut, possibly a placer trench, in weathered granite
(Figure 3.30-3). A minor seep forms a small pool at the mouth of the cut. Boards, timbers, scrap metal, and a barrel are in the trench at what is probably the collapsed portal. Caved Adit 2 appears to have been a short tunnel on the west side of the cut at Adit 1. A few upright timbers and rotten wood beams, along with some scrap metal, are in the caved debris (Figure 3.30-4). Mounds of material around and below these adits may be waste rock that appears to have been reworked by placer operations. Numerous placer trenches and placer waste piles are along Pioneer Creek below these adits. Adit 3 is east of Adit 1 and just west of the access road and the cabin. This adit is also caved, with old boards and scrap metal in the trough (Figure 3.30-5). The waste dump is 25 feet long, 12 feet wide, and 10 feet thick. Two deep placer trenches are between Adits 1 and 3. The disturbed area at the site, including extensive placer workings, covers at least 5 acres. The cabin site and adits account for about 1 acre.

Two prospect symbols are shown on the topographic map north of this site, one along FS Road 643 beside a building symbol about ¼ mile to the north and the other on the north side of Pioneer Gulch about ½ mile north of the Golden Dike. At the first location, shallow prospect pits and placer workings were found. At the second, bulldozer cuts and placer workings were found in weathered granite. Several piles of white quartz-vein fragments were noted. An old earthen dam across the creek was partly breached, leaving only a small pond. Old boards at the site may be from a collapsed outhouse. Also, a board on the ridge north of the gulch noted “Dollar Days Claim” and “Wolf Gram.” No video or photographs were taken at either of these sites.

3.30.4.2 Sample Locations

3.30.4.2.1 Solid Samples

No solid samples were collected.

3.30.4.2.2 Water Samples

Sample K8150004 was collected from the pool of the minor seep at Adit 1.

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<th>Sample No.</th>
<th>Location</th>
<th>Specific Conductivity (μs)</th>
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<th>pH</th>
<th>Flow (gpm)</th>
<th>Analyzed (Yes/No)</th>
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<tr>
<td>K8150004</td>
<td>Golden Dike, Adit 1 seep</td>
<td>30</td>
<td>57</td>
<td>6.8</td>
<td>seep</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3.30.4.2.3 Analytical Results

Water Samples (Tables 2.5-1 and 2.5-2)

Sample K8150004 does not exceed any standards in either the dissolved metals screen or the total recoverable metals screen.
3.30.5 Structures

The old log cabin at the site (Figure 3.30-6) is standing, but in disrepair. There is also an old outhouse north of the cabin in the trees. A considerable amount of junk is scattered around the site.

3.30.6 Safety

No significant safety hazards were identified at this site.
Figure 3.30-1. Location of the Golden Dike Prospect, Idaho County, Idaho (U.S. Geological Survey Florence 7.5-minute topographic map).
Figure 3.30-2. Sketch of the Golden Dike Prospect site.
Figure 3.30-3. Cavend Adit 1 at the Golden Dike Prospect, looking west. A minor seep forms the small pool at the lower part of the picture. The deep notch may have been placered prior to driving the adit (Roll 00K15, frame #4).
Figure 3.30-4. Caved Adit 2 at the Golden Dike Prospect, looking west. This was probably a very short tunnel parallel to Adit 1 (Roll 00K15, frame #3).
Figure 3.30-5. Old boards and scrap metal at caved Adit 3 of the Golden Dike Prospect, looking west (Roll 00K15, frame #5).

Figure 3.30-6. Old log cabin at the Golden Dike Prospect (Roll 00K15, frame #9).
3.31 MICRO GOLD II MINE (Site No. K8160002)

3.31.1 Site Location and Access (Figure 2.1-1a)

The Micro Gold II Mine is just east of FS Road 394 in the SE¼ of the NW¼ of section 7 (Protraction Block 43), T. 25 N., R. 4 E., on the Florence 7.5-minute quadrangle (Figure 3.31-1). A short access road to the site turns east off Road 394 at the junction with Road 643, the road to Florence. The site is on Forest Service land.

3.31.2 Geologic Features (Figure 2.2-1a)

This was an open pit mine in granite that contains gold-bearing quartz veins and veinlets.

3.31.3 Site History

This site was owned by Powell Mining Company and leased by Micro Gold II. Micro Gold began mining at the site in 1983. The gold was recovered by shaker tables and amalgamation. Concerns over the release of mercury from the amalgamation process led to detailed site evaluation studies in the summer of 1985. The site was apparently reclaimed soon afterwards (CH2M HILL, 1985).

3.31.4 Environmental Conditions

3.31.4.1 Site Features

The Micro Gold site was visited by John Kauffman on August 16, 2000; the site had previously been visited by Earl Bennett in 1995. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 2, index 1:21:35-1:28:34). Documenting photographs from the recent visit are Roll 00K15, frames 11-12. Two photographs taken by Bennett in 1995 are included.

The site consists of a large, water-filled pit and a broad, open, flat area on the ridge above the pit (Figure 3.31-2). The open area, presumably the site of the processing facility and the equipment storage lot, has been reseeded with grass. In 1995, this area was surrounded by a cyclone fence capped by razor wire (Figure 3.31-3), but the fence has been removed. Below the open area to the east is a large pond (Figure 3.31-6) and the headwall of the pit (Figures 3.31-4 and 3.31-5). The pond filling the pit is about 250 feet long and 100 feet wide. The depth of the water was not determined, but algae and other aquatic plants growing on the bottom were observed, indicating a relatively shallow depth. Monitoring wells were noted around the site, although several have been vandalized. The disturbed area covers 5-10 acres.

3.31.4.2 Sample Locations

3.31.4.2.1 Solid Samples

No solid samples were collected.
3.31.4.2.2 Water Samples
   No water samples were collected.

3.31.5 Structures
   No buildings are at the site. An old log fence surrounds most of the site.

3.31.6 Safety
   No safety hazards were found at the site.
Figure 3.31-1. Location of the Micro Gold II Mine, Idaho County, Idaho (U.S. Geological Survey Florence 7.5-minute topographic map).
Figure 3.31-2. Sketch of the Micro Gold II Mine site.
Figure 3.31-3. Open area above the pit at the Micro Gold property, as seen in 1995. The fence around this area has been removed, and the ground has been reseeded (photograph by E. H. Bennett, 1995).

Figure 3.31-4. Large pond in the open pit at the Micro Gold property. Most of the pond appeared to be shallow (Roll 00K15, frame #11).
Figure 3.31-5. Headwall of the open pit in 1995. The fence around the open area is on the skyline above the headwall. The horizontal logs on the slopes around the headwall are for erosion control. The reclamation effort included planting numerous saplings. The white post on the open slope to the right is PVC casing for one of the monitoring wells (photograph by E. H. Bennett, 1995).

