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

John Kauffman
Earl H. Bennett
Victoria E. Mitchell
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Field Inspection conducted by Earl Bennett, John Kauffman, and William Remбер
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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 could impact National 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 forest inventoried was the Panhandle National Forest. Volume III and Volume V (Sections A through D) present the results of the work done in the Coeur d'Alene River basin, excluding properties in the Prichard-Eagle Creek drainage (which are covered in Volumes I and IV). 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.

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 National 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 National 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 (FeS$_2$) and pyrrhotite (Fe$_{1-x}$S). Other sulfides play a minor role in acid generation. Oxidation of iron sulfides forms sulfuric acid (H$_2$SO$_4$), sulfate ions (SO$_4^{2-}$), and reduced iron (Fe$^{2+}$). 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 ferrooxidans*). The oxidized iron produced by biological activity promotes further oxidation and dissolution of pyrite, pyrrhotite, and marcasite (FeS$_2$, 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, CuFeS$_2$; galena, PbS; tetrahedrite, (CuFe)$_{12}$Sb$_6$S$_{15}$; 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 [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 [KAl₃(SO₄)₂(OH)₃] and jarosite [KFe₃(SO₄)₂(OH)₆] will precipitate at a pH of less than 4, depending on SO₄²⁻ and 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 [MnO₂] dissolves and manganite [MnO(OH)] precipitates. Manganese is found in mineralized environments as rhodochrosite [MnCO₃] and its weathering products.

**Aluminum** solubility is most often controlled by alunite [KAl₃(SO₄)₂(OH)₃] or by gibbsite [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, H₂AsO₄. Arsenic is abundant in metallic mineral deposits as arsenopyrite [FeAsS], enargite [Cu₃AsS₄], tennantite [Cu₁₂As₄S₁₃], 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 [CdCO₃]; when the pH of the soil is below 6, cadmium solubility is controlled by strengite [Cd₄(PO₄)₂]. Octavite is the dominant control on the solubility of cadmium in soils. In water, at low partial pressures of H₂S, CdCO₃ is easily reduced to CdS.

**Copper** solubility in natural waters is controlled primarily by the amount of carbonate present; malachite [Cu₂(OH)₂CO₃] and azurite [Cu₃(OH)₂(CO₃)₂] form when CO₃²⁻ 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 [Cu₂S], bornite [Cu₃FeS₄], chalcosite [Cu₂S], and tetrahedrite [Cu₁₂Sb₄S₁₃].
Mercury readily vaporizes under atmospheric conditions and thus is most often found in concentrations well below the 25 \( \mu g/L \) 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 \( \mu g/L \) 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 \( \mu g/L \). 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. all 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>
<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, and Mine Waste Sampling Procedures

At sites identified as having a potential problem, the geologist collected soil, rock, 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, 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 value and 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, background water-quality data at a particular mine site was restricted to upstream surface water samples. However, in some drainages background samples were collected at sites with no visible contamination and no known mining activity upstream from the sampling location. Background 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 200.9), Lead (EPA Test 200.9), and Mercury (EPA Test 245.1).  
Water Samples (raw and filtered 0.45 micron filter)—Dissolved Metal Screen (EPA Test 200.7).  
Soil and Waste Material—Element Screen (EPA Test 3050/6010).  
Leachable Metals, TCLP—Metal 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 can be made from the analyses presented by Gott and Cathrali (1980). They analyzed both rock samples from the parent formation and soil samples from above the parent material. The median results from these analyses are presented in Tables 1.5-3 and 1.5-4, which show data for the Prichard, Burke, Revett, St. Regis, and Wallace Formations. These samples were analyzed by emission spectrophotometry, a much less accurate technique than we use today. However, due to the large number of analyses, the data is still useful, especially for estimating background values. For example, an average sample of soil above the Prichard Formation might contain 54 ppm (mg/Kg) lead, 140 ppm (mg/Kg) zinc, 21 ppm (mg/Kg) copper, 0.13 ppm (mg/Kg) mercury, and 10 ppm (mg/Kg) arsenic. These data were used by the Environmental Protection Agency as background data for their studies of the Bunker Hill Superfund Site (Nick Ceto, 1997, personal communication).

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
Table 1.5-3. Median values of metals in rock samples from various units of the Belt Supergroup (data from Gott and Cathrall, 1980; ppm = mg/Kg).

<table>
<thead>
<tr>
<th>Element</th>
<th>Prichard Formation</th>
<th>Burke Formation</th>
<th>Revett Formation</th>
<th>St. Regis Formation</th>
<th>Wallace Formation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron (percent)</td>
<td>3</td>
<td>1.8</td>
<td>1.4</td>
<td>2.4</td>
<td>2.4</td>
</tr>
<tr>
<td>Magnesium (percent)</td>
<td>0.4</td>
<td>0.1</td>
<td>0.05</td>
<td>0.19</td>
<td>0.48</td>
</tr>
<tr>
<td>Calcium (percent)</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>0.05</td>
</tr>
<tr>
<td>Titanium (percent)</td>
<td>0.3</td>
<td>0.19</td>
<td>0.13</td>
<td>0.19</td>
<td>0.21</td>
</tr>
<tr>
<td>Manganese (ppm)</td>
<td>224</td>
<td>386</td>
<td>381</td>
<td>600</td>
<td>360</td>
</tr>
<tr>
<td>Barium (ppm)</td>
<td>343</td>
<td>360</td>
<td>235</td>
<td>543</td>
<td>378</td>
</tr>
<tr>
<td>Beryllium (ppm)</td>
<td>1.3</td>
<td>---</td>
<td>---</td>
<td>0.9</td>
<td>0.89</td>
</tr>
<tr>
<td>Cobalt (ppm)</td>
<td>5</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>3.9</td>
</tr>
<tr>
<td>Chromium (ppm)</td>
<td>40</td>
<td>13</td>
<td>8.3</td>
<td>20</td>
<td>23.8</td>
</tr>
<tr>
<td>Molybdenum (ppm)</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Nickel (ppm)</td>
<td>10</td>
<td>5.5</td>
<td>4.2</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Strontium (ppm)</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Vanadium (ppm)</td>
<td>54</td>
<td>26</td>
<td>20</td>
<td>30</td>
<td>36</td>
</tr>
<tr>
<td>Sulfur (percent)</td>
<td>.01</td>
<td>0.007</td>
<td>0.006</td>
<td>0.007</td>
<td>0.009</td>
</tr>
<tr>
<td>Mercury (ppm)</td>
<td>.03</td>
<td>---</td>
<td>0.03</td>
<td>0.03</td>
<td>0.04</td>
</tr>
<tr>
<td>Copper (ppm)</td>
<td>22</td>
<td>6.2</td>
<td>8</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>Lead (ppm)</td>
<td>34</td>
<td>14</td>
<td>10</td>
<td>11</td>
<td>23</td>
</tr>
<tr>
<td>Zinc (ppm)</td>
<td>60</td>
<td>31</td>
<td>15</td>
<td>20</td>
<td>41</td>
</tr>
<tr>
<td>Silver (ppm)</td>
<td>0.4</td>
<td>0.36</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Cadmium (ppm)</td>
<td>0.5</td>
<td>0.3</td>
<td>0.3</td>
<td>0.4</td>
<td>0.5</td>
</tr>
<tr>
<td>Arsenic (ppm)</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Antimony (ppm)</td>
<td>109</td>
<td>1.1</td>
<td>1.6</td>
<td>2.2</td>
<td>1.1</td>
</tr>
<tr>
<td>No. of Samples</td>
<td>727</td>
<td>402</td>
<td>455</td>
<td>839</td>
<td>998</td>
</tr>
</tbody>
</table>
Table 1.5-4. Median values of metals in soil samples from various units of the Belt Supergroup (data from Gott and Cathrall, 1980; ppm = mg/Kg).

<table>
<thead>
<tr>
<th>Element</th>
<th>Rock Unit</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prichard</td>
<td>Burke</td>
<td>Revett</td>
<td>St. Regis</td>
<td>Wallace</td>
</tr>
<tr>
<td></td>
<td>Formation</td>
<td>Formation</td>
<td>Formation</td>
<td>Formation</td>
<td>Formation</td>
</tr>
<tr>
<td>Iron (percent)</td>
<td>3.1</td>
<td>3.3</td>
<td>3.8</td>
<td>3.7</td>
<td>3.7</td>
</tr>
<tr>
<td>Magnesium (percent)</td>
<td>0.61</td>
<td>0.60</td>
<td>0.5</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>Calcium (percent)</td>
<td>0.57</td>
<td>0.59</td>
<td>0.5</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>Titanium (percent)</td>
<td>0.56</td>
<td>0.49</td>
<td>0.5</td>
<td>0.5</td>
<td>0.4</td>
</tr>
<tr>
<td>Manganese (ppm)</td>
<td>1,285</td>
<td>1,373</td>
<td>1,730</td>
<td>1,809</td>
<td>1,377</td>
</tr>
<tr>
<td>Barium (ppm)</td>
<td>647</td>
<td>647</td>
<td>616</td>
<td>684</td>
<td>586</td>
</tr>
<tr>
<td>Beryllium (ppm)</td>
<td>1.4</td>
<td>1.1</td>
<td>1</td>
<td>1.1</td>
<td>1.2</td>
</tr>
<tr>
<td>Cobalt (ppm)</td>
<td>14</td>
<td>10</td>
<td>8.8</td>
<td>9.5</td>
<td>9.4</td>
</tr>
<tr>
<td>Chromium (ppm)</td>
<td>43</td>
<td>32</td>
<td>34</td>
<td>34</td>
<td>32</td>
</tr>
<tr>
<td>Molybdenum (ppm)</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Niobium (ppm)</td>
<td>9</td>
<td>9</td>
<td>---</td>
<td>---</td>
<td>8</td>
</tr>
<tr>
<td>Nickel (ppm)</td>
<td>29</td>
<td>21</td>
<td>20</td>
<td>21</td>
<td>24</td>
</tr>
<tr>
<td>Strontium (ppm)</td>
<td>159</td>
<td>178</td>
<td>157</td>
<td>164</td>
<td>154</td>
</tr>
<tr>
<td>Vanadium (ppm)</td>
<td>98</td>
<td>90</td>
<td>97</td>
<td>90</td>
<td>94</td>
</tr>
<tr>
<td>Mercury (ppm)</td>
<td>0.13</td>
<td>0.09</td>
<td>0.08</td>
<td>0.1</td>
<td>0.13</td>
</tr>
<tr>
<td>Copper (ppm)</td>
<td>21</td>
<td>20</td>
<td>29</td>
<td>30</td>
<td>29</td>
</tr>
<tr>
<td>Lead (ppm)</td>
<td>54</td>
<td>35</td>
<td>41</td>
<td>39</td>
<td>45</td>
</tr>
<tr>
<td>Zinc (ppm)</td>
<td>140</td>
<td>89</td>
<td>77</td>
<td>86</td>
<td>115</td>
</tr>
<tr>
<td>Silver (ppm)</td>
<td>0.5</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>Cadmium (ppm)</td>
<td>1.3</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
<td>0.5</td>
</tr>
<tr>
<td>Arsenic (ppm)</td>
<td>10</td>
<td>8.6</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Antimony (ppm)</td>
<td>1</td>
<td>1</td>
<td>1.8</td>
<td>1.9</td>
<td>1.1</td>
</tr>
<tr>
<td>Sulfur (percent)</td>
<td>0.029</td>
<td>0.035</td>
<td>0.053</td>
<td>0.049</td>
<td>0.046</td>
</tr>
<tr>
<td>No. of Samples</td>
<td>1,705</td>
<td>573</td>
<td>699</td>
<td>1,586</td>
<td>2,298</td>
</tr>
</tbody>
</table>
compared to the limits postulated by the U.S. EPA for the Clark Fork Superfund site (Table 1.5-5). 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 1.5-5. 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 Paradox database, which is 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 or two digits for the month (some sample numbers contain a leading zero); 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., “97,” if the samples were taken in 1997); and 5) one to three 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 COEUR D'ALENE RIVER DRAINAGE SURROUNDING THE COEUR D'ALENE MINING DISTRICT (Part 2 of the discussion of the Coeur d'Alene basin excluding Prichard Creek and Eagle Creek drainages)

2.1 INTRODUCTION

This report describes 132 secondary and minor properties in the Coeur d'Alene River drainage surrounding the Coeur d'Alene mining district, excluding the drainages of Prichard and Eagle creeks. Only three properties discussed in this volume reported any production, and only one company out of those three had more than 50 tons of total output. The study area extends from the Montana border on the east to Coeur d'Alene Lake on the west and includes Kootenai County north of the Coeur d'Alene River and Shoshone County north of the southern drainage divide for the South Fork of the Coeur d'Alene River. Access to the area is by paved and unpaved roads from the major highways. Interstate 90 provides access to the southern part of the area, and U.S. Highway 95 is near the western boundary. Most of the secondary drainages have dirt roads, especially those with past mining activity.

The study area is in the Wallace and Fernan Districts of the Panhandle National Forest, and most of the land is administered by the U.S. Forest Service (USFS). There are enclaves of private land, mostly on patented mining claims.

The 132 mines and prospects described in this report are located on twenty-three 7.5-minute topographic maps (U.S. Geological Survey). The location of these properties is shown in Figure 2.1-1. Elevations in the study area range from 2,125 feet at Coeur d'Alene Lake to over 6,500 feet on the Idaho-Montana border. The area is heavily forested with dense brush and conifers, and the topography is generally very steep.

2.1.1 Summary of the Coeur d'Alene River Basin Study Area

There were 154 mining properties (Table 2.1.1-1 and Part 1 of this report [Kauffman and others, 1998]) examined in the Coeur d'Alene River basin surrounding the Coeur d'Alene mining district. The twenty-two sites with the most significant environmental problems are discussed in Part 1 (Volume III). These properties had either significant environmental problems (usually acid water, high metal loadings in the water, or old mill tailings) or physical hazards (open adits, tunnels, shafts, or pits). The properties with less serious environmental problems or with only physical hazards are covered in Part 2 (Volume V, Sections A through D).

Of the 132 mines in the Coeur d'Alene River drainage discussed in Part 2 (Volume V, Sections A through D), forty-seven have the potential to have an environmental impact on or near USFS lands. Fifteen of these properties have waste dumps in active waterways, twenty-six sites have water discharges that exceed one or more water quality standards, and six properties have both water quality concerns and waste rock impinging on an active waterway. Of the forty-six sites discussed in this section of the report (Section D of Volume V), seven have the potential to have
Figure 2.1-1b. Location of properties in the southwest part of the Coeur d'Alene River drainage surrounding the Coeur d'Alene mining district (U.S. Geological Survey St. Maries 1:100,000-scale map). Properties for all four sections of Volume V are shown on Figures 2.1-1a–2.1-1d.
Figure 2.1-1c. Location of properties in the northeast part of the Coeur d'Alene River drainage surrounding the Coeur d'Alene mining district (U.S. Geological Survey Thompson Falls 1:100,000-scale map). Properties for all four sections of Volume V are shown on Figures 2.1-la–2.1-Id.
Figure 2.1-1d. Location of properties in the southeast part of the Coeur d'Alene River drainage surrounding the Coeur d'Alene mining district (U.S. Geological Survey Wallace 1:100,000-scale map). Properties for all four sections of Volume V are shown on Figures 2.1-1a-2.1-1d.
Table 2.1-1. Summary of the secondary and minor sites in the Coeur d'Alene River drainage surrounding the Coeur d'Alene mining district (excluding the Prichard and Eagle Creek drainages). The properties are arranged in the order they are discussed in the text, approximately in relative order of importance regarding environmental concerns and/or physical hazards. Properties shown in gray are discussed in Sections B, C, and D of this volume.

Explanation:

Site No.: Idaho Geological Survey file number, or field designation number.
Surface Owner: FS = Forest Service; P = Private; M = mixed Forest Service/Private, or undetermined.
Water/Solid Sample: numbers indicate the number of samples collected.
Environmental Concerns: W = adit water; D = waste dump; T = tailings. 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 mercury tests; T or D - tailings or dump samples that exceed background or environmental standards for one or more elements in the Element Screen, and/or tailings or dump samples that show significant leaching of one or more metals in the TCLP for Metals Screen.
Physical Conditions: AO = open adit; AG = open adit, gated; AG(O) = open adit, gated, gate open; AC = caved or otherwise closed adit; SO = open shaft; SC = caved shaft; StO = open stope; T = trench or dozer cut; P = prospect pit. Numbers indicate number of each type of working at the site; queried when type or condition of workings uncertain or unknown.

<table>
<thead>
<tr>
<th>Site No.</th>
<th>Mine/Prospect Name</th>
<th>Surface Owner</th>
<th>Water Sample</th>
<th>Solid Sample</th>
<th>Environmental Concerns</th>
<th>Physical Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP-117</td>
<td>Washington-Idaho Mine</td>
<td>FS</td>
<td>1</td>
<td>D</td>
<td>ISO? 2AO</td>
<td></td>
</tr>
<tr>
<td>SP-45</td>
<td>Commonwealth Mine</td>
<td>FS</td>
<td>1</td>
<td>D</td>
<td>2AC 2SC</td>
<td></td>
</tr>
<tr>
<td>SP-42</td>
<td>Shamrock Mine</td>
<td>FS</td>
<td>1</td>
<td>1</td>
<td>W, D 1AO</td>
<td></td>
</tr>
<tr>
<td>SP-35</td>
<td>Bradbury Prospect</td>
<td>FS</td>
<td>1</td>
<td>D</td>
<td>1AC</td>
<td></td>
</tr>
<tr>
<td>SP-53</td>
<td>Burnt Cabin Prospect</td>
<td>FS</td>
<td>1</td>
<td>2</td>
<td>D 2AO 1SC</td>
<td></td>
</tr>
<tr>
<td>SP-77</td>
<td>North Fork Mine</td>
<td>FS</td>
<td>1</td>
<td>1</td>
<td>D? 3AO</td>
<td></td>
</tr>
<tr>
<td>SP-271</td>
<td>Bismarck Prospect</td>
<td>M</td>
<td>1</td>
<td>1</td>
<td>W 1AO</td>
<td></td>
</tr>
<tr>
<td>SP-277</td>
<td>Silver Dale and Big Hill Mine</td>
<td>M</td>
<td>1</td>
<td>W</td>
<td>2AO</td>
<td></td>
</tr>
<tr>
<td>SP-297</td>
<td>Royal Apex</td>
<td>FS</td>
<td>1</td>
<td>W</td>
<td>1AC</td>
<td></td>
</tr>
<tr>
<td>WL-221</td>
<td>Capitol Silver-Lead</td>
<td>FS</td>
<td>1</td>
<td></td>
<td>1AO 1AC</td>
<td></td>
</tr>
<tr>
<td>WL-338</td>
<td>Lewis and Clark Group</td>
<td>FS</td>
<td>1</td>
<td>D</td>
<td>1AO</td>
<td></td>
</tr>
</tbody>
</table>
Table 2.1-1 (continued). Summary of the secondary and minor sites in the Coeur d'Alene River drainage surrounding the Coeur d'Alene mining district (excluding the Prichard and Eagle Creek drainages).