Figure 3.31-6. Headwall of the open pit in 2000. The saplings have more than doubled in size. Part of the old log fence surrounding the site is in the foreground. The monitoring well seen in the previous figure is barely visible at the far upper right of the picture (Roll 00K15, frame #12).
3.32 BEAR TRACK PROSPECT (Site No. GR-18)

3.32.1 Site Location and Access (Figure 2.1-1a)

The Bear Track Prospect is near the head of a tributary drainage of Meadow Creek in the NW¼ of the SW¼ of section 8, T. 25 N., R. 4 E., on the Florence 7.5-minute quadrangle (Figure 3.32-1). From FS Road 221, the prospect can be reached by driving south on FS Road 394 about 2½ miles to FS Road 9922, heading north on Road 9922 less than ½ mile, and then walking across the low divide separating the East Fork of Meadow Creek from the tributary to Meadow Creek. The site is on Forest Service land.

3.32.2 Geologic Features (Figure 2.2-1a)

The bedrock at the site is granite. According to Reed (1939, p. 38), "Several quartz veinlets in weathered bedrock were noted near the mine openings in exposures at the head of the placer cut."

3.32.3 Site History

McKay (1998, p. 191-192) reported:

The Bear Track claim was located in Bear Track Gulch, a tributary of Meadow Creek, at the head of a placer, adjacent to the Psyche and Lalla Rookh claims. Christopher Arnold located the claim in 1886, and that year he and his partner John Lee crushed ore from their mine. That summer they put in a 4-foot X 8-foot discovery shaft that was 40 feet deep (20 feet timbered). The vein was 10 inches wide at the bottom of the shaft. That fall they abandoned the shaft and drifted an adit on the hill slope behind the shaft, where the veins came together, uncovering some rich seams in the bedrock. They had an arrastra on the claim that yielded a good amount of gold in the spring of 1887. According to local mining engineer Walter Hovey Hill, Florence hotel keeper John Clark may have worked the Bear Track with an arrastra as early as 1863; he did own the claim in the 1890s and early 1900s.

The Bear Track is mentioned as a producing mine again in 1897, during the quartz boom. When John Clark applied for a patent in 1901, the claim was developed by the discovery shaft and by a 5-foot X 8-foot shaft that was 30 feet deep (the claim apparently was never patented, however).

The Bear Track continued to produce gold in the early 1900s. In 1904 the claim had a two-stamp triple-discharge mill, and its owner Harry K. Moore of Moscow planned to work it all that winter. A clean-up of a test run in 1905, after much development work, showed excellent results. At that time the claim had a 100-foot-deep shaft and a short tunnel. In 1906 it was under the same management as the nearby Skookum claim. The next year Miles Moore of Walla Walla (a former
governor of Washington) was a principal stockholder in the Bear Track. Little activity is reported in later years. In 1914 John L. Skelton and H.R. Hinkston prepared to pump out the mine and to start the mill, but it is not known if that was accomplished. Harry K. Moore remained the owner until at least 1923. In 1939, John Reed described the mine as having inaccessible workings, with several quartz veinlets in weathered bedrock visible near the mine openings in exposures at the head of the placer cut. The old mill was still located near the tunnel and shaft. The mine was accessible by car in dry weather.

The owner in the late 1930s was Frank McGrain of Grangeville (Reed, 1939).

3.32.4 Environmental Conditions

3.32.4.1 Site Features

The Bear Track Prospect was visited by John Kauffman on August 16, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 2, index 1:28:37-1:32:17). Documenting photograph is Roll 00K15, frame 13.

Very little remains at this site except a collapsed log cabin, a possible caved adit, and remnants of the placer operations that dominated the work in this drainage. The possible collapsed adit, indicated by a trough on the slope, is near the head of the gully north of the old cabin, about where a shaft is noted by Reed (1939, Plate 1). However, a waste dump is not obvious, and the feature could be related to placer operations. Old waste dumps may have been placered in later years. The shafts were not found. The disturbed area from lode mining is minimal. Most of the drainage has been extensively placered, and portions of the forest floor are nearly bare to the south of the cabin.

3.32.4.2 Sample Locations

3.32.4.2.1 Solid Samples

No solid samples were collected.

3.32.4.2.2 Water Samples

No water samples were collected.

3.32.5 Structures

The collapsed log cabin was the only building found at the site (Figure 3.32-2). No evidence of the reported mill was found. There is an abundance of old garbage (cans, scrap metal, bottle fragments, rusted 55-gallon barrels) at the cabin site.

3.32.6 Safety

No safety hazards were found at the site.
Figure 3.32-1. Location of the Bear Track Prospect, Idaho County, Idaho (U.S. Geological Survey Florence 7.5-minute topographic map).
Figure 3.32-2. Collapsed log cabin at the Bear Track Prospect, looking north (Roll 00K15, frame #13).
3.33 ECHO MINE (Site No. GR-222)
Alternate name—Cora Gulch Prospect.

3.33.1 Site Location and Access (Figure 2.1-1b)

This property is on Rapid River near the center of the S½ of the S½ of section 26 (unsurveyed), T. 23 N., R. 1 W., on the Heavens Gate 7.5-minute quadrangle (Figure 3.33-1). Access is from the Rapid River fish hatchery about 4½ miles along Trail 113. The trail crosses the waste dump of a caved adit on the west side of the river. Two adit symbols are shown on the topographic map on the slope east of the river, although no evidence of either was found. The site is within the Rapid River Wild River corridor.

3.33.2 Geologic Features (Figure 2.2-1b)

This prospect is in rocks of the Permian and Triassic Seven Devils Group near the Rapid River thrust fault (Gaston and Bennett, 1979).

3.33.3 Site History

The Echo Mining and Development Company was incorporated in 1919. In 1922, the property had three tunnels (102 feet, 25 feet, and 90 feet long). Another 25-foot tunnel is listed in the company’s annual report to the Idaho Mine Inspector, but this may be an accidental repetition. Echo Mining forfeited its corporate charter in 1924.

The estimated location of the Echo Mine (described as being “6 miles up Rapid River from Pollock”) placed the mine near two unnamed adits plotted on the Heavens Gate 7.5-minute topographic map and near the location of the Cora Gulch Prospect described by Close and others (1982). The extent of the development at the Cora Gulch Prospect, if any, is not known.

3.33.4 Environmental Conditions

3.33.4.1 Site Features

The Echo Mine was visited by John Kauffman on April 25, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 2, index 1:32:20-1:40:02). Documenting photographs are Roll 00K1, frames 7-8.

Figure 3.33-2 is a sketch of the site. The caved adit, covered with rock rubble and brush, is barely noticeable along the trail (Figure 3.33-3). The waste dump is very narrow on top, but it broadens to about 50 feet across the face and extends 50 feet down from the trail. The thickness on the slope is roughly 10 feet (Figure 3.33-4). None of the dump material reaches the river. Sections of 2-inch pipe extend down the slope from the caved adit through the brush to what was probably the site of an old cabin. Scrap metal and an old wood stove are on a small flat near the river. The disturbed area is less than 0.25 acre.
The two adits shown on the topographic map should be directly across the river from this adit, but no evidence of either was seen. Likewise, an adit noted on the topographic map along the trail about ¾ mile to the south (in the N½ of section 35) was not found.

Several possible bulldozer cuts are visible from Trail 113 on a bench about 400 feet above the river just north of Cora Gulch.

3.33.4.2 Sample Locations

3.33.4.2.1 Solid Samples

No solid samples were collected.

3.33.4.2.2 Water Samples

No water samples were collected at the site, but reference sample (K4250001) was taken from Rapid River about ¼ mile north of the prospect, and reference sample (K4250002) was taken from the West Fork of Rapid River about ¼ mile north of the prospect.

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<th>Location</th>
<th>Specific Conductivity (µS)</th>
<th>Temperature (°F)</th>
<th>pH</th>
<th>Flow (gpm)</th>
<th>Analyzed (Yes/No)</th>
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<td>Rapid River, reference sample</td>
<td>87</td>
<td>42</td>
<td>8.5</td>
<td>15 ft. wide, 1-3 ft. deep</td>
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<tr>
<td>K4250002</td>
<td>W. Fk. Rapid River, reference sample</td>
<td>74</td>
<td>43</td>
<td>8.1</td>
<td>12 ft. wide, 1-2.5 ft. deep</td>
<td>Yes</td>
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</table>

3.33.4.2.3 Analytical Results

Water Samples (Tables 2.5-1 and 2.5-2)

These samples do not exceed any standards in either the dissolved metals screen or the total recoverable metals screen.

3.33.5 Structures

There are no structures remaining at the site. Scrap metal and an old wood stove along the river north of the waste dump indicate a cabin formerly occupied the site.

3.33.6 Safety

There are no safety hazards at the site.
Figure 3.33-1. Location of the Echo Mine, Idaho County, Idaho (U.S. Geological Survey Heavens Gate 7.5-minute topographic map).
Figure 3.33-2. Sketch of the Echo Mine.
Figure 3.33-3. Rock rubble covering the caved adit at the Echo Mine, looking southwest (Roll 00K1, frame #7).
Figure 3.33-4. Looking down the face of the waste dump of the Echo Mine adit from Trail 113. Rapid River is just beyond the base of the dump (across the top of the picture) (Roll 00K1, frame #8).
3.34 OREGON GROUP (Site No. GR-220)
Alternate name—Oregon Tipton Mine.

3.34.1 Site Location and Access (Figure 2.1-1b)

The Oregon Group, a block of patented claims surrounded by National Forest land, is in the southeast part of section 22 and crosses diagonally from southwest to northeast through much of section 23 (unsurveyed), T. 23 N., R. 1 W., on the Heavens Gate 7.5-minute quadrangle (Figure 3.34-1). The claims are about 4 miles south of the Rapid River Fish Hatchery on Trail 113. The adit shown on the topographic map in the SE¼ of the SE¼ of section 22 was not found. Two open adits were videotaped from the ridge top east of Rapid River. These two openings are on Forest Service land on the east-facing slope below the Oregon claims. The Oregon Group and the nearby workings are only accessible by foot up the steep slopes above Rapid River and the West Fork of Rapid River. Portions of old foot trails to the workings probably still exist.

3.34.2 Geologic Features (Figure 2.2-1b)

The Oregon Group is in sheared Triassic limestone interbedded with greenstone and Triassic to Jurassic mafic intrusive rocks. The rocks in the surrounding area are dominated by the Permian and Triassic Seven Devils Group (Gaston and Bennett, 1979).

3.34.3 Site History

The Hartwig Mining Company was incorporated in 1907. In 1914, the company owned four patented mining claims that had two tunnels (1,400 feet and 50 feet) and two shafts (75 feet and 25 feet). Hartwig forfeited its corporate charter in 1915.

3.34.4 Environmental Conditions

3.34.4.1 Site Features

Two adits below the claim group were videotaped from a considerable distance by John Kauffman on May 8, 2000. On May 9, 2000, an unsuccessful attempt was made to find the adit labeled "Mine" on the topographic map. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 2, index 1:40:05-1:48:06). One photo, Roll 00K1, frame 24 (Figure 3.34-2), was taken from the ridge top east of Rapid River, showing the two openings that were videotaped.

The two adits videotaped from the ridge east of Rapid River are open. They are on the very steep slope west of Rapid River at an elevation of about 3,700 feet, or about 1,100 feet above the river. Thin veneers of waste rock are on the steep slope below the workings, but the amount of material did not appear to be extensive. The easiest access to these adits is probably from the ridge above, but even that is relatively difficult, so no attempt was made to visit the workings directly. The disturbed area is minimal.

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An attempt was made to find the adit shown on the topographic map across the ridge to the west of the two adits. The adit symbol is at an elevation of about 4,100 feet along the east edge of the SE¼ of section 22. A minor prospect pit was found at an elevation of about 4,300 feet, but no evidence of the adit was noted. There are many irregular rock outcrops in this area, and the adit may be hidden. A millsite claim is located along the West Fork on a map provided by the Forest Service, but no evidence of a mill was found.

An opening, shown on the video segment, was noted in a rock cliff west of the Oregon Group. The opening appeared to be natural, although it is near a steeply dipping dike or vein. No waste dump was noted.

3.34.4.2 Sample Locations

3.34.4.2.1 Solid Samples
   No solid samples were collected.

3.34.4.2.2 Water Samples
   No water samples were collected.

3.34.5 Structures
   There are no structures at the site.

3.34.6 Safety

The open adits could be entered, but visitors to the site are unlikely. They are not visible from Trail 113 and are on an extremely steep slope with no (apparent) direct access. The adit shown on the topographic map was not found. Even if it is open, visitors are unlikely.
Figure 3.34-1. Location of the Oregon Group, Idaho County, Idaho (U.S. Geological Survey Heavens Gate 7.5-minute topographic map).
Figure 3.34-2. Distant view of several prospects at the Oregon Group. Two open adits and a prospect are high on the steep slope west of Rapid River, visible as small, light-colored spots on the bare slope to the right of the large tree. Peaks of the Seven Devils Mountains are in the distance (Roll 00K1, frame #24).
3.35 McCREA PROSPECT (Site No. GR-221)
Alternate name—Crown Point Discovery.

Note: According to G. Solberg of the U.S. Forest Service (personal communication), Crown Point Discovery is an alternate name for this site.

3.35.1 Site Location and Access (Figure 2.1-1b)

The McCrea Prospect is on McCrea Creek in the NW¼ of the NE¼ of section 29 (unsurveyed), T. 23 N., R. 1 W., on the Heavens Gate 7.5-minute quadrangle (Figure 3.35-1). Access from the Rapid River Fish Hatchery is on Trail 113 about 3½ miles south to the West Fork of Rapid River, then west on Trail 113 another 3½ miles to the McCrea Place cabin, then northwest about ½ mile on Trail 61 to the prospect. The adit is on the northeast side of McCrea Creek and is on Forest Service land.

3.35.2 Geologic Features (Figure 2.2-1b)

This prospect is in an area underlain by the Permian and Triassic Seven Devils Group (Gaston and Bennett, 1979). The rock on the waste dump appears to be altered volcanic rocks with minor malachite staining on some fragments.

3.35.3 Site History
Nothing is known about the history of this prospect.

3.35.4 Environmental Conditions

3.35.4.1 Site Features

The McCrea Prospect was visited by John Kauffman on May 9, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 2, index 1:48:08-1:53:20). Documenting photographs are Roll 00K1, frames 25-26, and Roll 00K2, frames 1-5.