<table>
<thead>
<tr>
<th>Site No.</th>
<th>Mine/Prospect Name</th>
<th>Surface Owner</th>
<th>Water Sample</th>
<th>Solid Sample</th>
<th>Environmental Concerns</th>
<th>Physical Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>WL-433</td>
<td>Beacon Light Mine, No. 2 adit</td>
<td>FS</td>
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20
Table 2.1-1 (continued). Summary of the secondary and minor sites in the Coeur d'Alene River drainage surrounding the Coeur d'Alene mining district (excluding the Prichard and Eagle Creek drainages).

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<th>Site No.</th>
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21
Table 2.1-1 (continued). Summary of the secondary and minor sites in the Coeur d'Alene River drainage surrounding the Coeur d'Alene mining district (excluding the Prichard and Eagle Creek drainages).

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<thead>
<tr>
<th>Site No.</th>
<th>Mine/Prospect Name</th>
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Table 2.1-1 (continued). Summary of the secondary and minor sites in the Coeur d'Alene River drainage surrounding the Coeur d'Alene mining district (excluding the Prichard and Eagle Creek drainages).

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<th>Physical Conditions</th>
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Table 2.1-1 (continued). Summary of the secondary and minor sites in the Coeur d'Alene River drainage surrounding the Coeur d'Alene mining district (excluding the Prichard and Eagle Creek drainages).

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<th>Site No.</th>
<th>Mine/Prospect Name</th>
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<td>B8059706</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WL-451</td>
<td>Silver Crown Group</td>
<td>FS</td>
<td></td>
<td></td>
<td></td>
<td>2T</td>
</tr>
<tr>
<td>WL-453</td>
<td>Pioneer Mines, Inc.</td>
<td>FS</td>
<td>1</td>
<td>W?</td>
<td></td>
<td>1T</td>
</tr>
<tr>
<td>WL-456</td>
<td>Idaho Copper</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td>1AC</td>
</tr>
<tr>
<td>WL-461</td>
<td>Helvetia Prospect</td>
<td>FS</td>
<td>2</td>
<td>1</td>
<td>D</td>
<td>1AC</td>
</tr>
<tr>
<td>WL-465</td>
<td>Nonpareil Group</td>
<td>FS</td>
<td></td>
<td></td>
<td></td>
<td>several P, T</td>
</tr>
</tbody>
</table>

24
Table 2.1-1 (continued). Summary of the secondary and minor sites in the Coeur d'Alene River drainage surrounding the Coeur d'Alene mining district (excluding the Prichard and Eagle Creek drainages).

<table>
<thead>
<tr>
<th>Site No.</th>
<th>Mine/Prospect Name</th>
<th>Surface Owner</th>
<th>Water Sample</th>
<th>Solid Sample</th>
<th>Environmental Concerns</th>
<th>Physical Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>WL-468</td>
<td>Tillicum Prospect</td>
<td>FS</td>
<td></td>
<td></td>
<td></td>
<td>1AC</td>
</tr>
<tr>
<td>WL-470</td>
<td>Placer Creek Prospect</td>
<td>FS</td>
<td></td>
<td></td>
<td></td>
<td>1AC 1T? or 2T</td>
</tr>
<tr>
<td>K07179706</td>
<td>Unnamed Prospect, Bradbury Gulch, Hayden Lake 7.5</td>
<td>FS</td>
<td>1</td>
<td>D</td>
<td></td>
<td>1AC</td>
</tr>
<tr>
<td>B7189705</td>
<td>Unnamed Prospect, Terror Gulch, Kellogg East 7.5</td>
<td>FS</td>
<td></td>
<td></td>
<td></td>
<td>1AC</td>
</tr>
<tr>
<td>K07229704</td>
<td>Unnamed Prospect, E. Fork of Hayden Creek, Spades Mtn. 7.5</td>
<td>FS</td>
<td></td>
<td></td>
<td></td>
<td>1T</td>
</tr>
<tr>
<td>K07239701</td>
<td>Unnamed Prospect, trib. of Lewelling Creek, Spades Mtn. 7.5</td>
<td>FS</td>
<td></td>
<td></td>
<td></td>
<td>1T</td>
</tr>
<tr>
<td>K07299701</td>
<td>Unnamed Prospect, trib. to Potter Creek, Lamb Pk. 7.5</td>
<td>FS</td>
<td></td>
<td></td>
<td></td>
<td>1P 3T 1AC?</td>
</tr>
<tr>
<td>K07299703</td>
<td>Unnamed Prospect, Stewart Creek, Cataract Peak 7.5</td>
<td>FS</td>
<td>2</td>
<td></td>
<td></td>
<td>1AC</td>
</tr>
<tr>
<td>R08059701</td>
<td>Unnamed Prospect, Wolf Lodge Creek, Wolf Lodge 7.5</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td>1AC</td>
</tr>
<tr>
<td>K08069703</td>
<td>Unnamed Prospect, W. Fork of Big Creek, Polaris Peak 7.5</td>
<td>P</td>
<td>1</td>
<td>W</td>
<td></td>
<td>1AC</td>
</tr>
<tr>
<td>K08069706</td>
<td>Unnamed Prospect, W. Fork of Big Creek, Polaris Peak 7.5</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td>1T</td>
</tr>
<tr>
<td>SP-286 (K08079708)</td>
<td>National Mine, unnamed adit</td>
<td>FS</td>
<td>1</td>
<td>W</td>
<td></td>
<td>1AC</td>
</tr>
<tr>
<td>R08139701</td>
<td>Unnamed Prospect, no stream, Wallace 7.5</td>
<td>FS</td>
<td></td>
<td></td>
<td></td>
<td>1T 1P</td>
</tr>
<tr>
<td>K08139701</td>
<td>Unnamed Prospect, W. Fork of Big Creek, Polaris Peak 7.5</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td>1AC</td>
</tr>
<tr>
<td>K08139702</td>
<td>Unnamed Prospect, W. Fork of Big Creek, Polaris Peak 7.5</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td>1P</td>
</tr>
</tbody>
</table>
Table 2.1-1 (continued). Summary of the secondary and minor sites in the Coeur d'Alene River drainage surrounding the Coeur d'Alene mining district (excluding the Prichard and Eagle Creek drainages).

<table>
<thead>
<tr>
<th>Site No.</th>
<th>Mine/Prospect Name</th>
<th>Surface Owner</th>
<th>Water Sample</th>
<th>Solid Sample</th>
<th>Environmental Concerns</th>
<th>Physical Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>B8139706</td>
<td>Unnamed Prospect, Military Gulch, Burke 7.5</td>
<td>FS</td>
<td></td>
<td></td>
<td></td>
<td>IP</td>
</tr>
<tr>
<td>B8139708</td>
<td>Unnamed Prospect, Military Gulch, Burke 7.5</td>
<td>FS</td>
<td></td>
<td></td>
<td></td>
<td>1AC</td>
</tr>
<tr>
<td>K08199711</td>
<td>Unnamed Prospect, Sonora Gulch, Burke 7.5</td>
<td>M</td>
<td>1</td>
<td>D</td>
<td></td>
<td>1AC</td>
</tr>
<tr>
<td>K08209701</td>
<td>Unnamed Prospect, Sonora Gulch, Burke 7.5</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td>1AC</td>
</tr>
<tr>
<td>K08209702,</td>
<td>Unnamed Prospects, Sonora Gulch, Burke 7.5</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td>1AC, IP</td>
</tr>
<tr>
<td>K08209703</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K08209704</td>
<td>Unnamed Prospect, Canyon Creek, Burke 7.5</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td>2AC? or 2T</td>
</tr>
<tr>
<td>WL-272</td>
<td>Sonora Prospect</td>
<td>M</td>
<td>1</td>
<td>1</td>
<td>D, W</td>
<td>2AO, 1AC</td>
</tr>
</tbody>
</table>
an environmental impact on or near USFS lands. Of these sites, three have dumps that impinge on active waterways, three have water discharges that exceed one or more water quality standards, and one has both water quality concerns and waste rock impinging on an active waterway.

Forty-seven properties discussed in Volume V have open adits or shafts. An additional eight properties have gated openings. Some of the gates are secure, but others could be circumvented by someone determined to enter the adit. Of the forty-six properties discussed in Section D of Volume V, one has an open adit. Another adit has a gated opening with a narrow crawl space above it.

2.2 GEOLOGY

The most recent general references on the geology of the Coeur d'Alene River basin are Griggs (1973) and Harrison and others (1986). The geology and ore deposits of parts of the area are discussed in Anderson (1940) and Hobbs and others (1965). Additional references include Ransome (1904), Ransome and Calkins (1908), Umpleby and Jones (1923), and Fryklund (1964). Gott and Cathrall (1980) discuss the geochemistry of the Coeur d'Alene district. The geology and mineral deposits of the western part of the drainage are discussed in Anderson (1940). A brief description of the geologic framework of the area follows.

The metal mines in the district are hosted by metasedimentary rocks of the Belt Supergroup of Precambrian age (Figure 2.2-1). The characteristics of the various units comprising the supergroup are shown in Table 3.2.1. One group of mines in the study area are lead-zinc-silver deposits in the Prichard Formation. This formation is broken into an upper and lower part by Hosterman (1956) and Harrison and others (1986). Key references to the Prichard are Cressman (1982) and Cressman (1989). Other important groups of mines include stratabound copper-silver deposits located near the contact between the Revett and St. Regis Formations and lead-silver-zinc deposits located in the transition zone between the Prichard and Burke Formations (Bennett, 1984; Mitchell and Bennett, 1983). Other deposits are in the Wallace Formation.

Igneous rocks include several Cretaceous or Tertiary granitic intrusives near the western edge of the area (Anderson, 1940) and the Gem stocks in the vicinity of Ninemile Creek. Some of the mines in the area are associated with these granitic rocks.

A series of northwest-trending strike-slip faults, including the Thompson Pass, Osburn, and Kellogg faults, are part of the Lewis and Clark line. The Osburn fault separates the Coeur d'Alene district into two halves and follows the South Fork of the Coeur d'Alene River near the southern boundary of the study area. North of the Kellogg fault, a series of faults that trend north-south marks the southern end of the Purcell trench. Folds generally trend north-south or west-northwest, mimicking better known structures in the Coeur d'Alene mining district. The Dobson Pass fault is a major structure that separates the Prichard Formation from the Wallace Formation in the central part of the study area and is a continuation of a major fault that extends up Ninemile Creek north of Wallace, Idaho.
Figure 2.2-1a. Geology of the western part of the Coeur d'Alene River drainage, Idaho (Griggs, 1973). pCqdp = Middle Proterozoic quartz diorite or amphibolite; pCqdp = Middle Proterozoic Prichard Formation; pCqdp = Middle Proterozoic Burke Formation; pCqdp = Middle Proterozoic Revett Formation; pCqdp = Middle Proterozoic Revett and Burke Formations, undivided; pCw = Middle Proterozoic Wallace Formation; pCw = Middle Proterozoic Striped Peak Formation; pCw = Middle Proterozoic Libby Formation; Erg = Cambrian Rennie Shale and Gold Creek Quartzite; Cl = Cambrian Lakeview Limestone; TMg = Tertiary and Mesozoic granitic rocks; Tc = Miocene and Pliocene Columbia River Basalt and late Lahotan Formation; QTg = Tertiary and Quaternary older gravel deposits; Qp = Pleistocene Palouse Formation; Qp = Pleistocene older glacial deposits; Qpq = Pleistocene glacial flood deposits; Qpy = Pleistocene younger glacial deposits; Qs = Quaternary landslide deposits; Qal = Holocene alluvium. Properties for all four sections of Volume V are shown on Figures 2.2-1a and 2.2-1b.
Figure 2.2-1b. Geology of the eastern part of the Coeur d'Alene River drainage, Idaho (Harrison and others, 1986). Ypu, Ypl = Middle Proterozoic Prichard Formation; Yb = Middle Proterozoic Burke Formation; Yr = Middle Proterozoic Revett Formation; Yw, Ywu, Ywm, Ywl = Middle Proterozoic Wallace Formation; Ysp = Middle Proterozoic Striped Peak Formation; ZYd = Late and Middle Proterozoic mafic dikes and sills; Ks, Kg = Cretaceous granitic rocks; QTg = Tertiary and Quaternary gravel deposits; Qg = Pleistocene glacial, fluvial and flood deposits; Qi = Quaternary lake sediments; Qal = Holocene alluvium. Properties for all four sections of this volume are shown on Figures 2.2-1a and 2.2-1b.
<table>
<thead>
<tr>
<th>Group</th>
<th>Formation</th>
<th>Lithology</th>
<th>Thickness (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missoula</td>
<td>Striped Peak</td>
<td>Interbedded quartzite and argillite with some arenaceous dolomitic beds. Purplish gray and pink to greenish gray. Ripple marks, mud cracks common. Top eroded.</td>
<td>1,500+</td>
</tr>
<tr>
<td></td>
<td>Formation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wallace</td>
<td>Upper part</td>
<td>Mostly medium- to greenish-gray finely laminated argillite. Some arenaceous dolomite and impure quartzite, and minor gray dolomite and limestone in the middle part.</td>
<td>4,500-6,500</td>
</tr>
<tr>
<td></td>
<td>Lower part</td>
<td>Light-gray more or less dolomitic quartzite interbedded with greenish-gray argillite. Ripple marks, mud cracks abundant.</td>
<td></td>
</tr>
<tr>
<td>Ravalli</td>
<td>St. Regis Formation</td>
<td>Upper part Light greenish-yellow to light green-gray argillite; thinly laminated. Some carbonate-bearing beds.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lower part</td>
<td>Gradational from thick-beded pure quartzite at base to interbedded argillite and impure quartzite at top. Red-purple color characteristic; some green-gray argillite. Some carbonate-bearing beds. Ripple marks, mud cracks, and mud-chip breccia common.</td>
<td>1,400-2,000</td>
</tr>
<tr>
<td></td>
<td>Revett Quartzite</td>
<td>Thick-beded vitreous light yellowish-gray to nearly white pure quartzite. Grades into nearly pure and impure quartzite at bottom and top. Cross-stratification common.</td>
<td>1,200-3,400</td>
</tr>
<tr>
<td></td>
<td>Burke Formation</td>
<td>Light greenish-gray impure quartzite. Some pale red and light yellowish-gray pure to nearly pure quartzite. Ripple marks, swash marks, and pseudo-conglomerate.</td>
<td>2,200-3,000</td>
</tr>
<tr>
<td>Prichard</td>
<td>Upper part</td>
<td>Interbedded medium-gray argillite and quartzose argillite and light-gray impure to pure quartzite. Some mud cracks and ripple marks.</td>
<td>12,000+</td>
</tr>
<tr>
<td></td>
<td>Lower part</td>
<td>Thin- to thick-beded, medium gray argillite and quartzose argillite; laminated in part. Pyrite abundant. Some discontinuous quartzite zones. Base buried.</td>
<td></td>
</tr>
</tbody>
</table>
2.3 ECONOMIC GEOLOGY

2.3.1 General Characteristics of the Ore

The metal mines in the district are hosted by metasedimentary rocks of the Belt Supergroup of Precambrian age (Figure 2.2-1). Most of the mines in the study area are lead-zinc-silver deposits, sometimes containing copper and gold. Host rocks include all formations of the Belt Supergroup. The ore veins have variously been described as hydrothermal deposits (Umpleby and Jones, 1923; Fryklund, 1964) or as mobilized syngeneric stratabound deposits (Hershey, 1916; Bennett, 1984). The veins may have been filled as late as the Cretaceous (Fleck and others, 1991; Eaton and others, 1993). Sphalerite, galena, pyrite, and pyrrhotite are commonly found in these deposits (Fryklund, 1964; Umpleby and Jones, 1923). Only three of the properties discussed in this volume reported any production. Of the three properties, only one produced more than 50 tons of ore.

2.3.2 Summary of Mill Development

All of the mines that had associated mills were discussed in Volume III (Part 1 of the discussion of the Coeur d'Alene River drainage surrounding the Coeur d'Alene mining district but excluding the Prichard Creek and Eagle Creek drainages), which covers the major properties. This volume (Part 2 of the discussion of the Coeur d'Alene River drainage) discusses the smaller properties, which did not have associated mills.

2.4 HYDROLOGY AND HYDROGEOLOGY

The study area includes all of the drainage of the Coeur d'Alene River, except the drainages of Prichard and Eagle creeks (which are covered in Volumes I and IV of this report; see Appendix E). Prichard Creek flows into the Coeur d'Alene River at Prichard. The major drainages in the area (Figures 2.1-1 and 2.1-2) are the Coeur d'Alene River (which forms the southern boundary of the western half of the study area) and the North Fork of the Coeur d'Alene River. The South Fork of the Coeur d'Alene River, which drains the Coeur d'Alene mining district (most of which is not Forest Service land), flows into the Coeur d'Alene River west of Enaville. In the eastern part of the area, the southern boundary of the study area follows the divide between the South Fork of the Coeur d'Alene River and the St. Joe River drainages.