The prospect consists of a nearly caved, dry adit and a small waste dump just above the trail on the northeast side of the creek. A pile of sloughed rock debris is in front of the opening, which measures 1 foot high by 2 feet wide (Figures 3.35-2 and 3.35-3). The waste dump is 30 feet long, 12 feet wide, and about 30 feet down the face (Figures 3.35-4 and 3.35-5). The thickness on the slope is about 10 feet. A minor amount of scrap metal, including an old shovel, a bucket, and a wash tub, are on the dump. The disturbed area covers less than 0.25 acre.

3.35.4.2 Sample Locations

3.35.4.2.1 Solid Samples
No solid samples were collected.

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### 3.35.4.2.2 Water Samples

No water samples were collected.

### 3.35.5 Structures

Although it was not noticed during the site visit, Gary Solberg, USFS Slate Creek District office, indicated an old cabin site is next to McCrea Creek near the adit. The cabin at the McCrea Place along the main trail (113) is in good condition (Figures 3.35-6 and 3.35-7) and is used by stockmen, packers, and probably by some hikers. It is not known if this cabin is related to the mining activity.

### 3.35.6 Safety

The open adit could be enlarged and entered, and it is not far from Trail 61. Although some visits are likely by backpackers or other long-distance hikers, the site is over 7 miles from the trail head at the Rapid River Fish Hatchery, a factor that should limit the frequency of visits. In addition, the site is not marked as a prospect or mine on the map, so most visits are probably more accidental than planned.
Figure 3.35-1. Location of the McCrea Prospect, Idaho County, Idaho (U.S. Geological Survey Heavens Gate 7.5-minute topographic map).
Figure 3.35-2. Nearly caved adit at the McCrea Prospect, looking northwest (Roll 00K1, frame #25).

Figure 3.35-3. Small opening into the McCrea adit (Roll 00K1, frame #26).
Figure 3.35-4. Looking west along the side of the waste dump for the McCrea adit (Roll 00K2, frame #1).

Figure 3.35-5. Looking down the face of the waste dump for the McCrea adit (Roll 00K2, frame #2).
Figure 3.35-6. Old log cabin at the McCrea Place along Trail 113 (Roll 00K2, frame #3).

Figure 3.35-7. View inside the McCrea cabin, furnished with a wood stove, several metal-frame cots, bedrolls, Coleman lanterns, table, and other miscellaneous items for use by stockmen, packers, or other visitors (Roll 00K2, frame #4).
3.36 BLUE GULCH PROSPECT (Site No. GR-217)

3.36.1 Site Location and Access (Figure 2.1-1b)

The Blue Gulch Prospect is on the north side of Blue Gulch in the southeast corner of section 10 and the southwest corner of section 11 (unsurveyed), T. 23 N., R. 1 W., on the Heavens Gate 7.5-minute quadrangle (Figure 3.36-1). Access from the Rapid River Fish Hatchery is on Trail 113 about ½ mile south to the junction with Trail 55 (labeled 55 here and 65 further to the west on the National Forest map), then west on Trail 55 up the ridge and across Thorn Gulch to the ridge north of Blue Gulch. The trail continues along contour to Blue Gulch, but it is easier to reach the site by walking up the nose of the ridge. The workings are about 2½-3 miles from the junction of Trails 113 and 55, and are at an elevation of about 4,700-5,000 feet. The trail head is at an elevation of about 2,200 feet. The prospect is on Forest Service land.

3.36.2 Geologic Features (Figure 2.2-1b)

This prospect is in an area underlain by the Permian and Triassic Seven Devils Group (Gaston and Bennett, 1979).

3.36.3 Site History

Nothing is known about the history of this prospect.

3.36.4 Environmental Conditions

3.36.4.1 Site Features

The Blue Gulch Prospect was visited by John Kauffman on May 10, 2000. A video segment describing the site is on Nez Perce National Forest Florence and Rapid River Areas Videotape (Tape 2, index 1:53:22-1:58:25). Documenting photographs are Roll 00K2, frames 6-10.

Two adit symbols are shown on the topographic map, but only one adit, at the site marked by lower of the two symbols, was found. No evidence of an adit was found at the location indicated by the upper symbol (Figure 3.36-2). The slope here is open and covered with grass and sagebrush, so any significant workings should have been obvious. The adit is at an elevation of about 4,700 feet, and it is completely caved and dry (Figure 3.36-3). The waste dump is 20 feet long, 15 feet wide, and 30 feet down the face; thickness on the slope is 10-15 feet (Figures 3.36-4 and 3.36-5). A short distance southwest of the adit is a small pit cut into an outcrop. Another shallow prospect pit, 6 feet in diameter and 4-5 feet deep (Figure 3.36-6), was found at an elevation of 5,000 feet on the south side of a bench along the ridge above the adit. The disturbed area covers less than 0.25 acre.
3.36.4.2 Sample Locations

3.36.4.2.1 Solid Samples
No solid samples were collected.

3.36.4.2.2 Water Samples
No water samples were collected.

3.36.5 Structures
No structures were found at the site.

3.36.6 Safety
There are no safety hazards at the site.
Figure 3.36-1. Location of the Blue Gulch Prospect, Idaho County, Idaho (U.S. Geological Survey Heavens Gate 7.5-minute topographic map).
Figure 3.36-2. Sketch of the Blue Gulch Prospect.
Figure 3.36-3. Shallow trough of the caved adit at the Blue Gulch Prospect, looking northwest (Roll 00K2, frame #8).
Figure 3.36-4. View to the southeast down the face of the waste dump for the adit at the Blue Gulch Prospect. Blue Gulch is at the base of the open slope (Roll 00K2, frame #9).

Figure 3.36-5. Looking southwest at the waste dump for the adit at the Blue Gulch Prospect. The maximum thickness is about 15 feet (Roll 00K2, frame #10).
Figure 3.36-6. Shallow prospect pit at the Blue Gulch Prospect. The white dots in this and the preceding pictures are snowflakes (Roll 00K2, frame #6).
3.37 ASBESTOS PEAK PROSPECT (Site No. K7270001)

3.37.1 Site Location and Access (Figure 2.1-1a)

This prospect is on Asbestos Peak in the SE¼ of the SE¼ of section 26, and the N½ of the NE¼ of section 35, T. 28 N., R. 3 E., on the Dairy Mtn. 7.5-minute quadrangle (Figure 3.37-1). From Grangeville, access is on FS Road 221 south about 23 miles to the Four Corners junction at Cold Spring Saddle, then west on FS Road 243 about ½ mile to FS Road 243B (a jeep road). Road 243B follows the ridge northeast to Asbestos Peak. Several prospects are at the end of the road, and minor pits are along the road southwest of the peak; all are on Forest Service land.

3.37.2 Geologic Features (Figure 2.2-1a)

This site is in rocks of the Permian and Triassic Seven Devils Group (Gaston and Bennett, 1979). The prospects are along a zone of talc-like fibrous metamorphic rocks, possibly anthophyllite. This zone forms outcrops of large, rounded masses along the ridge top. Fragments of pegmatite intrusions were noted along the jeep road to the southwest.

3.37.3 Site History

Nothing is known of the history of this site.

3.37.4 Environmental Conditions

3.37.4.1 Site Features

The Asbestos Peak Prospect was visited by John Kauffman on July 27, 2000. A video segment describing the site is on Nez Perce National Forest Videotape (Tape 2, index 1:58:27-2:01:35). Documenting photos are Roll 00K13, frames 5-6.

This prospect consists of several bulldozer cuts and prospect pits on Asbestos Peak and the ridge extending to the southwest. No underground workings were found. The main cuts are shown by prospect symbols on top of Asbestos Peak on the topographic map. The deepest cut, on the north end of the peak, has a headwall about 10 feet high (Figure 3.37-2). Several shallow pits and trenches are in the trees to the north of this cut. Another trench is on the south side of the peak. In addition, there are two shallow pits about ¼ mile to the southwest along the jeep road (Figure 3.37-3). The disturbed area covers less than 1 acre.

Three prospect symbols are shown on the topographic map ½ to ¾ mile to the southwest of the peak along the top of the ridge. The jeep road follows this ridge top, but none of the three prospect were found.

3.37.4.2 Sample Locations

3.37.4.2.1 Solid Samples

No solid samples were collected.
3.37.4.2.2 Water Samples
   No water samples were collected.

3.37.5 Structures
   There are no structures at the site.

3.37.6 Safety
   There are no safety hazards at the site.
Figure 3.37-1. Location of the Asbestos Peak Prospect, Idaho County, Idaho (U.S. Geological Survey Dairy Mtn. 7.5-minute topographic map).
Figure 3.37-2. Trench on the north end of Asbestos Peak. The headwall of the pit (in the shadows to the left) is about 10 feet high (Roll 00K13, frame #5).

Figure 3.37-3. One of two shallow pits along the jeep road southwest of Asbestos Peak (Roll 00K13, frame #6).
REFERENCES


Appendix A
Field Questionnaire
PART A  
(To be completed for all identified sites)

LOCATION AND IDENTIFICATION

ID# ___________ Site Name(s) ________________________________
FS Tract #____________________ FS Watershed Code ______________________
Forest ______________________ District _____________________________
Location based on: GPS ____ Field Map ____ Existing Info ____ Other ____
Lat ______ Long _______ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
Quad Name __________________________ Principal Meridian __________
 Township ______ Range _______ Section ___ 1/4 ___ 1/4 ___ 1/4 ___ 1/4
State ______ County ____________ Mining District ______________________

Ownership of all disturbances:
- ____ National Forest (NF)
- ____ Mixed private and National Forest (or unknown)
- ____ Private.

If private only, impacts from the site on National Forest Resources are
- _____ Visually apparent ____ Likely to be significant ____ Unlikely or minimal

If all disturbances are private and impacts to National Forest Resources are unlikely or minimal - STOP

PART B  
(To be completed for all sites on or likely effecting National Forest lands)

SCREENING CRITERIA

Yes No

- _____ 1. Mill site or Tailings present
- _____ 2. Adits with discharge or evidence of a discharge
- _____ 3. Evidence of or strong likelihood for metal leaching, or AMD (water stains, stressed or lack of vegetation, waste below water table, etc.)
- _____ 4. Mine waste in floodplain or shows signs of water erosion
- _____ 5. Residences, high public use area, or environmentally sensitive area (as listed in HRS) within 200 feet of disturbance
- _____ 6. Hazardous wastes/materials (chemical containers, explosives, etc)
- _____ 7. Open adits/shafts, highwalls, or hazardous structures/debris
- _____ 8. Site visit (If yes, take picture of site), Film number(s)
  
  If yes, provide name of person who visited site and date of visit
  Name: ___________________________ Date: ______________________

  If no, list source(s) of information (If based on personal knowledge, provide name of person interviewed and date):

If the answers to questions 1 through 6 are all No - STOP
PART C
(To be completed for all sites not screened out in Parts A or B)

Investigator _______________________________ Date __________
Weather ________________________________

1. GENERAL SITE INFORMATION

Take panoramic picture(s) of site, Film Number(s) ____________________________
Size of disturbed area(s) ______ acres Average Elevation ______ feet
Access: ___ No trail ___ Trail ___ 4wd only ___ Improved road
___ Paved road
Name of nearest town (by road): ________________________________
Site/Local Terrain: ___ Rolling or flat ___ Foothills ___ Mesa ___ Mountains
___ Steep/narrow canyon
Local undisturbed vegetation (Check all that apply): ___ Barren or sparsely vegetated
____ weeds/grasses ____ Brush ____ Riparianmarsh
____ Deciduous trees ____ Pine/spruce/fir
Nearest wetland/bog: ___ On site, ___ 0-200 feet, ___ 200 feet-2 miles, ___ > 2 miles
Acid Producers or Indicator Minerals: ___ Arsenopyrite, ___ Chalcocpyrite, ___ Galena,
___ Iron Oxide, ___ Limonite, ___ Marcasite, ___ Pyrite, ___
Pyrrhotite, ___ Sphalerite, ___ Other Sulfide
Neutralizing Host Rock: ___ Dolomite, ___ Limestone, ___ Marble, ___ Other Carbonate

2. OPERATIONAL HISTORY

Dates of significant mining activity ______________

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Years that Mill Operated
Mill Process: ___ Amalagamtion, ___ Arrastre, ____ CIP (Carbon-in-Pulp), ___ Crusher only,
___ Cyanidation, ____ Flotation, ___ Gravity, ___ Heap Leach, ___ Jig Plant, ___ Leach,
___ Retort, ___ Stamp, ___ No Mill, ___ Unknown

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<th>Commodity(s)</th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Production (ounces)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3. HYDROLOGY

Name of nearest Stream __________________________ which flows into ________________
Springs (in and around mine site): ____ Numerous ____ Several ____ None
Depth to Groundwater ___ ft, Measured at: ___ shaft/pit/hole ___ well ___ wetland
Any waste(s) in contact with active stream ___ Yes ___ No

4. TARGETS (Answer the following based on general observations only)

Surface Water
Nearest surface water intake ___ miles, Probable use __________________________
Describe number and uses of surface water intakes observed for 15 miles downstream
of site: ______________________________________________________________________
____________________________________________________________________________

Wells
Nearest well ___ miles, Probable use __________________________
Describe number and use of wells observed within 4 miles of site: ______________________________________________________________________
____________________________________________________________________________

Population
Nearest dwelling ___ miles, Number of months/year occupied ______ months
Estimate number of houses within 2 miles of the site (Provide estimates for 0-200ft,
200ft-1mile, 1-2miles, if possible) ______________________________________________________________________
____________________________________________________________________________

Recreational Usage
Recreational use on site: ____ High (Visitors observed or evidence such as tire tracks,
trash, graffiti, fire rings, etc.; and good access to site), ____ Moderate (Some evidence
of visitors and site is accessible from a poor road or trail), ____ Low (Little, if any,
evidence of visitors and site is not easily accessible)
Nearest recreational area ___ miles, Name or type of area: __________________________

5. SAFETY RISKS

____ Open adit/shaft, ____ Highwall or unstable slopes, ____ Unstable structures,
____ Chemicals, ____ Solid waste including sharp rusted items, ____ Explosives
6. MINE OPENINGS

Include in the following chart all mine openings located on or partially on National Forest lands. Also, include mine openings located entirely on private land if a point discharge from the opening crosses onto National Forest land. In this case, enter data for the point at which the discharge flows onto National Forest land; you do not need to enter information about the opening itself.