As noted, a number of the lead-zinc mines in the study area are hosted by rocks of the Prichard Formation. In places these rocks contain visible sulfides (primarily pyrite and pyrrhotite). These rocks also contain significantly higher values of base metals than some of the other Belt rocks. Table 1.5-3 (based on 727 samples) shows that rocks in the Prichard Formation contain 60 ppm zinc, 34 ppm lead, 3 percent iron, 22 ppm copper, and 0.5 percent cadmium, and soils developed on the Prichard reflect this metal content (Table 1.5-4 based on 1,705 samples) with 140 ppm zinc, 54 ppm lead, 3.1 percent iron, 21 ppm copper, 1.3 ppm cadmium, and 10 ppm arsenic. Tables 1.5-3 and 1.5-4 show similar data for the other formations in the Belt Supergroup.
To test whether the high metal content from the Belt Supergroup, especially the Prichard Formation, was impacting stream waters, eight 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:

- B7169711 — East Fork of Twomile Creek
- B7169712 — Ninemile Creek
- B7259704 — Daisy Gulch
- K07299704 — headwaters of Stewart Creek
- R07309701 — Lost Man Creek
- R08069702 — Big Creek
- R08119701 — Varnum Creek
- R72297001 — Beauty Creek

Of these eight samples, only R08119701 was below all EPA standards for all elements. In the total recoverable metals screen, samples B7169712, K07299704, R07309701, and R08069702 exceed all standards for cadmium, samples B7259704 and R72297001 exceed the Aquatic Life Chronic standard and are within the range of the Aquatic Life Acute standard for cadmium, and sample B7169711 exceeds the Aquatic Life Chronic standard for cadmium. In the dissolved metals screen, sample B7169712 exceeds all standards for cadmium, and samples R07309701 and R72297001 exceed the Aquatic Life Chronic standard for cadmium.

In addition, sample B7169712 exceeds both Aquatic Life standards for zinc in the total recoverable metals and the dissolved metals screens. In the dissolved metals screen, samples K07299704 and R07309701 exceed the Aquatic Life Chronic standard and are within the range of the Aquatic Life Acute standard for copper, sample R72297001 is within the range of the Aquatic Life Chronic standard for copper, and sample R08069702 is at the lower limit of the Aquatic Life Chronic standard for copper.

2.5 SUMMARY OF THE COEUR D'ALENE RIVER DRAINAGE

2.5.1 Summary of Environmental Observations

Most, but not all, samples which significantly exceed EPA water standards are from the larger mines in the area (Tables 2.5-1 and 2.5-2). Water quality variances include significant amounts of zinc from the Silver Cable Mine and lesser amounts of copper from the Beacon Light Mine and the Central and Little Giant Prospects (Atlas Mine). Cadmium in excess of one or more water quality standards is the most prevalent water quality variance in the Coeur d'Alene River drainage; in nearly half of these samples, cadmium is the only element that exceeds any standard. Most of the elements detected in the water samples are also found in the rock units underlying the drainages.
Table 2.4-1. Dissolved metals screen for reference samples from the Coeur d’Alene River drainage surrounding the Coeur d’Alene mining district (excluding the drainages of Prichard and Eagle Creeks).

<table>
<thead>
<tr>
<th>FIELD NO.</th>
<th>REMARKS</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>B7169711</td>
<td>East Fork of Twomile Creek</td>
<td>--</td>
<td>0.0720</td>
<td>--</td>
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<td>0.0053</td>
<td></td>
</tr>
<tr>
<td>B7169712</td>
<td>Nine Mile Creek</td>
<td>--</td>
<td>0.0200</td>
<td>0.0180</td>
<td>0.0080</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.0310</td>
<td>--</td>
<td>2.9000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B7259704</td>
<td>Daisy Gulch</td>
<td>--</td>
<td>0.0260</td>
<td>--</td>
<td>0.0100</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.0031</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K07299704</td>
<td>Stewart Creek, head</td>
<td>--</td>
<td>0.0036</td>
<td>--</td>
<td>0.0666</td>
<td>0.0200</td>
<td>0.0037</td>
<td>0.0031</td>
<td>0.020</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R07309701</td>
<td>Lost Man Creek</td>
<td>--</td>
<td>0.0099</td>
<td>0.0029</td>
<td>--</td>
<td>0.0180</td>
<td>0.0120</td>
<td>0.0039</td>
<td>0.021</td>
<td>0.0080</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R08069702</td>
<td>Big Creek</td>
<td>--</td>
<td>0.0220</td>
<td>--</td>
<td>--</td>
<td>0.0120</td>
<td>0.0057</td>
<td>0.0025</td>
<td>--</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R08119701</td>
<td>Varmum Creek</td>
<td>--</td>
<td>0.0100</td>
<td>--</td>
<td>--</td>
<td>0.0097</td>
<td>0.1500</td>
<td>0.0180</td>
<td>--</td>
<td>0.0028</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R72297001</td>
<td>Beauty Creek</td>
<td>--</td>
<td>0.0100</td>
<td>0.0032</td>
<td>0.0055</td>
<td>0.0160</td>
<td>--</td>
<td>--</td>
<td>0.016</td>
<td>0.013</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**EXPLANATION**

Blank space equals no analysis

mg/L = ppm

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>0.050</td>
<td>0.002</td>
<td>0.100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</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>
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<td>Aquatic Life, Acute</td>
<td>0.750</td>
<td>0.360</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>
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<td>0.16-0.28</td>
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<td>0.0006</td>
<td>0.0023</td>
<td>0.0044</td>
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Table 2.4-2. Total metals screen for reference samples from the Coeur d’Alene River drainage surrounding the Coeur d’Alene mining district (excluding the drainages of Prichard and Eagle Creeks).

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<th>Ba (ppm)</th>
<th>Cd (ppm)</th>
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<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>
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<td>Daisy Gulch</td>
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<td>---</td>
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<td>0.051</td>
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**EXPLANATION**

Blank space equals no analysis

Below Detection Limit is ---

**WATER QUALITY STANDARDS**

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<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>
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<th>Zn (mg/L)</th>
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<td>Primary MCL</td>
<td>0.050</td>
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<td>0.100</td>
<td>0.050</td>
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<tr>
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<td>0.750</td>
<td>0.360</td>
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<td>0.21-0.37</td>
<td>0.012-0.021</td>
<td>0.003</td>
<td>0.000012</td>
<td>0.16-0.28</td>
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Table 2.5-1. Dissolved metals in water samples from the minor properties in the Coeur d’Alene basin surrounding the Coeur d’Alene mining district. Numbers in bold exceed one or more water quality standards. Properties shown in gray are discussed in Sections A, B, and C of this volume.

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<tr>
<th>FIELD NO.</th>
<th>REMARKS</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 (ppb)</th>
<th>Hg (ppm)</th>
<th>Ni (ppb)</th>
<th>Zn (ppm)</th>
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<td>B7169701</td>
<td>Hudlow Mine (B7169701), adit</td>
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<td>0.0024</td>
<td>0.0024</td>
<td>0.0024</td>
<td>0.0024</td>
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**EXPLANATION**
- Blank space equals no analysis
- Below Detection Limit is ---

**WATER QUALITY STANDARDS**

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<th>Ba (mg/L)</th>
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<td>0.750</td>
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Table 2.5-1 (continued). Dissolved metals in water samples from the minor properties in the Coeur d’Alene basin surrounding the Coeur d’Alene mining district.

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<th>FIELD NO.</th>
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<th>Al (ppm)</th>
<th>As (ppm)</th>
<th>Ba (ppm)</th>
<th>Cd (ppm)</th>
<th>Cr (ppm)</th>
<th>Cu (ppm)</th>
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<th>Mn (ppb)</th>
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<td>0.01</td>
<td>0.14</td>
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<td>0.0033</td>
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**EXPLANATION**
- Blank space equals no analysis
- Below Detection Limit is ---

**WATER QUALITY STANDARDS**

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<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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<td>0.12-0.21</td>
<td>0.16-0.19</td>
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<tr>
<td>Aquatic Life, Acute</td>
<td>0.750</td>
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<td>0.001-0.002</td>
<td>0.21-0.37</td>
<td>0.012-0.021</td>
<td>0.003-0.008</td>
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<td>Aquatic Life, Chronic</td>
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Table 2.5-1 (continued). Dissolved metals in water samples from the minor properties in the Coeur d’Alene basin surrounding the Coeur d’Alene mining district.

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<th>FIELD NO.</th>
<th>REMARKS</th>
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<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>
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<td>East Fork Big Creek, downstream</td>
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<td>0.013</td>
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<tr>
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<td>0.0100</td>
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<td>K08289702</td>
<td>Dobson Pass Prospect (WL-203), seep at toe of Adit #1 dump</td>
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<td>K09019701</td>
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EXPLANATION

Blank space equals no analysis
Below Detection Limit is --

WATER QUALITY STANDARDS

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<th>Fe (mg/L)</th>
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<th>Mn (mg/L)</th>
<th>Hg (mg/L)</th>
<th>Ni (mg/L)</th>
<th>Zn (mg/L)</th>
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<td>0.100</td>
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<td>0.100</td>
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<tr>
<td>Aquatic Life, Acute</td>
<td>0.750</td>
<td>0.360</td>
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<td>0.018-0.034</td>
<td>1.0000</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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<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>
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<td>0.0006</td>
<td>0.0023</td>
<td>0.0044</td>
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mg/L = ppm
Table 2.5-1 (continued). Dissolved metals in water samples from the minor properties in the Coeur d’Alene basin surrounding the Coeur d’Alene mining district.

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<th>FIELD NO.</th>
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<th>Cu (ppm)</th>
<th>Fe (ppm)</th>
<th>Pb (ppm)</th>
<th>Mn (ppb)</th>
<th>Hg (ppm)</th>
<th>Ni (ppb)</th>
<th>Zn (ppm)</th>
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<td>K09169707</td>
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**EXPLANATION**
- Blank space equals no analysis
- mg/L = ppm
- Below Detection Limit is —

**WATER QUALITY STANDARDS**

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<th>Zn (mg/L)</th>
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<td>Primary MCL</td>
<td>0.050</td>
<td>2.0000</td>
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<td>0.050</td>
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<td>Secondary MCL</td>
<td>0.05-0.2</td>
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<tr>
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<td>0.0029</td>
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<td>0.023</td>
<td>0.0044</td>
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<td>0.0005</td>
<td>0.007</td>
<td>0.0025</td>
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Table 2.5-2. Total recoverable metals in water samples from the minor properties in the Coeur d'Alene River basin surrounding the Coeur d'Alene mining district. Numbers in bold exceed one or more water quality standards. Properties shown in gray are discussed in Sections A, B, and C of this volume.

<table>
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<th>FIELD NO.</th>
<th>REMARKS</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>
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<td>Hudlow Mine (B7169701), adit</td>
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<tr>
<td>B7169703</td>
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<tr>
<td>B7169704</td>
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<td>0.0240</td>
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<tr>
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<td>0.009</td>
<td>0.015</td>
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<td>0.04</td>
<td>0.030</td>
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<td>Moon Gulch, downstream from SP-121</td>
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<td>0.0230</td>
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<td>0.04</td>
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<tr>
<td>B8059702</td>
<td>Little Giant Prospect (WL-446), adit</td>
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<td>Blue Ribbon Group (WL-304), adit</td>
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<td>B8139705</td>
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<tr>
<td>B8139707</td>
<td>West Mammoth Prospect (WL-252), adit</td>
<td>--</td>
<td>0.0330</td>
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<td>--</td>
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<td>0.032</td>
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**EXPLANATION**

Blank space equals no analysis

Below Detection Limit is --

**WATER QUALITY STANDARDS**

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<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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<td>Primary MCL</td>
<td>0.0500</td>
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<td>0.005</td>
<td>0.100</td>
<td>0.050</td>
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<td>0.100</td>
<td>0.050</td>
<td>0.002</td>
<td>0.100</td>
<td>0.050</td>
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<td>Secondary MCL</td>
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<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>0.00012</td>
<td>0.16-0.28</td>
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<tr>
<td>Aquatic Life, Acute</td>
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<td>0.082-0.2</td>
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<td>0.00012</td>
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<tr>
<td>Aquatic Life, Chronic</td>
<td>0.087</td>
<td>0.1900</td>
<td>0.001-0.002</td>
<td>0.21-0.3</td>
<td>0.012-0.021</td>
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<td>0.00012</td>
<td>0.16-0.28</td>
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Estimated Detection Level (33% confidence) | 0.0040 | 0.003 | 0.013 | 0.035 | 0.012 | 0.002 | 0.02 | 0.003
Table 2.5-2 (continued). Total recoverable metals in water samples from the minor properties in the Coeur d’Alene River basin surrounding the Coeur d’Alene mining district.

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<th>FIELD NO.</th>
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<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>
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<td>Hercules Mine (WL-201/222), main adit</td>
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<td>0.012</td>
<td>0.0080</td>
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<td>0.071</td>
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<tr>
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<td>0.005</td>
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<tr>
<td>K08069704</td>
<td>unnamed prospect on West Fork of Big Creek (K08069703), adit</td>
<td>---</td>
<td>0.1200</td>
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<td>0.540</td>
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<tr>
<td>K08069707</td>
<td>West Fork of Big Creek, upstream</td>
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<td>0.0190</td>
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<td>0.015</td>
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EXPLANATION
Blank space equals no analysis
Below Detection Limit is ---

WATER QUALITY STANDARDS

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<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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<td>5.000</td>
<td>1.4-2.5</td>
<td>0.12-0.21</td>
<td>0.11-0.19</td>
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<tr>
<td>Secondary MCL</td>
<td>0.05-0.2</td>
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<td>1.000</td>
<td>0.082-0.2</td>
<td>0.0024</td>
<td>0.000012</td>
<td>0.16-0.28</td>
<td>0.11-0.19</td>
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<tr>
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<td>0.750</td>
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<tr>
<td>Aquatic Life, Chronic</td>
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Table 2.5-2 (continued). Total recoverable metals in water samples from the minor properties in the Coeur d’Alene River basin surrounding the Coeur d’Alene mining district.

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<th>Ba  (ppm)</th>
<th>Cd  (ppm)</th>
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<th>Fe  (ppm)</th>
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<th>Mn  (ppm)</th>
<th>Hg  (ppm)</th>
<th>Ni  (ppm)</th>
<th>Zn  (ppm)</th>
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<td>East Fork Big Creek, downstream</td>
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<td>0.006</td>
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<td>—</td>
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<td>California Gulch Prospect (WA-94), adit</td>
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<td>0.021</td>
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<td>Rooster Goose Mine (WL-98), adit</td>
<td>—</td>
<td>0.0360</td>
<td>0.006</td>
<td>0.015</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>0.004</td>
<td>—</td>
<td>0.03</td>
<td>0.003</td>
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<tr>
<td>K08289702</td>
<td>Dobson Pass Prospect (WA-203), seep at toe of Adit #1</td>
<td>—</td>
<td>0.0420</td>
<td>0.005</td>
<td>0.013</td>
<td>—</td>
<td>—</td>
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<td>0.014</td>
<td>—</td>
<td>0.03</td>
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<tr>
<td>K08289703</td>
<td>Mammoth Prospect (WL-238), adit</td>
<td>—</td>
<td>0.0340</td>
<td>0.004</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>0.0065</td>
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<td>0.02</td>
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<td>K09019701</td>
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<tr>
<td>K09029701</td>
<td>Vienna-International Mine (WL-471), Adit #1</td>
<td>—</td>
<td>0.0320</td>
<td>—</td>
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<td>—</td>
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<td>—</td>
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<td>K09029702</td>
<td>Vienna-International Mine (WL-471), Adit #2</td>
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<td>0.0370</td>
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<td>0.043</td>
<td>—</td>
<td>0.012</td>
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<tr>
<td>K09029703</td>
<td>Vienna-International Mine (WL-471), 150 feet below seep from dump</td>
<td>—</td>
<td>0.0490</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>0.009</td>
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**EXPLANATION**

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

**WATER QUALITY STANDARDS**

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<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>
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<td>Primary MCL</td>
<td>0.0500</td>
<td>2.0000</td>
<td>0.005</td>
<td>0.100</td>
<td>0.0500</td>
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<td>0.10</td>
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<td></td>
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<tr>
<td>Secondary MCL</td>
<td>0.05-0.2</td>
<td>0.004-0.009</td>
<td>1.7-3.1</td>
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<td>1.000</td>
<td>0.082-0.2</td>
<td>0.0024</td>
<td>1.4-2.5</td>
<td>0.012</td>
<td>0.21-0.21</td>
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<td></td>
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<tr>
<td>Aquatic Life, Acute</td>
<td>0.750</td>
<td>0.3600</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>
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<tr>
<td>Aquatic Life, Chronic</td>
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<td>0.002</td>
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<td>0.013</td>
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Table 2.5-2 (continued). Total recoverable metals in water samples from the minor properties in the Coeur d’Alene River basin surrounding the Coeur d’Alene mining district.