TABLE 1 - ADITS, SHAFTS, PITS, AND OTHER OPENINGS

<table>
<thead>
<tr>
<th>Opening Number</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Opening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ownership</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opening Length (ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opening Width (ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latitude (GPS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longitude (GPS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Sample #</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photo Number</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments (When commenting on a specific mine opening, reference opening number used in Table 1):

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Codes Applicable for all entries: NA= Not applicable, UNK=Unknown, OTHER=Explain in comments, NO=NO or none
Type of opening: ADIT=Adit, SHAFT=Shaft, Pit=Open Pit/Trench, HOLE=Prospect Hole, WELL=Well
Ownership: NF=National Forest, MIX=National Forest and Private (Also, for unknown), PRV=Private
Condition (Enter all that apply): INTACT=Intact, PART=Partially collapsed or filled, COLP=Filled or collapses, SEAL=Adit plug, GATE=Gated barrier,
Ground water (Water or evidence of water discharging from opening): NO= No water or indicators of water, FLOW=Water flowing, INTER=Indicators of intermittent flow, STAND= Standing water only (In this case, enter an estimate of depth below grade)
7. MINE/MILL WASTE

Include in the following chart all mine/mill wastes located on or partially on National Forest lands. Also, include mine/mill wastes located entirely on private land if it is visually affecting or is very likely to be affecting National Forest resources. In this case enter data for the point at which a discharge from the waste flows onto National Forest land, or where wastes have migrated onto National forest land; only enter as much Information about the waste as relevant and practicable.

**TABLE 2 - DUMPS, TAILINGS, AND SPOIL PILES**

<table>
<thead>
<tr>
<th>Waste Number</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Type</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Ownership</td>
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<td></td>
</tr>
<tr>
<td>Area (acres)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Volume (cu yds)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size of Material</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wind Erosion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface Drainage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicators of Metals</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stability</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Location with respect to Floodplain</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Distance to Stream</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Water Sample #</td>
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<td></td>
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<tr>
<td>Waste Sample #</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil Sample #</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photo Number</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**Codes Applicable for all entries:** NA= Not applicable, UNK=Unknown, OTHER= Explain in comments, NO=NO or none

**Waste Type:** WASTE=Waste rock dump, MILL=Mill tailings SPOIL=Overburden or spoil pile, HIGH=Highwall, PLACER=Placer or hydraulic deposit, POND=Settling pond or lagoon, ORE=Ore Stockpile, HEAP=Heap Leach

**Ownership:** NF=National Forest, MIX=National Forest and Private (Also, for unknown), PRV=Private

**Size of Material (if composed of different size fractions, enter the sizes that are present in significant amounts):** FINE=Finer than sand, SAND=sand, GRAVEL=>sand and <2", COBBLE=2"-6", BOULD=>6"

**Wind Erosion:** Potential for: HIGH=Fine, dry material that could easily become airborne, airborne dust, or windblown deposits, MOD=Moderate, Some fine material, or fine material that is usually wet or partially cemented; LOW=Little it any fines, or fines that are wet year-round or well cemented.

**Vegetation (density on waste):** DENSE=Ground cover > 75%, MOD=Ground cover 25% - 75%, SPARSE=Ground cover < 25%, BARREN=Barren

**Surface Drainage (Include all that apply):** RILL=Surface flow channels mostly < 1' deep, GULLY=Flow channels >1' deep, SEEP=Intermittent or continuous discharge from waste deposit, POND=Seasonal or permanent ponds on feature, BREACH=Breached, NO=No indicators of surface flow observe

**Indicators of Metals (Enter as many as exist):** NO=Non, VEG=Absence of or stressed vegetation, STAIN=yellow, orange, or red precipitate, SALT=Salt deposits, SULF=Sulfides present

**Stability:** EMER=imminent mass failure, LIKE=Potential for mass failure, LOW=mass failure unlikely

**Location with respect to Stream:** IN=In contact with normal stream, NEAR=In riparian zone or floodplain, OUT=Out of floodplain
8. SAMPLES

Take samples only on National Forest lands.

<table>
<thead>
<tr>
<th>TABLE 3 - WATER SAMPLES FROM MINE SITE DISCHARGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Number</td>
</tr>
<tr>
<td>Indicators of Metal Release</td>
</tr>
<tr>
<td>Field pH</td>
</tr>
</tbody>
</table>

Comments: (When commenting on a specific water sample, reference sample number used in Table 3):

Codes Applicable for all entries: NA= Not applicable, UNK=Unknown, OTHER=Explain in comments, NO=NO or none

Discharging From: ADIT=Adit, SHAFT=Shaft, PIT=Pit/Trench, HOLE=Prospect Hole, WASTE=Waste rock dump, MILL=Mill tailings, SPOIL=Overburden or spoil pile, HIGH=Highwall, PLACER=Placer or hydraulic deposit, POND=Settling pond or lagoon, WELL=Well

Feature Number: Corresponding number from Table 1 or Table 2 (Opening Number or Waste Number)

Indicators of Metal Release (Enter as many as exist): NO=None, YEG=Absence of, or stressed vegetation/organisms in and along drainage path, STAIN=yellow, orange, or red precipitate, SALT=Salt deposits, SUU=Sulfides present, TURB=Discolored or turbid discharge

Indicators of Sedimentation (enter as many as exist): NO=None, SLIGHT=Some sedimentation in channel, banks and channel largely intact, MOD=Sediment deposits in channel, affecting flow patterns, banks largely intact, SIGN=Sediment deposits in channel and/or along stream banks extending to nearest stream

Method of Measurement: EST=Estimate, BUCK=Bucket and time, METER=Flow meter
<table>
<thead>
<tr>
<th>Location relative to mine site/features</th>
<th>Upstream (Background)</th>
<th>Downstream</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date sample taken</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sampler (Initials)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stream Name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicators of Metal Release</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicators of Sedimentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Latitude</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Longitude</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field pH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field SC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow (gpm)Method of measurement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Method of measurement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photo Number</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments: (When commenting on a specific water sample, reference sample number used in Table 4):

Codes Applicable for all entries: NA= Not applicable, UNK=Unknown, OTHER=Explain in comments, NO=NO or none

Indicators of Metal Release (*Enter as many as exist*): NO=None, VEG=Absence of, or stressed streamside vegetation/organisms in and along drainage path, STAIN=yellow, orange, or red precipitate, SALT=Salt deposits, SULF=Sulfides present, TURB=Discolored or turbid discharge

Indicators of Sedimentation (*Enter as many as exist*): NO=None, SLIGHT=Some sedimentation in channel, natural banks and channel largely intact, MOD=Sediment deposits in channel, affecting stream flow patterns, natural banks largely intact, SIGN=Sediment deposits in channel and/or along stream banks extending 1/2 a mile or more downstream

Method of Measurement: EST=Estimate, BUCK=Bucket and time, METER=Flow meter
<table>
<thead>
<tr>
<th>Sample Number</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of sample</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sampler (Initials)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste Type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feature Number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Latitude</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Longitude</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photo Number</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments: *(When commenting on a specific waste or soil sample, reference sample number used in Table 5):*

**Codes Applicable for all entries:** NA=Not applicable, UNK=Unknown, OTHER=Explain in comments, NO=NO or none
**Sample Type:** SING=Single sample, COMP=composite sample (enter length)
**Waste Type:** WASTE=Waste rock dump, MILL=Mill tailings, SPOIL=Overburden or spoil pile, HIGH=Highwall, PLACER=Placer or hydraulic deposit, POND=Settling pond or lagoon sludge, ORE=Ore Stockpile, HEAP=Heap Leach
**Feature Number:** Corresponding number from Table 2 *(Waste Number)*
<table>
<thead>
<tr>
<th>TABLE 6 - SOIL SAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Number</td>
</tr>
<tr>
<td>Date of sample</td>
</tr>
<tr>
<td>Sampler (Initials)</td>
</tr>
<tr>
<td>Sample Type</td>
</tr>
<tr>
<td>Sample Latitude</td>
</tr>
<tr>
<td>Sample Longitude</td>
</tr>
<tr>
<td>Likely Source of Contamination</td>
</tr>
<tr>
<td>Feature Number</td>
</tr>
<tr>
<td>Indicators of Contamination</td>
</tr>
<tr>
<td>Photo Number</td>
</tr>
</tbody>
</table>

Comments: *(When commenting on a specific waste or soil sample, reference sample number used in Table 6):*

---

*Codes Applicable for all entries: NA= Not applicable, UNK=Unknown, OTHER=Explain in comments, NO=NO or none*

**Sample Type**: SING=Single sample, COMP=composite sample (enter length)

**Likely Source of Contamination**: ADIT=Adit, SHAFT=Shaft, PIT=Open Pit, HOLE=Prospect Hole, WASTE=Waste rock dump, MILL=Mill tailings, SPOIL=Overburden or spoil pile, PLACER=Placer or hydraulic deposit, POND=Settling pond or lagoon, ORE=Ore Stockpile, HEAP=Heap Leach

**Feature Number**: Corresponding number from Table 1 or 2 (Opening or Waste Number)

**Indicators of Contamination (Enter as many as exist)**: NO=None, VEG=Absence of vegetation, PATH=Visible sediment path, COLOR=Different color of soil than surrounding soil, SALT=Salt crystals
9. HAZARDOUS WASTES/MATERIALS

TABLE 7 - HAZARDOUS WASTES/MATERIALS

<table>
<thead>
<tr>
<th>Waste Number</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Containment</td>
<td></td>
</tr>
<tr>
<td>Condition of Containment</td>
<td></td>
</tr>
<tr>
<td>Contents</td>
<td></td>
</tr>
<tr>
<td>Estimated Quantity of Waste</td>
<td></td>
</tr>
</tbody>
</table>

Comments: (When commenting on a specific hazardous waste or site condition, reference waste number used in Table 7):

Codes Applicable for all entries: NA = Not applicable, UNK = Unknown, OTHER = Explain in comments, NO = NO or none
Type of Containment: NO = None, LID = drum/barrel/vat with lid, AIR = drum/barrel/vat without lid, CAN = cans/jars, LINE = lined impoundment, EARTH = unlined impoundment
Condition of Containment: GOOD = Container in good condition, leaks unlikely, FAIR = Container has some signs of rust, cracks, damage but looks sound, leaks possible, POOR = Container has visible holes, cracks or damage, leaks likely, BAD = Pieces of containers on site, could not contain waste
Contents: from label if available, or guess the type of waste, e.g., petroleum product, solvent, processing chemical
Estimated Quantity of Waste: Quantity still contained and quantity released
10. STRUCTURES

For structures on or partially on National forest lands.

<table>
<thead>
<tr>
<th>Type</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photo Number</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments:

Codes Applicable for all entries: NA=Not applicable, UNK=Unknown, OTHER=Explain in comments, NO=NO or none
Type: CABIN=Cabin or community service (store, church, etc.), MILL=mill building, MINE=building related to mine operation, STOR=storage shed, FLUME=Ore Chute/flume or tracks for ore transport
Number: Number of particular type of structure all in similar condition or length in feet
Condition: GOOD=all components of structure intact and appears stable, FAIR=most components present but signs of deterioration, POOR=major component (roof, wall, etc) of structure has collapsed or is on the verge of collapsing, BAD=more than half of the structure has collapsed

11. MISCELLANEOUS

Are any of the following present? (Check all that apply): ___ Acrid Odor, ___ Drums, ___ Pipe, ___ Poles, ___ Scrap Metal, ___ Overhead wires, ___ Overhead cables, ___ Headframes, ___ Wooden Structures, ___ Towers, ___ Power Substations, ___ Antennae, ___ Trestles, ___ Powerlines, ___ Transformers, ___ Tramways, ___ Flumes, ___ Tram Buckets, ___ Fences, ___ Machinery, ___ Garbage

Describe any obvious removal actions that are needed at this site:

__________________________________________________________

General Comments/Observations (not otherwise covered)

__________________________________________________________

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12. SITE MAP

Prepare a sketch of the site. Indicate all pertinent features of the site and nearby environment. Include all significant mine and surface water features, access roads, structures, etc. Number each important feature at the mine site and use these number throughout this form when referring to a particular feature (Tables 1 and 2). Sketch the drainage routes off the site into the nearest stream.
13. RECORDED INFORMATION

Owner(s) of patented land
Name: ______________________________________________________
Address: ___________________________________________________
Telephone Number: ___________________________________________

Claimant(s)
Name: ______________________________________________________
Address: ___________________________________________________
Telephone Number: ___________________________________________

Surface Water (From water rights)
Number of Surface Water Intakes within 15 miles downstream of site used for:
   ____ Domestic, ____ Municipal, ____ Irrigation, ____ Stock,
   ____ Commercial/Industrial, ____ Fish Pond, ____ Mining,
   ____ Recreation, ____ Other

Wells (From well logs)
Nearest well ____ miles
Number of wells within ____ 0-1/4 miles ____ 1/4-1/2 miles, ____ 1/2-1 mile
   ____ 1-2 miles ____ 2-3 miles ____ 3-4 miles of site

Sensitive Environments
List any sensitive environments (as listed in the HRS) within 2 miles of the site or along receiving stream
for 15 miles downstream of site (wetlands, wilderness, national/state park, wildlife refuge, wild and
scenic river, T&E or T&E habitat, etc):
   ______________________________________________________
   ______________________________________________________

Population (From census data)
Population within ____ 0-1/4 miles ____ 1/4-1/2 miles ____ 1/2-1 mile
   ____ 1-2 miles ____ 2-3 miles ____ 3-4 miles of site

Public Interest
Level of Public Interest: ____ Low, ____ Medium, ____ High
Is the site under regulatory or legal action? ____ Yes, ____ No