<table>
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<th>FIELD NO.</th>
<th>REMARKS</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>
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<tr>
<td>K09169707</td>
<td>East Fork of Twomile Creek, downstream</td>
<td>---</td>
<td>0.0800</td>
<td>---</td>
<td>0.014</td>
<td>0.036</td>
<td>---</td>
<td>0.006</td>
<td>---</td>
<td>0.03</td>
<td>0.008</td>
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<tr>
<td>R07299701</td>
<td>Unnamed prospect (SP-132), adit</td>
<td>---</td>
<td>0.0030</td>
<td>0.010</td>
<td>0.017</td>
<td>0.043</td>
<td>0.018</td>
<td>---</td>
<td>0.006</td>
<td>---</td>
<td>---</td>
<td>0.006</td>
<td></td>
</tr>
<tr>
<td>R08079701</td>
<td>National Mine (SP-287), No. 1 adit</td>
<td>---</td>
<td>0.0120</td>
<td>0.005</td>
<td>---</td>
<td>0.074</td>
<td>---</td>
<td>5.900</td>
<td>---</td>
<td>---</td>
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<tr>
<td>R08079703</td>
<td>National Mine (R08079702), No. 2 adit</td>
<td>---</td>
<td>0.0100</td>
<td>0.006</td>
<td>---</td>
<td>0.017</td>
<td>---</td>
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<td>R08129701</td>
<td>Pioneer Mines Prospect (WL-453), trench</td>
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<td>0.0040</td>
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<td>---</td>
<td>0.021</td>
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<tr>
<td>R72397001</td>
<td>Red Horse Prospect (SP-134), upstream</td>
<td>---</td>
<td>---</td>
<td>0.004</td>
<td>---</td>
<td>---</td>
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<td>---</td>
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<tr>
<td>R72397002</td>
<td>Red Horse Prospect (SP-134), seep from damp</td>
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<td>---</td>
<td>---</td>
<td>0.002</td>
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<tr>
<td>K10059801</td>
<td>Sonora Prospect (WL-272), Adit 1</td>
<td>---</td>
<td>0.012</td>
<td>---</td>
<td>0.014</td>
<td>---</td>
<td>0.026</td>
<td>---</td>
<td>0.001</td>
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<tr>
<td>K10059802</td>
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<td>---</td>
<td>0.033</td>
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<td>0.007</td>
<td>---</td>
<td>---</td>
<td>0.001</td>
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<tr>
<td>K10059804</td>
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<td>0.027</td>
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**EXPLANATION**

Blank space equals no analysis

Below Detection Limit is —

<table>
<thead>
<tr>
<th>WATER QUALITY STANDARDS</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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<tr>
<td>Primary MCL</td>
<td>0.0500</td>
<td>2.0000</td>
<td>0.005</td>
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<td>0.05-0.2</td>
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<td>0.082-0.2</td>
<td>0.0024</td>
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<td>0.12-0.21</td>
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<tr>
<td>Aquatic Life, Acute</td>
<td>0.750</td>
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<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>Aquatic Life, Chronic</td>
<td>0.087</td>
<td>0.1900</td>
<td>0.0004</td>
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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. No samples of mill tailings were collected from the properties examined in this volume because no mills were operated on these properties.
Table 2.5-3. Element screen for dump samples for the minor properties in the Coeur d'Alene River basin surrounding the Coeur d'Alene mining district. Properties shown in gray are discussed in Sections A, B, and C of this volume.

<table>
<thead>
<tr>
<th>FIELD NO.</th>
<th>REMARKS</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>
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<td>B7179706</td>
<td>Royal Mine (SP-125), dump</td>
<td>NA</td>
<td>1,700.00</td>
<td>43</td>
<td>4.90</td>
<td>5.00</td>
<td>260</td>
<td>82,000</td>
<td>480</td>
<td>110</td>
<td>NA</td>
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<td>Washington-Idaho Mine (SP-117), Adit #1 dump</td>
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<td>75</td>
<td>13.00</td>
<td>22.00</td>
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<td>Central Prospect (WL-445), Adit #1 dump</td>
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<td>Gove Pit, Willow Creek</td>
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<td>42.00</td>
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<td>65,000</td>
<td>20,000</td>
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<td>NA</td>
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<td>Lewis and Clark Group (WL-358), dump</td>
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<td>Commonwealth Mine (SP-45), dump</td>
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<td>19,000</td>
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<td>NA</td>
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<td>Shamrock Mine (SP-42), dump</td>
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<td>NA</td>
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<td>Burnt Cabin Mine (SP-53), shaft dump, oxidized</td>
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<td>8.30</td>
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<td>NA</td>
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<td>--</td>
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<td>25</td>
<td>620</td>
<td>NA</td>
<td>8.30</td>
<td>24</td>
</tr>
<tr>
<td>K08079707</td>
<td>Unnamed prospect (K08079706), dump</td>
<td>NA</td>
<td>100.00</td>
<td>120</td>
<td>4.40</td>
<td>17.00</td>
<td>27</td>
<td>13,000</td>
<td>300</td>
<td>700</td>
<td>NA</td>
<td>20.00</td>
<td>780</td>
</tr>
<tr>
<td>K08079710</td>
<td>Wolfson Mine (SP-274), dump</td>
<td>NA</td>
<td>--</td>
<td>44</td>
<td>1.30</td>
<td>4.60</td>
<td>14</td>
<td>8,200</td>
<td>23</td>
<td>1,000</td>
<td>NA</td>
<td>7.10</td>
<td>15</td>
</tr>
<tr>
<td>K08129704</td>
<td>Rockford Group (SP-252), dump</td>
<td>NA</td>
<td>--</td>
<td>35</td>
<td>1.50</td>
<td>4.60</td>
<td>14</td>
<td>17,000</td>
<td>30</td>
<td>2,700</td>
<td>NA</td>
<td>9.70</td>
<td>27</td>
</tr>
<tr>
<td>K08189702</td>
<td>North Fork Mine (SP-77), Adit #2, dump</td>
<td>NA</td>
<td>--</td>
<td>64</td>
<td>1.30</td>
<td>5.80</td>
<td>38</td>
<td>17,000</td>
<td>37</td>
<td>1,000</td>
<td>NA</td>
<td>16.00</td>
<td>45</td>
</tr>
</tbody>
</table>

Clark Fork Superfund Background Levels (mg/Kg) = ppm

| U.S. Mean Soil | 6.7 | 0.7 | 20.0 |
| Helena Valley Mean Soil | 16.5 | 0.2 | 11.5 |
| Missoula Lake Bed Sediments | NA | 0.2 | 34.0 |
| Blackfoot River | 4.0 | <0.1 | NA |
| Phytotoxic Concentration | 10.0 | 100.0 | 1000.0 |

Explanation

Below Detection Limit is --
Not analyzed equals NA
Table 2.5-3 (continued). Element screen for dump samples for the minor properties in the Coeur d'Alene River basin surrounding the Coeur d'Alene mining district.

<table>
<thead>
<tr>
<th>FIELD NO.</th>
<th>REMARKS</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>K08199712</td>
<td>Unnamed prospect (K08199711), dump</td>
<td>NA</td>
<td>140</td>
<td>1.60</td>
<td>8.40</td>
<td>59</td>
<td>18,000</td>
<td>63</td>
<td>1,200</td>
<td>NA</td>
<td>12.00</td>
<td>39</td>
</tr>
<tr>
<td>K08269702</td>
<td>Highlands Aurora (WL-145), dump</td>
<td>NA</td>
<td>560</td>
<td>1.50</td>
<td>6.80</td>
<td>84</td>
<td>11,000</td>
<td>1,600</td>
<td>1,300</td>
<td>NA</td>
<td>16.00</td>
<td>150</td>
</tr>
<tr>
<td>K08269705</td>
<td>Belmont-Banner Mine (WL-143), dump</td>
<td>NA</td>
<td>400</td>
<td>1.90</td>
<td>9.40</td>
<td>28</td>
<td>16,000</td>
<td>74</td>
<td>400</td>
<td>NA</td>
<td>20.00</td>
<td>140</td>
</tr>
<tr>
<td>K08269707</td>
<td>California Gulch Prospect (WL-94), dump</td>
<td>NA</td>
<td>130.00</td>
<td>170</td>
<td>4.60</td>
<td>15.00</td>
<td>51</td>
<td>27,000</td>
<td>230</td>
<td>1,100</td>
<td>NA</td>
<td>28.00</td>
</tr>
<tr>
<td>K09169705</td>
<td>Unnamed prospect (K09169704), dump</td>
<td>NA</td>
<td>400</td>
<td>0.85</td>
<td>6.00</td>
<td>41</td>
<td>8,200</td>
<td>38</td>
<td>400</td>
<td>NA</td>
<td>9.60</td>
<td>23</td>
</tr>
<tr>
<td>R07299702</td>
<td>Unnamed prospect (SP-132), dump</td>
<td>NA</td>
<td>160.00</td>
<td>120</td>
<td>4.30</td>
<td>30.00</td>
<td>230</td>
<td>59,000</td>
<td>100</td>
<td>1,000</td>
<td>NA</td>
<td>67.00</td>
</tr>
<tr>
<td>R08129703</td>
<td>Helvetia Prospect (WL-461), dump</td>
<td>NA</td>
<td>150.00</td>
<td>170</td>
<td>3.00</td>
<td>25.00</td>
<td>30</td>
<td>28,000</td>
<td>67</td>
<td>690</td>
<td>NA</td>
<td>27.00</td>
</tr>
<tr>
<td>R72397003</td>
<td>Red Horse Mine (SP-134), dump</td>
<td>NA</td>
<td>160.00</td>
<td>40</td>
<td>5.70</td>
<td>28.00</td>
<td>170</td>
<td>71,000</td>
<td>110</td>
<td>1,200</td>
<td>NA</td>
<td>74.00</td>
</tr>
<tr>
<td>K10059803</td>
<td>Sonora Prospect (WL-272), dump</td>
<td>NA</td>
<td>260</td>
<td>2.30</td>
<td>6.50</td>
<td>2,100</td>
<td>15,000</td>
<td>13,000</td>
<td>1,400</td>
<td>NA</td>
<td>13.00</td>
<td>460</td>
</tr>
</tbody>
</table>

45

Clark Fork Superfund Background Levels (mg/Kg) = ppm

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

Explanation
Below Detection Limit is --
Not analyzed equals NA
Table 2.5-4. Toxicity Characteristic Leaching Procedure fordump samples from the minor properties in the Coeur d'Alene River basin surrounding the Coeur d'Alene mining district. Properties shown in gray are discussed in Sections A, B, and C of this volume.

<table>
<thead>
<tr>
<th>FIELD NO.</th>
<th>REMARKS</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>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>B7179706</td>
<td>Royal Mine (SP-125), dump</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>0.680</td>
<td>ND</td>
<td>—</td>
<td>—</td>
<td>0.073</td>
<td>2.0</td>
</tr>
<tr>
<td>B7239701</td>
<td>Washington-Idaho Mine (SP-117), Adit #1 dump</td>
<td>—</td>
<td>0.060</td>
<td>—</td>
<td>0.990</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>0.900</td>
<td>7.6</td>
</tr>
<tr>
<td>B8069701</td>
<td>Central Prospect (WL-445), Adit #1 dump</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>86.000</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>5.100</td>
<td>8.1</td>
</tr>
<tr>
<td>B8069705</td>
<td>Gravel pit, Willow Creek</td>
<td>—</td>
<td>0.140</td>
<td>0.032</td>
<td>69.000</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>0.850</td>
<td>6.9</td>
</tr>
<tr>
<td>B8079702</td>
<td>Lewis and Clark Group (WL-358), dump</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>1.500</td>
<td>7.6</td>
</tr>
<tr>
<td>K07179701</td>
<td>Commonwealth Mine (SP-45), dump</td>
<td>—</td>
<td>0.024</td>
<td>—</td>
<td>16.000</td>
<td>ND</td>
<td>—</td>
<td>—</td>
<td>1.200</td>
<td>6.0</td>
</tr>
<tr>
<td>K07179703</td>
<td>Shamrock Mine (SP-42), dump</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>0.250</td>
<td>ND</td>
<td>—</td>
<td>—</td>
<td>1.400</td>
<td>7.7</td>
</tr>
<tr>
<td>K07179704</td>
<td>Unnamed prospect (K07179706), dump</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>ND</td>
<td>—</td>
<td>—</td>
<td>1.300</td>
<td>6.1</td>
</tr>
<tr>
<td>K07179705</td>
<td>Bradbury Mine (SP-35), dump sampled on north side of creek</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>ND</td>
<td>—</td>
<td>—</td>
<td>1.300</td>
<td>6.6</td>
</tr>
<tr>
<td>K07249702</td>
<td>Burnt Cabin Mine (SP-53), shaft dump, unoxidized</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>0.110</td>
<td>7.8</td>
</tr>
<tr>
<td>K07249703</td>
<td>Burnt Cabin Mine (SP-53), shaft dump, oxidized</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>1.200</td>
<td>6.3</td>
</tr>
<tr>
<td>K07299702</td>
<td>Unnamed prospect (SP-46), dump</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>0.700</td>
<td>5.2</td>
</tr>
<tr>
<td>K07309703</td>
<td>Rainbow No. 2 Prospect (SP-55), dump, oxidized</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>1.000</td>
<td>8.1</td>
</tr>
<tr>
<td>K07309704</td>
<td>Rainbow No. 2 Prospect (SP-55), dump, unoxidized</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>0.830</td>
<td>4.6</td>
</tr>
<tr>
<td>K08069702</td>
<td>Bismarck Prospect (SP-271), dump, southwest end</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>1.300</td>
<td>8.0</td>
</tr>
</tbody>
</table>

**EXPLANATION**

Blank space equals no analysis

Not Detected is ND

Below Detection Limit is —

**WATER QUALITY STANDARDS**

<table>
<thead>
<tr>
<th>As (mg/L)</th>
<th>Cd (mg/L)</th>
<th>Cr (mg/L)</th>
<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>
</tr>
</thead>
<tbody>
<tr>
<td>Primary MCL</td>
<td>0.050</td>
<td>0.005</td>
<td>0.100</td>
<td>0.050</td>
<td>0.002</td>
<td>0.05</td>
<td>2.000</td>
</tr>
<tr>
<td>Secondary MCL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic Life, Acute</td>
<td>0.360</td>
<td>0.004 - 0.009</td>
<td>1.7-3.1</td>
<td>0.082 -0.2</td>
<td>0.0024</td>
<td></td>
<td>0.0041-0.0134</td>
</tr>
<tr>
<td>Aquatic Life, Chronic</td>
<td>0.190</td>
<td>0.001 - 0.002</td>
<td>0.21-0.37</td>
<td>0.003 - 0.008</td>
<td>0.000012</td>
<td></td>
<td>0.00012</td>
</tr>
<tr>
<td>Estimated Detection Level (33% confidence)</td>
<td>0.49</td>
<td>0.02</td>
<td>0.03</td>
<td>0.50</td>
<td>0.0017</td>
<td>0.65</td>
<td>0.27</td>
</tr>
</tbody>
</table>
Table 2.5-4 (continued). Toxicity Characteristic Leaching Procedure for dump samples from the minor properties in the Coeur d'Alene River basin surrounding the Coeur d'Alene mining district.

<table>
<thead>
<tr>
<th>FIELD NO.</th>
<th>REMARKS</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>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>K08079707</td>
<td>Unnamed prospect (K08079706), dump</td>
<td>0.500</td>
<td>0.031</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.100</td>
<td>8.3</td>
</tr>
<tr>
<td>K08079710</td>
<td>Wolfson Mine (SP-274), dump</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.100</td>
<td>8.0</td>
</tr>
<tr>
<td>K08129704</td>
<td>Rockford Group (SP-252), dump</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.940</td>
<td>7.2</td>
</tr>
<tr>
<td>K08189702</td>
<td>North Fork Mine (SP-77), Adit #2, dump</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.800</td>
<td>8.4</td>
</tr>
<tr>
<td>K08199712</td>
<td>Unnamed prospect (K08199711), dump</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.500</td>
<td>7.0</td>
</tr>
<tr>
<td>K08269702</td>
<td>Highlands Aurora (WL-145), dump</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3.200</td>
<td>8.1</td>
</tr>
<tr>
<td>K08269705</td>
<td>Belmont-Banner Mine (WL-143), dump</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3.500</td>
<td>8.1</td>
</tr>
<tr>
<td>K08269707</td>
<td>California Gulch Prospect (WL-94), dump</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.400</td>
<td>7.6</td>
</tr>
<tr>
<td>K09169705</td>
<td>Unnamed prospect (K09169704), dump</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3.800</td>
<td>8.4</td>
</tr>
<tr>
<td>R0729702</td>
<td>Unnamed prospect (SP-132), dump</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.100</td>
<td>7.6</td>
</tr>
<tr>
<td>R08129703</td>
<td>Helvetia Prospect (WL-461), dump</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.600</td>
<td>6.1</td>
</tr>
<tr>
<td>R72397003</td>
<td>Red Horse Mine (SP-134), dump</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.800</td>
<td>5.5</td>
</tr>
<tr>
<td>K10059803</td>
<td>Sonora Prospect (WL-272), dump</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>85.000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.000</td>
<td></td>
</tr>
</tbody>
</table>

**EXPLANATION**

- Blank space equals no analysis
- Not Detected is ND
- Below Detection Limit is ---

**WATER QUALITY STANDARDS**

<table>
<thead>
<tr>
<th></th>
<th>As (mg/L)</th>
<th>Cd (mg/L)</th>
<th>Cr (mg/L)</th>
<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>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary MCL</strong></td>
<td>0.050</td>
<td>0.005</td>
<td>0.100</td>
<td>0.050</td>
<td>0.002</td>
<td>0.05</td>
<td></td>
<td>2.000</td>
</tr>
<tr>
<td><strong>Secondary MCL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Aquatic Life, Acute</strong></td>
<td>0.360</td>
<td>0.004 - 0.009</td>
<td>1.7-3.1</td>
<td>0.082 -0.2</td>
<td>0.0024</td>
<td></td>
<td>0.0041-0.0134</td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic Life, Chronic</strong></td>
<td>0.190</td>
<td>0.001 - 0.002</td>
<td>0.21-0.37</td>
<td>0.003 - 0.008</td>
<td>0.000012</td>
<td></td>
<td>0.00012</td>
<td></td>
</tr>
<tr>
<td><strong>Estimated Detection Level (33% confidence)</strong></td>
<td>0.49</td>
<td>0.02</td>
<td>0.03</td>
<td>0.50</td>
<td>0.0017</td>
<td>0.65</td>
<td>0.27</td>
<td>0.05</td>
</tr>
</tbody>
</table>
3.0 MINE DESCRIPTIONS – COEUR D'ALENE BASIN, SECONDARY PROPERTIES

3.87 UNNAMED PROSPECT (Site No. SP-397)

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

The prospect is on the slope northeast of Beauty Creek in the SW¼ of the SW¼ of section 7, T. 49 N., R. 2 W., on the Mt. Coeur d'Alene 7.5-minute quadrangle (Figure 3.87-1). Access from Highway 97 at Beauty Bay is southeast on Beauty Creek Road about ¼ mile to Forest Service Road 1575.1, southeast on FS Road 1575.1 about 1 mile to FS Road 1575-C, and then south on FS Road 1575-C about ¼ mile. The prospect is along FS Road 1575-C just past its junction with FS Road 1575-L and is on Forest Service land.

This property was tentatively identified in the field as the Royal Prospect, although no evidence of the adits and dumps described by Anderson (1940) was found at this location. It is possible that construction of logging roads in the area has obliterated them. However, the geology of this prospect (within the Beauty Creek stock) does not match that of the principal tunnel of the Royal (which is in the Prichard Formation and intruded by younger dike rocks). Based on the inability to correlate the features of this prospect with the known aspects of the Royal Prospect, this site has been assigned a new site number. There are no good descriptions of the two short tunnels on the Royal, and the possibility cannot be excluded that this site may be related to one of those adits.

3.87.2 Geologic Features (Figure 2.2-1a)

This site is in a porphyritic quartz monzonite stock of probable Tertiary age (Anderson, 1940).

3.87.3 Site History

Nothing is known of the history of this site.

3.87.4 Environmental Conditions

3.87.4.1 Site Features

This prospect was visited by William Rember on July 30, 1997. A video segment describing the property, which is referred to as the Royal Prospect (SP-104), is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 00:01:17-00:03:25). Documenting photographs are Roll R2, frames 21-22.

The prospect consists of a caved shaft and a small waste dump just above FS Road 1575-C (Figure 3.87-2). The shaft is a conical depression about 10 feet in diameter and 10 feet deep. The sloughed sides are covered with brush, and a large tree, which leans toward the depression, is growing on the northeast edge of the shaft. The waste dump is about 20 feet long, 5 feet wide,
and 10 feet thick. The base of the dump is at road level. Vuggy, milky-white quartz vein fragments containing a considerable amount of sulfide mineralization are scattered on the dump. The disturbed area covers less than 0.25 acre.

3.87.4.2 Sample Locations

3.87.4.2.1 Solid Samples
No waste dump samples were collected at this site.

3.87.4.2.2 Water Samples
No water samples were collected at this site.

3.87.5 Structures
No structures are present at this site.

3.87.6 Safety

Although the original depth of the shaft is not known, it appears to be completely caved. The sides of the 10-foot-deep pit are not overly steep and should not constitute a hazard.
Figure 3.87-1. Topographic map of Unnamed Prospect SP-397, Kootenai County, Idaho (U.S. Geological Survey Mt. Coeur d'Alene 7.5-minute topographic map).
Figure 3.87-2. Sketch of Unnamed Prospect SP-397.
3.88 KING SOLOMON PROSPECT (Site No. SP-108)

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

The King Solomon Prospect is along the north side of Fourth of July Creek about 400 yards upstream from the State of Idaho Highway garages at the mouth of Curran Creek in the SE¼ of the SE¼ of section 17, T. 49 N., R. 1 W., on the Rose Lake 7.5-minute quadrangle (Figure 3.88-1). The prospect can be reached on foot from the State Highway garage parking area off of Interstate 90 (Figure 3.88-2). The property appears to be on a small sliver of private land, possibly one patented claim, surrounded by Forest Service land.

3.88.2 Geologic Features (Figure 2.2-1a)

According to Anderson (1940, p. 61-62):

The average strike of this vein is about N. 35° W. and its dip is 30° N.E. It is about parallel to the Osburn fault which lies a half a mile to the northeast. The vein may be traced for several hundred yards by the alignment of surface cuts along its outcrop. In some of the cuts it is about 4 feet thick, but is reported to be 16 feet where cut by two of the diamond drill holes.

Most of the vein consists of massive, white, coarsely granular quartz. In some of the surface cuts the quartz shows leached vugs, but just beneath the surface it contains scattered crystals and grains of coarse arsenopyrite and smaller amounts of irregular grains and granules of pyrite, galena, and sphalerite. These sulphides appear to be grouped in very irregular bunches and to be distributed very sporadically. Nowhere did these sulphides make up as much as 5 per cent of the filling. The thinly bedded Prichard “slate” which forms the wall rock has been partly changed to a chloritic schist.

3.88.3 Site History

Anderson (1940, p. 61) gives the following account of activity at the King Solomon:
The vein has been exposed in a series of cuts along the ridge and has been prospected at depth by diamond drilling. Encouragement afforded by two of the diamond drill cores prompted the owners of the property, the King Solomon Mining and Milling Company, to erect a compressor building and [to] construct camp in the Fourth of July Canyon during the summer of 1937 and to begin a long crosscut about 50 feet above the canyon floor. An older 600-foot adit on the opposite side of the ridge was abandoned. The company was incorporated September 6, 1935, and controls two claims.

King Solomon Mining & Milling leased the property in 1935 with an option to purchase it. In 1935 the mine had one 175-foot tunnel and one shaft. The following year, the property was reported to have a single 615-foot tunnel. Nothing else is known of the history of this property.
3.88.4 Environmental Conditions

3.88.4.1 Site Features

The King Solomon was visited by William Rember on July 28, 1997. A video segment describing the prospect, which is referred to as the King Tut, is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 00:03:30-00:05:27). Documenting photographs are Roll R2, frames 11-12.

The caved adit at the King Solomon is marked by a shallow trough on the hillside and a swampy area at the site of the portal. The waste dump (Figure 3.88-3) is spread along the hillside for a length of 100 feet. However, it is only about 5 feet wide and 10 feet thick and does not extend to the creek. Some corrugated metal is on the dump near the adit, and downed electrical wires are in the vicinity of the dump. The disturbed area covers less than 0.25 acre.

3.88.4.2 Sample Locations

3.88.4.2.1 Solid Samples
No waste dump samples were collected at this site.

3.88.4.2.2 Water Samples
No water samples were collected at this site.

3.88.5 Structures
No structures were found at this site.

3.88.6 Safety
No safety problems were identified at this site.
Figure 3.88-1. Topographic map of the King Solomon Prospect, Kootenai County, Idaho (U.S. Geological Survey Rose Lake 7.5-minute topographic map).
Figure 3.88-2. Sketch of the King Solomon Prospect.
Figure 3.88-3. King Solomon waste dump above Forth of July Creek, with power lines almost on the dump surface.
3.89 MAINE-STANDARD MINE (Site No. SP-115)

3.89.1 Site Location and Access (Figures 2.1-1a)

The Maine-Standard Mine is about ½ mile north of the Charles Dickens Mine on an overgrown road in the SW¼ of the SE¼, section 24, T. 49 N., R. 3 E., on the Kellogg East 7.5-minute quadrangle (Figure 3.89-1). Access from the end of the Moon Creek Road at the Charles Dickens Mine is by foot up the overgrown road. This property is on Forest Service land.

3.89.2 Geologic Features (Figure 2.2-1a)

The Maine-Standard is in the upper Prichard Formation near the contact with the Burke Formation (Griggs, 1973).

3.89.3 Site History

The Maine-Standard Mining Company, Ltd., was organized in 1907. By 1913, the company held five unpatented claims. Activity on the property consisted mainly of assessment work. In 1924, the mine had three tunnels, two that were 100 feet long and one that was 900 long. By 1926, the workings were described as one 1,200-foot tunnel. The company forfeited its corporate charter in 1941.

3.89.4 Environmental Conditions

3.89.4.1 Site Features

This property was visited by Earl Bennett on July 18, 1997. No video was taken at this site. Documenting photographs are Roll B1, frames 21-22.

This property consists of a possible caved adit and a waste dump that, if both actually exist, have been caught up in a minor landslide and are no longer obvious. The remains of two dilapidated cabins (Figure 3.89-2) are about 100 feet below the possible dump.

3.89.4.2 Sample Locations

3.89.4.2.1 Solid Samples

No waste dump samples were collected at this site.

3.89.4.2.2 Water Samples

No water samples were collected at this site.

3.89.5 Structures

The two collapsed cabins below this prospect are the only structures at this site.
3.89.6 Safety

There are no safety hazards at this site.
Figure 3.89-1. Topographic map of the Maine-Standard Mine, Shoshone County, Idaho (U.S. Geological Survey Kellogg East 7.5-minute topographic map).
Figure 3.89-2. Remains of one of the two dilapidated cabins at the Maine-Standard Mine.
3.90 SILVER DALE AND BIG HILL MINE, Recent Prospects (Site No. SP-277)
Alternate name—Silver Belt Prospect.

3.90.1 Site Location and Access (Figure 2.1-1b)
A prospect trench was found along the pack trail on Silver Mountain Ski Area property near the center of the SE¼ of section 19, T. 48 N., R. 3 E., on the Polaris Peak 7.5-minute quadrangle (Figure 3.90-1). The easiest access is to ride the Silver Mountain Gondola to the top, then hike south along the pack trail about ¾ mile.

Although this site was referred to in the field notes and on the videotape as the Silver Belt Prospect, it is in fact part of the Silver Dale and Big Hill Mine (Section A, subsection 3.8). Both names refer to the same block of claims, which was held at different times by different companies. The work described here is some of the more recent prospecting done by Silver Belt Mines, Inc.

3.90.2 Geologic Features (Figure 2.2-1a)
This prospect is in a wedge of Revett Formation between the Midland and Placer Creek faults (Hobbs and others, 1965, Plate 2).

3.90.3 Site History
This property was purchased from the original locator by the Silver Dale & Big Hill Mining Company (see Section A, subsection 3.8.3). Silver Belt Lead Mines, Inc., was incorporated in 1947 and purchased the property around 1950. Only assessment work was done on the property. In 1961, the company's name was changed to Silver Belt Mines, Inc. In February 1966, the company signed an exploration agreement with Sunshine Mining, under which Sunshine was to explore the property. This agreement remained in effect until about 1974.

3.90.4 Environmental Conditions

3.90.4.1 Site Features
This prospect was visited by John Kauffman on August 13, 1997. No video or photographs were taken at this site.

All that could be found at this site was a trench about 50 feet long, 6-8 feet wide, and 6 feet deep. Construction of the ski area may have removed other prospects. The pit has small fir saplings 4-10 feet tall growing from the floor. The disturbed area is less than 0.1 acre.

3.90.4.2 Sample Locations

3.90.4.2.1 Solid Samples
No waste dump samples were collected at this site.
3.90.4.2.2 Water Samples
   No water samples were collected at this site.

3.90.5 Structures
   No structures are present at this site.

3.90.6 Safety
   No safety problems exist at this site.
Figure 3.90-1. Topographic map of the recent prospects at the Silver Dale and Big Hill Mine, Shoshone County, Idaho (U.S. Geological Survey Polaris Peak 7.5-minute topographic map).
3.91 WOLFSON MINE (Site No. SP-274)

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

The Wolfson Mine is on the west side of Big Creek in the NE¼ of the NW¼ of section 27, T. 48 N., R. 3 E., on the Polaris Peak 7.5-minute quadrangle, just within Forest Service land (Figure 3.91-1). The National Forest boundary is less than 500 feet north of the mine. Forest Service Road 2354 follows along the east side of Big Creek. The creek must be waded to reach the mine.

3.91.2 Geologic Features (Figure 2.2-1a)

The Wolfson is in quartzite of the Revett Formation. The adit was driven westward along a steeply dipping fault parallel to the Big Creek Fault. After about 1,000 feet, the adit turns southwest to intersect an east-west trending vein (Hobbs and others, 1965, Plate 2, site #47)

3.91.3 Site History

Nothing is known of the history of this site.

3.91.4 Environmental Conditions

3.91.4.1 Site Features

The Wolfson Mine was visited by John Kauffman on August 7, 1997. A video segment describing the property is on the Coeur d’Alene Basin (Secondary Properties) Videotape (Tape 4, index 00:06:12-00:11:40). Documenting photograph is K5:4.

The caved adit is about 40 feet above creek level on the west side of Big Creek. Little evidence of the workings remains on the sloughed, brushy slope. The waste dump (about 55 feet long, 35 feet wide, and 40 feet thick) extends out from the adit to the creek (Figure 3.91-2). The surface of the dump is overgrown with brush and trees up to 1 foot (or more) in diameter. The base of the dump has been slightly eroded by Big Creek. However, the dump material is essentially all quartzite, and it is unoxidized and contains little mineralization.

3.91.4.2 Sample Locations

3.91.4.2.1 Solid Samples

A sample of the waste dump (K08079710) was collected down the face of the dump near the area eroded by Big Creek.

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>Location</th>
<th>Analyzed (Yes/No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>K08079710</td>
<td>Wolfson Mine waste dump</td>
<td>Yes</td>
</tr>
</tbody>
</table>
3.91.4.2.2 Water Samples
No water samples were collected at this site.

3.91.4.2.3 Analytical Results
Solid Samples (Table 2.5-3 and 2.5-4)

Compared to background levels (Tables 1.5-3 and 1.5-4) and environmental standards (Table 1.5-5), all values for sample K08079710 are at or below expected values in the element screen. In the TCLP for metals screen, values are below detection limits for all relevant metals.

3.91.5 Structures
No structures were found at this site.

3.91.6 Safety
No safety hazards were identified at this site.
Figure 3.91-1. Topographic map of the Wolfson Mine, Shoshone County, Idaho (U.S. Geological Survey Polaris Peak 7.5-minute topographic map).
Figure 3.91-2. View down the face of the waste dump with Big Creek flowing along the base of the dump (Roll K5, fame #4).
3.92 IDAHO LEADVILLE PROSPECT, Prospect Pits (Site No. SP-287)

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

The prospect pits associated with the Idaho Leadville Prospect are on the ridge about 1 mile southeast of Polaris Peak in the NE¼ of the NW¼ of section 36, T. 48 N., R. 3 E., on the Polaris Peak 7.5-minute quadrangle. Additional prospects, probably associated with this claim group, are located to the northeast in the SE¼ of section 25, T. 48 N., R. 3 E. (Figure 3.92-1). Access to the area is by following Forest Service Road 330 southeast from the mouth of Big Creek to about 1 mile past Polaris Peak. The prospect cuts are all on Forest Service land.

This site is identified as the Fahey Group in the field notes and on the videotape. However, information in IGS's mineral property files indicates that the Fahey claims were to the north of the Idaho Leadville Group. Most of the prospect pits discussed here are on the Idaho Leadville property (Figure 3.92-2), although some of them may have been part of adjacent holdings (unidentified on Figure 3.92-2). In addition, the adit discussed in section 3.47 (in Section B of this volume) is also part of the Idaho Leadville.

3.92.2 Geologic Features (Figure 2.2-1a)

These prospects are in the St. Regis and lower Wallace formations (Hobbs and others, 1965, Plate 3).

3.92.3 Site History

The Idaho Leadville Mines Company, a Washington corporation, filed to do business in Idaho in 1914. By 1917, the property consisted of twelve claims and had about 925 feet of development (most of it in a single tunnel). A second tunnel, supposedly 1,500 feet below the first, was started in 1922 but abandoned in 1925 because a tunnel at the same level on the adjoining First National property appeared to be above the ore zone. However, a third tunnel was started the following year, and 500 feet of open cuts were made to locate the veins on the surface.

In 1928, the officers of Idaho Leadville began organizing the Idaho Silver Magnet Mines Co. to take over the operation of three groups of claims—the Idaho Leadville Group, the adjoining Magnet claims, and the Independent Group (which may be the claims labeled as the “Fahey Group” in Figure 3.92-2; Thomas Fahey was the president of Idaho Leadville Mines). After several years of unsuccessful effort, Idaho Silver Magnet Mines Co. apparently changed its name to Idaho Leadville Mines Company in 1937.

Development work on the property consisted mostly of assessment work performed by Idaho Leadville's stockholders. In 1937, the property had five tunnels (ranging in length from 30 to 900 feet) and one shaft (described as a “surface winze”). The Idaho Leadville Mines Company forfeited its corporate charter in 1937 or 1942. No reinstatement of the charter was reported.
between those two dates, leaving open the question of the status of the company during those years. After a long break, Idaho Leadville's corporate charter was reinstated in 1963. The company was apparently exploring claims in the vicinity of its earlier holdings.

3.92.4 Environmental Conditions

3.92.4.1 Site Features

The prospect pits associated with the Idaho Leadville Prospect were visited by William Rember on August 13, 1997. A video segment describing the property, identified as the Fahey Group, is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 01:30:28-01:32:32). Documenting photographs are Roll R5, frames 4-5.

This site consists of a large number of prospect cuts and trenches along the ridge 1 mile south of Polaris Peak and along a four-wheel-drive road that extends along the slope to the northeast. At least 17 prospects, marked by “X” symbols, are shown on the topographic map. Of the five trenches examined, none had any obvious mineralization. Although not all of the trenches were examined, the total disturbed area for all the prospects is probably several acres.

3.92.4.2 Sample Locations

3.92.4.2.1 Solid Samples

No waste dump samples were collected at this site.

3.92.4.2.2 Water Samples

No water samples were collected at this site.

3.92.5 Structures

No structures are present at this site.

3.92.6 Safety

There are no safety hazards at this site.
Figure 3.92-1. Topographic map of the prospect pits associated with the Idaho Leadville Prospect, Shoshone County, Idaho (U.S. Geological Survey Polaris Peak 7.5-minute topographic map).
Figure 3.92-2. Claim map of the Polaris Peak area (Metsker, n.d.).
3.93 BONANZA GOLD, INC. (Site No. SP-309)

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

The Bonanza Gold Prospect is near the top of the peak 1 mile north-northwest of Elsie Lake, near the west edge of the SW¼ of the NW¼ of section 12, T. 47 N., R. 3 E., on the Polaris Peak 7.5-minute quadrangle (Figure 3.93-1). Access is on Forest Service Road 2354 along Big Creek to the saddle between the Big Creek drainage and Elsie Lake, then north on a four-wheel-drive road about ¼ mile to the prospects. The site is on Forest Service land.

3.93.2 Geologic Features (Figure 2.2-1a)

This property is in rocks of the Striped Peak Formation (Griggs, 1973).

3.93.3 Site History

This prospect was held by Bonanza Gold, Inc. (incorporated in 1961), from 1972 until at least 1979.

3.93.4 Environmental Conditions

3.93.4.1 Site Features

The Bonanza Gold Prospect was visited by William Rember on August 6, 1997. A video segment describing the property is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 00:12:05-00:15:39). Documenting photographs are Roll R3, frames 18-24.

The prospect consists of 4 trenches along the ridge south of the peak (Figure 3.93-2). Trench 1, the one nearest the top of the peak, is 130 feet long and on the east side of the four-wheel-drive road. Trench 2 is 150 feet long, with a slight dog-leg, and is also on the east side of the road. Trench 3 (Figure 3.93-3) is 250 feet long. The road crosses this trench near its center. Trench 4, the lowermost, is 280 feet long. It is on the east side of the road and curves slightly to the northeast. A few seams of vuggy, milky-white quartz are present in the trenches. The bottoms of most of the trenches are carpeted with mountain hemlock saplings. The disturbed area covers 1-1.5 acres.

3.93.4.2 Sample Locations

3.93.4.2.1 Solid Samples

No waste dump samples were collected at this site.

3.93.4.2.2 Water Samples

No water samples were collected at this site.
3.93.5 **Structures**
No structures are present at this site.

3.93.6 **Safety**
There are no safety hazards at this site.
Figure 3.93-1. Topographic map of the Bonanza Gold Prospect, Shoshone County, Idaho (U.S. Geological Survey Polaris Peak 7.5-minute topographic map).
Figure 3.93-2. Sketch of the Bonanza Gold Prospect.
Figure 3.93-3. Trench #3 at the Bonanza Gold Prospect, looking northeast (Roll R3, frame #20).
3.94 CAPITOL SILVER-LEAD NO. 1 (Site No. WL-176)
Alternate name—Capital Silver-Lead No. 1.

3.94.1 Site Location and Access (Figures 2.1-1c)

The Capitol Silver-Lead No. 1 adit is on the south side of Capital Hill in the NW¼ of the NE¼ of section 32, T. 49 N., R. 4 E., on the Osburn 7.5-minute quadrangle (Figure 3.94-1). The main adit is on a short, overgrown spur road below one of the switchbacks where Forest Service Road 2322 goes to the top of Capital Hill. Access from Osburn is on the Twomile Creek road to Twomile Saddle, north on FS Road 424 from Twomile Saddle to the junction with FS Road 2322, and then northwest on FS Road 2322 to the spur road. The mine is on Forest Service land.

3.94.2 Geologic Features (Figure 2.2-1b)

The Capitol Silver-Lead No. 1 is in the Revett Quartzite. The rocks in this area strike northwest and dip moderately northeast (Hobbs and others, 1965, Plate 3)

3.94.3 Site History

The Capitol Hill Mining Company was incorporated in 1944. In early 1946, the company changed its name to Silver Capitol Mining Company, and in December, the name was changed yet again, this time to Capitol Silver-Lead Mining Company. In 1946, the company built a compressor house and change room. In addition, two compressors, a battery locomotive, and other equipment was installed. The property consisted of seventy-five unpatented claims. By the following year, total development on the property was about 3,800 feet of workings, including three tunnels (1,700 feet, 800 feet, and 1,300 feet long). After the initial activity, little work seems to have been done on the property. Most of the claims were dropped in late 1953 or early 1954, but the company continued to hold fourteen claims until about 1956. Capitol forfeited its corporate charter in 1966. In 1983, Coeur Explorations, Inc., completed 636 feet of diamond drilling at the Capitol Silver property. Work continued in 1984. Coeur spent $113,555 on the property in 1983, but reduced this amount in 1984.

3.94.4 Environmental Conditions

3.94.4.1 Site Features

The Capitol Silver-Lead No. 1 was visited by Earl Bennett on July 24, 1997. No video was taken at this site. Documenting photographs are Roll B3, frames 23-25.

The property consists of a completely caved, dry adit and a waste dump. The adit was driven northward into the steep hillside that has collapsed along the trace of the adit for 20-30 feet (Figure 3.94-2). The waste dump (Figure 3.94-3) is 50 feet long and 30 feet wide. It extends down the steep slope for about 200 feet, but the actual thickness is considerably less. A brushy access road leading down to the prospect can be seen in Figure 3.94-3.
3.94.4.2 Sample Locations

3.94.4.2.1 Solid Samples
   No waste dump samples were collected at this site.

3.94.4.2.2 Water Samples
   No water samples were collected at this site.

3.94.5 Structures
   There are no structures at this site.

3.94.6 Safety
   There are no safety hazards at this site.
Figure 3.94-1. Topographic map of the Capitol Silver-Lead No. 1, Shoshone County, Idaho (U.S. Geological Survey Osburn 7.5-minute topographic map).
Figure 3.94-2. Collapsed hillside above the caved adit at the Capitol Silver-Lead No. 1 (Roll B3, frame #23).

Figure 3.94-3. Bare surface of the waste dump at the Capitol Silver-Lead No. 1. The brushy access road can be seen going up the hill away from the dump (Roll B3, frame #24).
3.95 SILVER MINT(?) (Site No. WL-204)

This possible prospect is in the vicinity of Unnamed Prospects Site Nos. K09169704 and K09169706 (section 3.58 in Section C of this report). Either (or both) of these unnamed sites may be the Silver Mint, and this prospect could be related to those sites. The Silver Mint Mining company had fifteen claims in this area in 1925, but available information is not adequate to locate the company's workings precisely.

3.95.1 Site Location and Access (Figures 2.1-1c)

A possible prospect, which might be the location of the Silver Mint, was found along the south side near the head of the East Fork of Twomile Creek, in the SW¼ of the NE¼ of section 4, T. 48 N., R. 4 E., on the Osburn 7.5-minute quadrangle (Figure 3.95-1). The prospect can be reached on foot on a partially overgrown spur road that follows the East Fork from the Twomile Creek road. This spur also connects with the Twomile Creek road near Twomile Saddle. The prospect is on Forest Service land.

3.95.2 Geologic Features (Figure 2.2-1b)

This site appears to be in either quartzite of the Revett Formation or Cretaceous granitic rocks near the Blackcloud fault (Hobbs and others, 1965, Plate 3).

3.95.3 Site History

The Silver Mint Mining Company, Ltd., was incorporated in 1925 but forfeited its corporate charter later in the year. Silver Mint had a three-year option on the Belmont property and held additional claims in the immediate area. In 1925, Silver Mint's property had 2,600 feet of workings and two tunnels (1,500 and 1,100 feet long).

3.95.4 Environmental Conditions

3.95.4.1 Site Features

This site was visited by Earl Bennett on July 24, 1997. No video or photographs were taken at this site.

A road cut or a possible adit was noted along the road at this site. There was a possible small dump across the road from the cut. The road crosses the dump, if indeed this is a dump.

3.95.4.2 Sample Locations

3.95.4.2.1 Solid Samples

No waste dump samples were collected at this site.
3.95.4.2.2 Water Samples
   No water samples were collected at this site.

3.95.5 Structures
   There are no structures at this site.

3.95.6 Safety
   There are no safety hazards at this site.
Figure 3.95-1. Topographic map of the Silver Mint Prospect, Shoshone County, Idaho (U.S. Geological Survey Osburn 7.5-minute topographic map).
3.96 BEST CHANCE(?) (Site No. WL-206)

3.96.1 Site Location and Access (Figures 2.1-1c)

This site, which may be a prospect, is in the upper reaches of the East Fork of Twomile Creek in the NW¼ of the NE¼ of section 4, T. 48 N., R. 4 E., on the Osburn 7.5-minute quadrangle (Figure 3.96-1). This location is on the slope north of the East Fork. It is just off Forest Service Road 271 about ¾ mile west of Twomile Saddle on a somewhat brushy jeep road and is on Forest Service land.

3.96.2 Geologic Features (Figure 2.2-1b)

This site appears to be in either quartzite of the Revett Formation or Cretaceous granitic rocks near the Blackcloud fault (Hobbs and others, 1965, Plate 3).

3.96.3 Site History

The Best Chance Mining Co., Ltd., was incorporated in 1909. By 1913, Best Chance held twelve claims and the property had 1,635 feet of workings. By the following year, the company reported a 2,300-foot tunnel on the property. By 1917, the property had two tunnels and about 4,000 feet of workings. In 1922, when the company forfeited its corporate charter, the property had about 6,000 feet of workings, including two tunnels (5,000 and 300 feet long).

McKeesport Lead Mining Company, Ltd. (incorporated in 1924), acquired the Best Chance, but failed to do its assessment work. McKeesport forfeited its corporate charter the following year.

3.96.4 Environmental Conditions

3.96.4.1 Site Features

This possible prospect was visited by Earl Bennett on July 24, 1997. No video was taken at this site. Documenting photographs are Roll B4, frames 5-6.

This site consists of a seep and an overgrown, brushy flat area that could be an old dump, although there is no sign of an adit. A seep, flowing at less than 0.5 gallons per minute, may well be a spring rather than water from a caved adit. No other indications of workings were found in the immediate vicinity. The "disturbed" area is less than 0.5 acre.

3.96.4.2 Sample Locations

3.96.4.2.1 Solid Samples

No waste dump samples were collected at this site.
3.96.4.2.2 Water Samples
No water samples were collected at this site.

3.96.5 Structures
There are no structures at this site.

3.96.6 Safety
There are no safety hazards at this site.
Figure 3.96-1. Topographic map of the Best Chance Prospect, Shoshone County, Idaho (U.S. Geological Survey Osburn 7.5-minute topographic map).
3.97 BELMONT MINE (Site No. WL-213)
Alternate names—Empress Group; Sanwood Group; Sanwood-Empress; Silver Basin
Consolidated Mining Co.; Silver Mint Mining Co., Ltd.

3.97.1 Site Location and Access (Figures 2.1-1c)

What is believed to be the Belmont Mine is located north of Dago Peak near the head of the East Fork of Twomile Creek, along the south edge of the SW¼ of the NE¼ of section 4, T. 48 N., R. 4 E., on the Osburn 7.5-minute quadrangle (Figure 3.97-1). This site, which is on an overgrown spur road connecting to Forest Service Road 424, is on Forest Service land.

3.97.2 Geologic Features (Figure 2.2-1b)

This site appears to be in Cretaceous granitic rocks near the intersection of the Blackcloud and Twomile faults. Quartzite of the Revett Formation is in fault contact with the intrusive rocks (Hobbs and others, 1965, Plate 3).

3.97.3 Site History

The Belmont Mining Company, Ltd., was incorporated in 1900. By 1913, the company had nine claims with a total of 1,178 feet of workings. By 1922, the property consisted of fourteen claims. The workings totaled about 3,000 feet, including four tunnels (1,200 feet, 110 feet, 250 feet, and 1,000 feet) and one vertical shaft (18 feet deep). The tunnels were on both sides of the East Fork of Twomile Creek. Belmont appears to have done little more than assessment work after the early 1920s. In 1930, the controlling interest in the property was optioned to the Silver Basin Consolidated Mining Company (reorganized in 1930 from the Silver Cable Consolidated Mining Company). During the year, Silver Basin did a little work on its property, which included two other groups of claims in addition to the Belmont. After 1930 or 1931, the property appears to have been idle. Silver Basin forfeited its corporate charter in 1935 and Belmont forfeited its charter in 1938.

3.97.4 Environmental Conditions

3.97.4.1 Site Features

This site was visited by Earl Bennett on July 24, 1997. No video was taken at this site. Documenting photographs are Roll B4, frames 3-4.

At this site, there is a cut bank about 20 feet long that could be an adit which has been caved for many years. A minor seep near the cut forms a wet area, but no water is flowing. The area is overgrown, and there is no sign of a dump. This may be a small tunnel associated with other prospects along the East Fork of Twomile Creek (Site Nos. K09169704 and K09169706 (section 3.58 in Section C of this report); and Silver Mint, Site No. 204 (section 3.95)). The disturbed area at this site covers less than 0.5 acre.
3.97.4.2 Sample Locations

3.97.4.2.1 Solid Samples
   No waste dump samples were collected at this site.

3.97.4.2.2 Water Samples
   No water samples were collected at this site.

3.97.5 Structures
   There are no structures at this site.

3.97.6 Safety
   There are no safety hazards at this site.
Figure 3.97-1. Topographic map of the Belmont Mine, Shoshone County, Idaho (U.S. Geological Survey Osburn 7.5-minute topographic map).
3.98 BURKE PROSPECT (Site No. WL-220)

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

This prospect is north of State Highway 4 about 3 miles east of the town of Burke in the NE¼ of the NW¼ of section 12, T. 48 N., R. 5 E., on the Burke 7.5-minute quadrangle (Figure 3.98-1). Access from Highway 4 is via a jeep road that crosses Canyon Creek. The adit is on the north side of the creek and about 25 feet above where the road crosses the creek. The toe of the waste dump is along the north edge of the road. This prospect is on a block of patented claims surrounded by Forest Service land.

3.98.2 Geologic Features (Figure 2.2-1b)

The rocks in the vicinity of this prospect are quartzite and interbedded argillite units of the St. Regis Formation on the east limb of the Granite Peak Syncline. The bedding strikes northwest and dips moderately to the southwest (Hobbs and others, 1965, Plate 5).

3.98.3 Site History

The Burke Mining Co., Ltd., was organized in 1902. By 1914, the company owned twelve patented claims. In 1922, the mine had two tunnels (125 and 1,000 feet long) and the total development was 1,125 feet. All of this work was apparently done before 1916. The company forfeited its corporate charter in 1938.

3.98.4 Environmental Conditions

3.98.4.1 Site Features

The prospect was visited by John Kauffman on August 20, 1977. No video was taken of this prospect. Documenting photographs are Roll K8, frames 5-6.

This prospect is barely visible in the thick brush on the slope above the jeep road. Only the toe of the waste dump can be seen where it reaches the road. The adit is caved and densely overgrown with brush. Ore car rails protrude through the brush across the surface of the waste dump. The size of the dump was difficult to determine because of the brush, but it is estimated to be 40 feet long, 15 feet wide, and 20 feet thick. It consists mostly of coarse fragments of dark gray argillite. No sulfides or oxidized material was noted. The second adit reported for Burke Prospect was not found during this visit. The disturbed area covers less than 0.25 acre.

3.98.4.2 Sample Locations

3.98.4.2.1 Solid Samples

No waste dump samples were collected at this site.
3.98.4.2.2 Water Samples
   No water samples were collected at this site.

3.98.5 Structures
   No structures are present at this site.

3.98.6 Safety
   No safety concerns were identified at this prospect.
Figure 3.98-1. Topographic map of the Burke Prospect, Shoshone County, Idaho (U.S. Geological Survey Burke 7.5-minute topographic map).
3.99 TEMPLE MINING COMPANY, LTD. (Site No. WL-228)

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

This prospect is north of State Highway 4, about 3 miles east of the town of Burke in the SW¼ of the SE¼ of section 1, T. 48 N., R. 5 E., on the Burke 7.5-minute quadrangle (Figure 3.99-1). Access from Highway 4 is via jeep road north across Canyon Creek, then east along the jeep road that parallels the creek for several hundred yards. The road cuts across the face of the dump for the lower adit. The prospect is on a block of patented claims surrounded by Forest Service land.

3.99.2 Geologic Features (Figure 2.2-1b)

This prospect is in quartzite units of the St. Regis Formation on the east limb of the Granite Peak Syncline. The bedding strikes northwest and dips moderately to the southwest (Hobbs and others 1965, Plate 5, unnamed adit).

3.99.3 Site History

The Temple Mining Co., Ltd., was organized in 1906. By 1916, the property consisted of six patented claims, but the company never reported the extent of the workings. Temple forfeited its corporate charter in 1918.

3.99.4 Environmental Conditions

3.99.4.1 Site Features

This prospect was visited by John Kauffman on August 20, 1997. No video was taken at this site. Documenting photographs are Roll K8, frames 7-13.

The prospect consists of two caved adits driven northward into the hillside. Adit 1 (Figure 3.99-2), which is the lower adit, is about 20 feet above the access road. The waste dump for Adit 1 is split into two levels by the access road. The main (upper) portion is 60 feet long, 30 feet wide, and 20 feet thick (Figure 3.99-3). The lower portion (Figure 3.99-4) is 45 feet long (along the road), 20 feet wide, and 20 feet down the face.

Adit 2 is the upper adit. It is about 100 feet higher, and slightly east of, Adit 1 on an open talus slope. The waste dump for Adit 2 (Figures 3.99-5 and 3.99-6) is smaller than the dump at Adit 1 and is about 30 feet long, 10 feet wide, and 40 feet down the face. The width across the widest portion of the base is about 40 feet. Minor amounts of scrap metal, pipe, and other debris are around both dumps.

The disturbed area at this site covers about 0.5 acre.
3.99.4.2 Sample Locations

3.99.4.2.1 Solid Samples
   No waste dump samples were collected at this site.

3.99.4.2.2 Water Samples
   No water samples were collected at this site.

3.99.5 Structures

The decayed remains of a collapsed cabin are just east of Adit 1 on the surface of the dump (Figure 3.99-2).

3.99.6 Safety
   No safety concerns were identified at this site.
Figure 3.99-1. Topographic map of the Temple Mining Company Prospect, Shoshone County, Idaho (U.S. Geological Survey Burke 7.5-minute topographic map).
Figure 3.99-2. Caved Adit 1, looking north. A slight depression in the talus marks the location of the adit (Roll K8, frame #7).
Figure 3.99-3. Looking south across the surface of the upper level of the waste dump for Adit 1 (Roll K8, frame #9).

Figure 3.99-4. Looking south from the upper to the lower level of the waste dump for Adit 1. The access road crossing the center of the frame is at the base of the upper level (Roll K8, frame #10).
Figure 3.99-5. Looking northeast from Adit 1 at the waste dump for Adit 2 (small mound with several trees in the upper part of the frame) (Roll K8, frame #8).
Figure 3.99-6. Looking south across the surface of the waste dump for Adit 2 (Roll K8, frame #12).
3.100 HOMESTAKE SILVER-LEAD PROSPECT (Site No. WL-240)

3.100.1 Site Location and Access (Figures 2.1-1c)

This prospect is ½ mile west of Military Gulch in the NW¼ of the NE¼ of section 11, T. 48 N., R. 5 E., on the Burke 7.5-minute quadrangle (Figure 3.100-1). It is at the west end of a burn and can be reached by a fire road that goes west from the Military Gulch Road. The prospect is in an area of mixed patented claims and Forest Service land. It is uncertain on whose land the prospect is located.

3.100.2 Geologic Features (Figure 2.2-1b)

This adit was driven into quartzite of the Burke Formation in an area where the bedrock is covered by glacial and glaciofluvial deposits (Hobbs and others, 1965, Plate 5).

3.100.3 Site History

Nothing is known of the history of this site.

3.100.4 Environmental Conditions

3.100.4.1 Site Features

This property was visited by Earl Bennett on August 13, 1997. No video or photographs were taken at this site.

This prospect consists of a probable caved adit and a small, overgrown waste dump. Water flows out of the dump and follows a ditch on the north side of the road and power line. The disturbed area is less than 0.25 acre.

3.100.4.2 Sample Locations

3.100.4.2.1 Solid Samples

The dump is considered insignificant because of its small volume.

3.100.4.2.2 Water Samples

Although water was flowing out of the dump, no samples were collected at this site.

3.100.5 Structures

There are no structures at this site.

3.100.6 Safety

There are no safety hazards at this site.
Figure 3.100-1. Topographic map of the Homestake Silver-Lead Prospect, Shoshone County, Idaho (U.S. Geological Survey Burke 7.5-minute topographic map).
3.101 BURKE PROPERTY PROSPECT (Site No. WL-277)

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

The Burke Property Prospect is north-northeast of Upper Glidden Lake near the Idaho-Montana border in the S½ of the NW¼ of the SE¼ of section 8, T. 48 N., R. 6 E., on the Thompson Pass 7.5-minute quadrangle (Figure 3.101-1). The adit is in a northwest-flowing tributary drainage to the creek that drains Upper Glidden Lake and is accurately located on the topographic map. Access to the prospect is via Primary Forest Route 7623 (State Highway 4 until about 1 mile east of Burke) to Cooper Pass on the state border, then by foot or trail bike on Forest Service Trail 135 to Upper Glidden Lake. The trail passes several hundred feet above the prospect. At the north end of the lake, a poorly defined bulldozer trail can be followed to the prospect, which is on Forest Service land.

3.101.2 Geologic Features (Figure 2.2-1b)

This property is near the contact between the Burke and Prichard formations (Harrison and others, 1986).

3.101.3 Site History

This prospect is part of a consolidation of several older properties in this area. According to U.S. Geological Survey information, in the mid-1970s the Burke Mining Company (incorporated in 1967) and the Eastern Star Mining Company, Ltd. (incorporated in 1906), were exploring a group of 202 claims in the area around Upper and Lower Glidden Lakes and Glidden Pass.

3.101.4 Environmental Conditions

3.101.4.1 Site Features

The Burke Property Prospect was visited by John Kauffman on August 29, 1997. A video segment describing the prospect is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 00:18:05-00:22:10). Documenting photographs are Roll K10, frames 9-12.

The adit at this prospect, driven southeast into the hillside, is caved. Only a slight depression on the slope indicates its presence. Rails extend from under the caved material (Figure 3.101-2) and across the waste dump (Figures 3.101-3 and 3.101-4). The dump is about 90 feet long, varies in width from 10-30 feet, and is about 25 feet thick (Figure 3.101-5). Waste rock consists mostly of dark gray argillite with a minor amount of sheared white quartz scattered on the dump surface. A few pieces of scrap metal and crushed metal stovepipe can be found on the dump. A few small conifers are growing on the dump surface, but the sides are bare. The disturbed area covers about 0.5 acre.
3.101.4.2 Sample Locations

3.101.4.2.1 Solid Samples
   No waste dump samples were collected at this site.

3.101.4.2.2 Water Samples
   No water samples were collected at this site.

3.101.5 Structures
   No structures are present at this site.

3.101.6 Safety
   No safety hazards were identified at this prospect.
Figure 3.101-1. Topographic map of the Burke Property Prospect, Shoshone County, Idaho (U.S. Geological Survey Thompson Pass 7.5-minute topographic map).
Figure 3.101-2. Looking southeast at the caved adit of the Burke Property Prospect. Ore car rails can be seen in the lower right of the frame (Roll K10, frame #9).
Figure 3.101-3. Looking northwest across the surface of the waste dump. The ore car rails and some flattened stovepipe can be seen on the surface (Roll K10, frame #11).

Figure 3.101-4. Looking down the northeast face of the dump (Roll K10, frame #12).
Figure 3.101-5. Looking northwest at the entire waste dump from the access road west of the adit (Roll K10, frame #10).
3.102 CHAMPION GOLD AND SILVER MINE (Site No. WL-282)
Alternate names—Silver Champion, Silver Treasure, Lucky Strike Silver, Lucky, Coeur
d’Alene Champion.

3.102.1 Site Location and Access (Figures 2.1-1c)

This prospect is at the end of the road that goes up Military Gulch in the NE¼ of the NE¼ of
section 13, T. 48 N., R. 5 E., on the Burke 7.5-minute quadrangle (Figure 3.102-1). Access to
the Military Gulch road is from the Canyon Creek Road, which follows the canyon east from
Burke. There is a prospect symbol on the topographic map at this site. The property is either on
a thin sliver of patented claims or on Forest Service land.

3.102.2 Geologic Features (Figure 2.2-1b)

The mine is in the Revett Quartzite near the northwest-striking Champion fault (Hobbs and
others, 1965, Plate 5).

3.102.3 Site History

Coeur d’Alene Champion Mining Company acquired this property in 1905. By 1913, the
company held seventeen claims. At that time, the workings included: No. 1 tunnel, a 168-foot
drift on the ledge with a 35-foot crosscut; No. 2 tunnel, a 350-foot crosscut to the ledge with 350
feet of drifting on the ledge and a 35-foot crosscut; No. 3 tunnel, which was 1,440 feet long,
mostly along the ledge; and about 300 feet of other short tunnels. The No. 2 tunnel was said to
intersect the Burke formation “at depth of about 250 feet.” The mine had a blacksmith shop, a
cookhouse, and a bunkhouse, all apparently built after the previous buildings were destroyed by
the 1910 fire. Work for the next few years concentrated on the No. 3 tunnel, which was 2,700
feet long in 1919. By 1922, the mine also had a 35-foot vertical shaft and a fourth tunnel (in a
different area), which was 200 feet long. In 1933, the property had 4,500 feet of total
development. The four tunnels were 170 feet, 700 feet, 3,400 feet, and 185 feet long. The mine
was idle from 1932 until 1937, when some repairs were started. A little development was done in
1938-1939, but Coeur d'Alene Champion forfeited its corporate charter in 1940.

In 1970, some drilling and soil sampling for silver were done on the property. In 1982, Champion
Gold and Silver, Inc. (incorporated in 1967), reached a 10-year agreement with Pacific Coast
Mines, Inc., to explore the property. Pacific Coast controlled a large block of claims in the area
and was believed to be exploring for stratabound copper-silver deposits similar to the Troy
Project in Montana.
3.102.4 Environmental Conditions

3.102.4.1 Site Features

This prospect was visited by Earl Bennett on August 13, 1997. A video segment describing the property is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 00:22:13-00:25:21). Documenting photographs are Roll B11, frames 3-5.

At this site, a large volume of water (10-20 gallons per minute) is flowing from a caved adit. The adit is very difficult to see (Figure 3.102-2) and is caved for about 75 feet, forming a trough on the slope. The water from the adit flows along the southeast side of the dump but does not reach the main creek. The dump is fairly large, about 86 feet long, 80 feet wide, and 80 feet thick (Figure 3.102-3). There are numerous trees growing around the edge of the dump. The disturbed area is about 1.0 acre.

3.102.4.2 Sample Locations

3.102.4.2.1 Solid Samples

No waste dump samples were collected at this site.

3.102.4.2.2 Water Samples

A sample (B8139705) was collected from the adit discharge.

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<th>pH</th>
<th>Flow (gpm)</th>
<th>Analyzed (Yes/No)</th>
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<td>7.0</td>
<td>10-20</td>
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3.102.4.2.3 Analytical Results

Water Samples

Sample B8139705 does not exceed any water quality standards.

3.102.5 Structures

There are no structures at this site.

3.102.6 Safety

There are no safety hazards at this site.
Figure 3.102-1. Topographic map of the Champion Gold and Silver Mine, Shoshone County, Idaho (U.S. Geological Survey Burke 7.5-minute topographic map).
Figure 3.102-2. Brushy trough on the slope (through the center of the photograph) formed by the caved adit at the Champion Gold and Silver Mine (Roll B11, frame #4).

Figure 3.102-3. Large, relatively open waste dump at the Champion Gold and Silver Mine (Roll B11, frame #5).
3.103 SILVERORE-INSPIRATION (Site No. WL-292)
Alternate name—Inspiration-Silverore.

3.103.1 Site Location and Access (Figures 2.1-1c)

The Silverore-Inspiration Mine is northeast of Osburn, Idaho, on the east side of Dago Peak Gulch in the SW¼ of the SW¼ of section 9, T. 48 N., R. 4 E., on the Osburn 7.5-minute quadrangle (Figure 3.103-1). The adit is marked on the topographic map. Access is east along the road that follows the north side of the South Fork of the Coeur d'Alene River from a junction at the Twomile Creek Road. At Nuckols Gulch, the mine is reached by following Nuckols Gulch to Dago Peak Gulch (the west fork of Nuckols Gulch). The mine is about ¾ mile up Dago Peak Gulch on private land within the National Forest.

3.103.2 Geologic Features (Figure 2.2-1b)

The adit was driven into rocks of the Prichard Formation, through the Blackcloud fault, and into the Revett and St. Regis formations and Cretaceous intrusive rocks (Hobbs and others, 1965, Plate 3). Fragments of syenite from the Gem Stocks are on the waste dump.

3.103.3 Site History

Little is known of the early history of this property. In 1947, Silverore Mines, Inc. (incorporated in 1946), controlled a block of fifteen claims. This property had a total of 3,200 feet of workings, and the No. 1 tunnel was 2,500 feet long. Silverore had a 50/50 joint operating agreement with Inspiration Lead Company (incorporated in 1929), who controlled seventeen claims adjacent to the Silverore claims. The two companies put up buildings, rebuilt the road, and purchased a considerable amount of equipment in the first year of their agreement. The following year, the companies did 2,421 feet of work on the tunnel. Work in 1949 included another 2,246 feet of development in the Silverore claims and 615 feet of work in the Inspiration claims (apparently an extension from the Silverore tunnel). In 1950, the No. 1 tunnel was almost 7,000 feet long and total development on the property was 7,383 feet. Development continued for the next few years, with most of the work on the Inspiration claims.

In 1951, the agreement between the two companies was modified to give Inspiration two-thirds ownership of the properties and Silverore the rest. In 1954, the total development on the property was 11,858 feet, including 8,688 feet of tunnels, crosscuts, and drifts and 100 feet of raises. The amount of work slowed in the next few years. In 1957, ten of the claims were patented but, except for assessment, the property was idle after that.

In 1978, Sunshine Mining started drilling a 2,000-foot hole on the property. Hecla Mining Company did some drilling in 1989.
3.103.4 Environmental Conditions

3.103.4.1 Site Features

The Silverore-Inspiration Mine (Figure 3.103-2) was visited by Earl Bennett on July 23, 1997. A video segment describing the property is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 00:25:25-00:31:45). Documenting photographs are Roll B3, frames 13-17.

The portal is made of heavy timbers, and there is an armored lock guard on the secured gate at the adit. However, the opening could probably be entered by squeezing through a space over the top of the gate (Figure 3.103-3). The mine has a large dump, about 400 feet long, that has been bulldozed and seeded with grasses (Figure 3.103-4). The north end of the dump is about 135 feet wide and the south end is about 32 feet wide. The dump is 5 to 6 feet thick on the north end but thickens to over 100 feet on the south end. The creek is on the west side of the dump, but there is little sign of any erosion. There is no garbage on this dump, but some pipe is in the stream below the dump. The disturbed area is about 3-4 acres.

3.103.4.2 Sample Locations

3.103.4.2.1 Solid Samples

No waste dump samples were collected at this site.

3.103.4.2.2 Water Samples

Sample B7239702 was collected downstream from the mine by the yellow-painted iron gate on the access road.

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</tbody>
</table>

3.103.4.2.3 Analytical Results

Water Samples

Sample B7239702 does not exceed any of the water quality standards.

3.103.5 Structures

There are no structures at this site.
3.103.6 Safety

Except for the narrow crawl space at the top of the portal, the adit is well secured. The property is on private land and should not impact Forest Service land nearby.
Figure 3.102-1. Topographic map of the Silverore-Inspiration Mine, Shoshone County, Idaho (U.S. Geological Survey Osburn 7.5-minute topographic map).
Figure 3.103-2. Sketch of the Silverore-Inspiration prospect site.
Figure 3.103-3. Heavy timbers and armored gate at the portal at the Silverore-Inspiration (Roll B3, frame #13).
Figure 3.103-4. Open, leveled waste dump at the Silverore-Inspiration prospect. The dump has been seeded with grasses (Roll B3, frame #14).
3.104 COEUR D'ALENE SILVER-LEAD MINING CO. (Site No. WL-417)

3.104.1 Site Location and Access (Figures 2.1-1d)

A minor prospect, on patented claims that may be the Coeur d'Alene Silver-Lead Mining Co. group or part of the Silver Cable property, was found on the Idaho-Montana border in partial section 25, T. 48 N., R. 6 E., on the Lookout Pass 7.5-minute quadrangle (Figure 3.104-1). The site is reached by a spur road that heads north from the Old Mullan Road at Mullan Pass. The patented claims are surrounded by Forest Service land.

3.104.2 Geologic Features (Figure 2.2-1b)

This prospect is in rocks of either the Burke or Revett formations near an east-west-trending fault associated with the Osburn fault (Harrison and others, 1986).

3.104.3 Site History

This property was owned by Coeur d'Alene Silver Lead Mining Company, a South Dakota corporation that filed to do business in Idaho in 1916, although the company had been active before that. In 1913, the prospect consisted of twelve claims, with a total development of 1,500 feet. Patent applications were pending on six of the twelve claims and were granted by 1916. The property was idle from 1916 to 1920. Only minor work was done in 1921, after which time the only activity was assessment work on the one unpatented claim (out of seven). In 1922, the property had two tunnels, which were 963 and 410 feet long. The company forfeited its corporate charter in 1922, but continued to file reports until 1930.

3.104.4 Environmental Conditions

3.104.4.1 Site Features

This prospect was visited by Earl Bennett on August 7, 1997. No video was taken at this site. Documenting photographs are Roll B9, frames 19-20.

This property consists of several prospect trenches (Figures 3.104-2 and 3.104-3). The main trench is about 100 feet in length. The total disturbed area is less than 1.0 acre.

3.104.4.2 Sample Locations

3.104.4.2.1 Solid Samples

No waste dump samples were collected at this site.

3.104.4.2.2 Water Samples

No water samples were collected at this site.
3.104.5 Structures
   There are no structures at this site.

3.104.6 Safety
   There are no safety hazards at this site.
Figure 3.104-1. Topographic map of the Coeur d’Alene Silver-Lead Mining Co. prospect, Shoshone County, Idaho (U.S. Geological Survey Lookout Pass 7.5-minute topographic map).
Figure 3.104-2. One of the prospect trenches at the Coeur d’Alene Silver-Lead Mining Co. prospect (Roll B9, frame #19).

Figure 3.104-3. Another trench at the Coeur d’Alene Silver-Lead Mining Co. prospect (Roll B9, frame #20).
3.105 CARNEY PROSPECT (Site Nos. WL-450 and B8059706) and WILLOW CREEK PROSPECT (WL-452)
Alternate names—Atlas-X.

3.105.1 Site Location and Access (Figures 2.1-1d)
This property is east of the East Fork of Willow Creek. Several workings are located in the SW¼ of the NE¼ and in the NW¼ of the SE¼ of section 1, T. 47 N., R. 5 E., on the Mullan 7.5-minute quadrangle (Figure 3.105-1). Site No. B8059706 (Carney No. 3) is just south of the Willow Creek Road along a jeep road that follows the East Fork of Willow Creek; it is shown by an adit symbol on the topographic map. The road along the East Fork crosses a large dump in the vicinity of another adit symbol on the topographic map; this is probably the Willow Creek tunnel (Site No. WL-452). An overgrown spur road, turning off the jeep road at the first major switchback, goes uphill about ¼ mile to a caved adit and waste dump (Site No. B8069704) that is probably the Carney No. 2 (Hobbs and others, 1965, Plate 5, #50). All of the workings are on a strip of patented claims surrounded by Forest Service land.

There is some confusion about the locations of the Carney adits because of a discrepancy between the geologic map and the map of the mine workings on Plate 5 of Hobbs and others (1965). The Carney No. 1 (#51) and the Carney No. 2 (#50) are shown correctly on both maps. However, the Carney No. 3 (#49) is shown correctly as the adit at elevation 4040 on the geologic map and incorrectly as the adit at elevation 4175 on the map of the mine workings. Unfortunately, the map of the mine workings was used to identify the sites in the field. As a result, Site B8059706 was identified on the field notes and the videotape as an unnamed adit that was probably part of the Carney Group when, in fact, it is the Carney No. 3. The site that was correlated with the Carney No. 3 in the field notes and on the videotape is a caved tunnel that is identified as the Willow Creek tunnel on maps in the IGS Atlas Mine property file. The Willow Creek Prospect is site No. WL-452.

3.105.2 Geologic Features (Figure 2.2-1b)
The Carney and Willow Creek prospects are in quartzite of the St. Regis Formation (Hobbs and others, 1965, Plate 5).

3.105.3 Site History
The Carney Copper Company, Ltd., was organized in 1906. In 1909, the Carney was described as one of the more extensively developed properties in the area. The total development in 1913 was about 2,000 feet. Two years later, the property was said to have about 3,000 feet of workings (this increase considerably exceeds the amount of development done during those two years). The mine produced a small shipment of copper ore in 1916. In 1921, total development was reported as 2,400 feet. The following year, the mine had three tunnels (500 feet, 1,500 feet, and 554 feet long) and one 15-foot vertical shaft. In 1923, the company claimed 5,000 feet of total development.
In January 1928, Carney Copper changed its name to the Atlas X Company. At the same time, Atlas Mining Company (incorporated in 1924) acquired options on most of the company's stock. Atlas was planning to explore the Carney property through its 7,026-foot Atlas tunnel. Soon after the name change, Atlas X filed for patents on the company's claims. In 1930, the three tunnels were 500 feet, 1,600 feet, and 1,050 feet long, and total development was 3,150 feet of workings. Sometime before September 1938, the nine claims of the Carney Group were patented. In 1940, Atlas X merged with Atlas Mining. Little work seems to have been done on the Carney claims after the property was acquired by Atlas Mining.

The Willow Creek Mining Company was apparently incorporated in Washington in 1915, but did not register to do business in Idaho until 1924. At that time, the mine had one 1,450-foot tunnel. A second tunnel was started in 1924, but it was abandoned when it was about 30 feet long. In 1931, the main tunnel was 1,800 feet long and three other tunnels, all 30 feet or shorter, had also been started. Development continued until at least 1936. Around 1939, W. Earl Greenough (president and manager of the Atlas Mining Company and manager of the adjacent Atlas X property) became president of Willow Creek. Except for assessment, the company appears to have been idle since then. Willow Creek forfeited its corporate charter in 1954, and the property was acquired by Idaho Willow Creek Mining Company (incorporated in 1952).

3.105.4 Environmental Conditions

3.105.4.1 Site Features

The Carney workings were visited by Earl Bennett on August 5 and 6, 1997. A video segment describing the property is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 00:32:07-00:36:06). Documenting photographs are Roll B7, frames 20-21 (Willow Creek tunnel; Site No. WL-452), and Roll B8, frames 1-2 (Carney No. 3, or Site No. B8059706) and 23-25 (Carney No. 2).

The road along the East Fork of Willow Creek crosses a large waste dump, although no adit is obvious at the site (Figures 3.105-2 and 3.105-3). This is described as the Willow Creek tunnel (Site No. WL-452) on maps in the IGS Atlas Mine property files. The disturbed area covers about 1.0 acre.

One or two other caved adits (Site No. B8059706) were found along Willow Creek road north of the East Fork of Willow Creek. This site is the Carney No. 3, which is about 1/4 mile north of the Willow Creek tunnel. One of the adits has a minor trickle of water seeping from beneath the caved debris. The waste dump (Figures 3.105-4 and 3.105-5) measures 30 feet long, 15 feet wide, and 15 feet thick. The disturbed area covers less than 0.25 acre.

At the Carney No. 2 (Figure 3.105-6), the adit is caved and has a minor seep that flows into a small wetland and disappears. A scarp marks the adit location on the hillside (Figure 3.105-7). The dump is relatively large, about 75 feet long and 32 feet wide, and extends down the slope 75
feet (Figures 3.105-8 and 3.105-9). It consists of red and black rock with some sulfides. A
prospect pit and small dump are located near the northeast end of the dump. The disturbed area
covers about 0.5 acre.

Carney No. 1 (Hobbs and others, 1965, Plate 5, #51) was not found.

3.105.4.2 Sample Locations

3.105.4.2.1 Solid Samples
    No waste dump samples were collected at this site.

3.105.4.2.2 Water Samples
    No water samples were collected at this site.

3.105.5 Structures
    There are no structures at this site.

3.105.6 Safety
    There are no safety hazards at this site.
Figure 3.105-1. Topographic map of the Carney and Willow Creek Prospects, Shoshone County, Idaho (U.S. Geological Survey Mullan 7.5-minute topographic map).
Figure 3.105-2. First of a two-frame panorama of the Willow Creek adit (Site No. WL-452). The access road crosses the large, sparsely vegetated waste dump. No adit is obvious, although a sloughed area is visible on the slope (Roll B7, frame #20).

Figure 3.105-3. Second of a two-frame panorama of the Willow Creek adit (Site No. WL-452) (Roll B7, frame #21).
Figure 3.105-4. Looking at the end of the waste dump at the Carney No. 3 (Site No. B8059704) (Roll B8, frame #1).

Figure 3.105-5. Upper surface (left edge of photograph) and nose of the waste dump at the Carney No. 3 (Site No. B8059704) (Roll B8, frame #2).
Figure 3.105-6. Sketch map of the Carney No. 2 site.
Figure 3.105-7. Scarp on the hillside marking the location of the Carney No. 2 adit (Roll B8, frame #23).

Figure 3.105-8. Surface of the waste dump at the Carney No. 2 (Roll B8, frame #24).
Figure 3.105-9. Looking down the face of the waste dump at the Carney No. 2 (Roll B8, frame #25).
3.106 SILVER CROWN GROUP (Site No. WL-451)

3.106.1 Site Location and Access (Figure 2.1-1d)

The Silver Crown Group prospect is south of the saddle on the north end of Striped Peak in the SW¼ of the SE¼ of section 6, T. 47 N., R. 4 E., on the Wallace 7.5-minute quadrangle (Figure 3.106-1). Access is southeast on Forest Service Road 330 from the mouth of Big Creek past Polaris Peak to the Striped Peak trail, which is on the ridge to the south of Lost Lake. The prospect is along the Striped Peak trail about ¼ mile south of FS Road 330 and is on Forest Service land.

3.106.2 Geologic Features (Figure 2.2-1b)

The Silver Crown Group is in dolomitic quartzite, arenaceous dolomite, and argillite of the upper Wallace Formation near the crest of the East Fork anticline (Hobbs and others, 1965, Plate 3).

3.106.3 Site History

Nothing is known of the history of this site.

3.106.4 Environmental Conditions

3.106.4.1 Site Features

The Silver Crown Group was visited by William Rember on August 12, 1997. A video segment describing the prospect is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 00:36:11-00:38:06). Documenting photographs are Roll R4, frames 21-22.

This prospect consists of two trenches just west of the Striped Peak trail (Figure 3.106-2). The upper trench is about 50 feet long and 5-7 feet deep. It has an axis that strikes N. 35° E. The lower trench, about 50-70 feet west of the upper trench, is 75 feet long and also about 5-7 feet deep; its axis is N. 50° E. There is no evidence of mineralization in either of the trenches. Both are carpeted with mountain hemlock seedlings. The disturbed area is less than 0.25 acre.

3.106.4.2 Sample Locations

3.106.4.2.1 Solid Samples

No waste dump samples were collected at this site.

3.106.4.2.2 Water Samples

No water samples were collected at this site.

3.106.5 Structures

No structures are present at this site.
3.106.6 Safety
   There are no safety hazards at this site.
Figure 3.106-1. Topographic map of the Silver Crown Group, Shoshone County, Idaho (U.S. Geological Survey Wallace 7.5-minute topographic map).
Figure 3.106-2. Sketch of the Silver Crown Group Prospect.
Figure 3.106-3. Upper trench at the Silver Crown Group, looking northeast (Roll R4, frame #21).
3.107 PIONEER MINES, INC., PROSPECT (Site No. WL-453)

3.107.1 Site Location and Access (Figure 2.1-1d)

The Pioneer Mines Prospect is on the slope west of the upper reaches of an east-flowing tributary of the West Fork of Placer Creek on the northern edge of the NE¼ of the SE¼ of section 5, T. 47 N., R. 4 E., on the Wallace 7.5-minute quadrangle (Figure 3.107-1). Access to the prospect is southeast on Forest Service Road 330 from the mouth of Big Creek past Polaris Peak to FS Road 2376. FS Road 2376 goes southeast past Lost Lake and Striped Peak, then turns northeast to Mt. Pulaski. At the saddle on the southwest end of Mt. Pulaski, an old four-wheel-drive road goes south down the slope about ½ mile, where a brush-covered road leads down several hundred yards to the property. The prospect is within, but near the boundary of, Forest Service land.

3.107.2 Geologic Features (Figure 2.2-1b)

This prospect is in dolomitic quartzite, calcareous quartzite, and argillite of the lower Wallace Formation near the crest of the East Fork anticline (Hobbs and others, 1965, Plate 3).

3.107.3 Site History

Pioneer Mines, Inc., was organized in 1967. The company seems to have done only prospecting and assessment work on its property.

3.107.4 Environmental Conditions

3.107.4.1 Site Features

The Pioneer Mines, Inc., Prospect was visited by William Rember on August 12, 1997. A video segment describing the prospect is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 00:38:09-00:40:28). Documenting photograph is Roll R4, frame 23.

The prospect consists of an “L”-shaped trench or series of trenches cut into the slope (Figure 3.107-2). Each leg of the “L” is about 150 feet in length and up to 30 feet wide. Water flowing in the northeast-trending leg (Figure 3.107-3) is the source of this tributary drainage of the West Fork of Placer Creek. The southeast-trending leg is dry. The entire trench system is overgrown with alder thickets and other brushy vegetation. No mineralization was found. The disturbed area is less than 0.5 acre.

3.107.4.2 Sample Locations

3.107.4.2.1 Solid Samples

No dump samples were collected at this site.
3.107.4.2.2 Water Samples

A water sample (R08129701) was collected from the stream in the northeast-trending trench.

<table>
<thead>
<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>
</tr>
</thead>
<tbody>
<tr>
<td>R08129701</td>
<td>Pioneer Mines trench</td>
<td>52</td>
<td>42</td>
<td>6.79</td>
<td>5</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3.107.4.2.3 Analytical Results

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

In the dissolved metals screen, Sample R08129701 is at the lower threshold of the Aquatic Life Chronic standard for copper. The total recoverable metals screen does not exceed any water quality standards.

3.107.5 Structures

No structures are present at this site.

3.107.6 Safety

There are no safety hazards at this prospect.
Figure 3.107-1. Topographic map of the Pioneer Mines, Inc., Prospect, Shoshone County, Idaho (U.S. Geological Survey Wallace 7.5-minute topographic map).
Figure 3.107-3. Water flowing down the northeast-trending trench at the Pioneer Mines, Inc., Prospect (Roll R4, frame #23).
3.108 IDAHO COPPER PROSPECT (Site No. WL-456)

3.108.1 Site Location and Access (Figures 2.1-1d)

This prospect is at the end of the West Fork of Willow Creek Road in the SE¼ of the SW¼ of section 1, T. 47 N., R. 5 E., on the Mullan 7.5-minute quadrangle (Figure 3.108-1). Access from the Willow Creek Road is up the road that follows the West Fork of Willow Creek. Only a trail continues beyond the mine. This prospect is on a block of patented claims surrounded by Forest Service land.

3.108.2 Geologic Features (Figure 2.2-1b)

This prospect is in quartzite of the St. Regis Formation (Hobbs and others, 1965, Plate 5).

3.108.3 Site History

The Idaho Copper Mining Company, Ltd., was organized in 1906. By 1913, the company owned three patented claims. The mine was idle at that time, and it remained idle. The extent of the workings was never reported.

3.108.4 Environmental Conditions

3.108.4.1 Site Features

This property was visited by Earl Bennett on August 5, 1997. A video segment describing the prospect is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 00:40:31-00:42:51). Documenting photographs are Roll B7, frames 10-11.

Although two adits are shown on the Forest Service engineering topographic map, only one was found. The adit is completely caved (Figure 3.108-2) and is marked by old timbers. The dump is very steep and is close to, but does not reach, the creek. It is about 75 feet long, 20 feet wide, and 60 feet thick on the nose (Figure 3.108-3). There are rails near the base of the dump. The disturbed area covers less than 0.5 acre.

3.108.4.2 Sample Locations

3.108.4.2.1 Solid Samples

No waste dump samples were collected at this site.

3.108.4.2.2 Water Samples

No water samples were collected at this site.
3.108.5 Structures
There are no structures at this site.

3.108.6 Safety
There are no safety hazards at this site.
Figure 3.108-1. Topographic map of the Idaho Copper Prospect, Shoshone County, Idaho (U.S. Geological Survey Mullan 7.5-minute topographic map).
Figure 3.108-2. Shallow trough marking the location of the caved adit at the Idaho Copper Prospect (Roll B7, frame #10).

Figure 3.108-3. Long, narrow surface of the waste dump at the Idaho Copper Prospect (Roll B7, frame #11).
3.109 HELVETIA PROSPECT (Site No. WL-461)

3.109.1 Site Location and Access (Figure 2.1-1d)

The Helvetia Prospect is on the south side of the creek in the upper part of the West Fork of Placer Creek in the NE¼ of the NE¼ of section 8, T. 47 N., R. 4 E., on the Wallace 7.5-minute quadrangle (Figure 3.109-1). Access is similar to that of the Pioneer Mines, Inc., Prospect. From the saddle south of Mt. Pulaski, a four-wheel-drive road goes south to the Pioneer Mines Prospect. From there, the Helvetia Prospect can be reached on foot by going south down the ridge to the bottom of the West Fork drainage. The prospect is on the south side of the creek. A pack trail up the West Fork of Placer Creek also passes the site on the north side of the creek. The Helvetia is just within the National Forest boundary on Forest Service land.

3.109.2 Geologic Features (Figure 2.2-1b)

This prospect is in the dolomitic quartzite, calcareous quartzite, and argillite of the lower Wallace Formation in an area where the bedrock is overlain by glacial and glaciofluvial deposits (Hobbs and others, 1965, Plate 3).

3.109.3 Site History

The Helvetia Mining company was organized in 1907. In 1914, the property had 190 feet of development. In 1923, the property had four tunnels (237 feet, 70 feet, 60 feet, and 12 feet). After several years of doing little more than assessment work, Helvetia forfeited its corporate charter in 1928.

3.109.4 Environmental Conditions

3.109.4.1 Site Features

The Helvetia was visited by William Rember on August 12, 1997. A video segment describing the prospect is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 01:28:14-01:30:24). Documenting photographs are Roll R4, frames 24-25.

The prospect consists of a caved adit with a small waste dump on the south side of the creek, and several small, shallow pits up the ridge on the north side of the creek. A large rock marks the adit location (Figure 3.109-2) and a minor seep is present in front of the caved rubble. The waste dump is 40 feet long, 20 feet wide, and 7 feet thick, and it impinges slightly on the creek. The disturbed area is less than 0.25 acre.
3.109.4.2 Sample Locations

3.109.4.2.1 Solid Samples

No sulfide mineralization and no oxidized material was found on the dump. Therefore only one sample (R08129703) was collected.

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>Location</th>
<th>Analyzed (Yes/No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R08129703</td>
<td>Helvetia waste dump</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3.109.4.2.2 Water Samples

Two water samples were collected. One (R08129702) was collected upstream from the waste dump and the other (R08129704) was collected downstream from the waste dump.

<table>
<thead>
<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>
</tr>
</thead>
<tbody>
<tr>
<td>R08129702</td>
<td>Helvetia, upstream</td>
<td>30</td>
<td>48</td>
<td>7.7</td>
<td>4 feet wide, 2 feet deep</td>
<td>no</td>
</tr>
<tr>
<td>R08129704</td>
<td>Helvetia, downstream</td>
<td>34</td>
<td>48</td>
<td>7.8</td>
<td>---</td>
<td>no</td>
</tr>
</tbody>
</table>

3.109.4.2.3 Analytical Results

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

Compared to expected background values (Tables 1.5-3 and 1.5-4) and environmental standards (Table 1.5-5), sample R08129703 has elevated values of arsenic (150 ppm), cadmium (3 ppm), copper (30 ppm), and lead (67 ppm) in the element screen. In the TCLP for metals screen, none of the elements show significant leaching.

Water Samples

Because none of the values in the TCLP for metals screen are significant, the upstream and downstream water samples were not analyzed.
3.109.5 Structures

The collapsed remains of a log cabin (Figure 3.109-3) were found on the north side of the creek across from the caved adit and waste dump.

3.109.6 Safety

No safety hazards were found at this site.
Figure 3.109-1. Topographic map of the Helvetia Prospect, Shoshone County, Idaho (U.S. Geological Survey Wallace 7.5-minute topographic map).
Figure 3.109-2. Large rock in the trough formed by the caved adit at the Helvetia Prospect (Roll R4, frame #24).
Figure 3.109-3. Collapsed log cabin on the north side of the West Fork of Placer Creek at the Helvetia Prospect (Roll R4, frame #25).
3.110 NONPAREIL GROUP (Site No. WL-465)

3.110.1 Site Location and Access (Figures 2.1-1d)

The Nonpareil Group is on the east side of the summit of West Willow Peak in the NW¼ of the NE¼ of section 11, T. 47 N., R. 5 E., on the Mullan 7.5-minute quadrangle (Figure 3.110-1). The prospect can be reached from one of the trails that leads to Stevens Peak and is on Forest Service land.

3.110.2 Geologic Features (Figure 2.2-1b)

The Nonpareil Group is in the thinly laminated argillite of the upper St. Regis Formation near the Reindeer fault (Hobbs and others, 1965, Plate 5).

3.110.3 Site History

The Nonpareil Copper Mining Company