Other sources of information (MILs #, MRDS #, other sampling data, etc):
   ______________________________________________________
   ______________________________________________________
NEWLOC        WA  1
ORANGENUM     451
MAPLOC        1
DEPOSIT       Eagle Creek Mine
MRDSREC       
MILSREF       0160790528
PERIODPROD    
ORE
COMMOD       Au
LATITUDE      474325
LONGITUDE     1154916
HARDFILE      N
MLA
NAME          EAGLE CREEK MINE
SEC           33
SUBSEC        NESE
TWN           051 N
RNG           005 E
DDMMSS        474325
DDDDMSS       1154904
OPTYP         SURFAC
STATUS        PAST PRO
COMMO1        GOLD
COMMO2        
COMMO3        
COMMO4        
COMMO5        
MAPNAME       BURKE
QUAD          WALLACE
POP           1KM
TOE           M
YFC           
MPF           
SITENAME      
DISTRICT      
COUNTY        
SECUAD        
SECUADSCL     
UTMNORTH      
UTMEAST       
UTMZONE       
COMMODIT      
LAT           
LON           
TOWN          
SECTION      
RANGE
Appendix C
Geochemical Data
GEOCHEMICAL DATA

ACCURACY OF GEOCHEMICAL DATA

The following information was received on the subject of the accuracy and the detection limits for the geochemical data presented in this report:

Date: Fri, 24 Oct 1997 10:48:23 PST8PDT
From: Kim Anderson <kanderson@asl.fs.uidaho.edu>
To: Ruth E Vance <rvance@uidaho.edu>
Subject: Re: detection limit accuracy

That is something I put together some years ago for another client. Also Greg Moller [Technical Director, Analytical Sciences Laboratory] had input. Other than that, the refs are included in the discussions I sent [discussion titled “Practical Quantitation Limits”; see next page].

Good Luck
Kim,

Kim A. Anderson, Ph.D.
Asst. Prof. / Food Science and Toxicology Dept.
Chief Chemist / Analytical Sciences Laboratory
University of Idaho
Moscow, Idaho 83844-2201
208-885-7900/FAX 209-885-8937
Practical Quantitation Limits

Sensitivity of an analytical method is often based on its ability to reproducibly detect target analytes above the method noise level. Several similar definitions of this Minimum Detection Level or Limit (MDL) or Limit of Detection (LOD) are currently used. According to the American Chemical Society (ACS) (Principles of Environmental Analysis, p 9):

Limit of detection (LOD) "is defined as the lowest concentration level that can be determined as statistically different from the blank".

Instrument detection limit (IDL) "is the smallest signal above background noise that an instrument can detect reliably and is often equivalent to the LOD".

Method detection limit (MDL) "is the lowest concentration of analyte that can that a method can detect reliably in either a sample or a blank".

ACS recommends the value of LOD to be 3σ for a 99% confidence level, where σ is the standard deviation of the measurement.

Limit of Quantitation (LOQ) "is defined as the level above which quantitative results may be obtained with a specified degree of confidence".

ACS recommends an LOQ of 10σ and this imparts a quantitative measurement uncertainty of +/-30% in the measured value at this 99% confidence level. ACS contends "quantitative interpretation, decision-making and regulatory actions should be limited to data at or above the limit of quantitation". In particular, ACS states: "Analytical chemists must always emphasize to the public that the single most important characteristic of any result obtained from one or more analytical measurements is an adequate statement of its uncertainty level. Lawyers usually attempt to dispense with uncertainty and try to obtain unequivocal statements; therefore, an uncertainty interval must be clearly defined in cases involving litigation and/or enforcement proceedings. Otherwise, a value of 1.001 without a specified uncertainty, for example, may be viewed as legally exceeding a permissible level of 1."

EPA Methods used for regulatory enforcement use the same definition of MDL. "The method detection limit is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the value is above zero". Since performance of analytical methodology and therefore detection limits vary significantly with non-controllable laboratory to laboratory variables such as the exact type of analytical instrumentation, EPA promulgates the concept of Practical Quantitation Limits (PQL). A PQL is equal to the MDL multiplied by a factor of ten or greater and are published as a general guide to laboratory method performance. The factors can range from ten to ten thousand depending on sample matrix and are intended to allow the laboratory the flexibility to determine the relative performance of an analytical method in a more complex sample matrix. In confirmation of laboratory variability, EPA methods as well as other
published analytical methods often estimate detection limits and quantitation limits using a bench-level expert, performance estimate.

Recognition of the 'average performance' nature of the PQL guidelines, EPA states that PQL's "are the lowest concentrations of analytes in (samples) that can be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions. The PQL's listed are generally stated to one significant figure. CAUTION: The PQL values in many cases are based only on a general estimate for the method and not on a determination for the individual compounds; PQL's are not a part of the regulation (40 CFR Part 264 Appendix IX, Footnote 6)."
SEE

FOLDER:

Geochem_data

For data
Appendix D
Field Forms for Properties in the Study Area
SEE

FOLDER:

Field_forms

For data
Appendix E
Reports Completed for U.S. Forest Service, Region 1, Field Inspection Program
1997 Reports


1998 Reports


1999 Reports


Kauffman, John, E.H. Bennett, and V.E. Mitchell, 1999, Site inspection report for the abandoned and inactive mines in Idaho on U.S. Forest Service lands (Region 1), Idaho Panhandle National Forest: Volume V (Section A): Coeur d'Alene River drainage surrounding the Coeur...
d’Alene mining district (excluding the Prichard Creek and Eagle Creek drainages) [secondary properties]: Idaho Geological Survey unpublished report, 250 p., 1 videotape.

Kauffman, John, E.H. Bennett, and V.E. Mitchell, 1999, Site inspection report for the abandoned and inactive mines in Idaho on U.S. Forest Service lands (Region 1), Idaho Panhandle National Forest: Volume V (Section B): Coeur d’Alene River drainage surrounding the Coeur d’Alene mining district (excluding the Prichard Creek and Eagle Creek drainages) [secondary properties]: Idaho Geological Survey unpublished report, 211 p., 1 videotape.

Kauffman, John, E.H. Bennett, and V.E. Mitchell, 1999, Site inspection report for the abandoned and inactive mines in Idaho on U.S. Forest Service lands (Region 1), Idaho Panhandle National Forest: Volume V (Section C): Coeur d’Alene River drainage surrounding the Coeur d’Alene mining district (excluding the Prichard Creek and Eagle Creek drainages) [secondary properties]: Idaho Geological Survey unpublished report, 225 p., 1 videotape.

Kauffman, John, E.H. Bennett, and V.E. Mitchell, 1999, Site inspection report for the abandoned and inactive mines in Idaho on U.S. Forest Service lands (Region 1), Idaho Panhandle National Forest: Volume V (Section D): Coeur d’Alene River drainage surrounding the Coeur d’Alene mining district (excluding the Prichard Creek and Eagle Creek drainages) [secondary properties]: Idaho Geological Survey unpublished report, 276 p., 1 videotape.


2000 Reports


*The properties for the Clearwater National Forest are covered in five videotapes. The first two tapes contain the properties in Volume I, Section A. The properties for Volume I, Section B, and Volume II are split between the last three tapes.

2001 Reports

Kauffman, John, E.H. Bennett, and V.E. Mitchell, 2001, Site inspection report for the abandoned and inactive mines in Idaho on U.S. Forest Service lands (Region 1), Nez Perce National Forest: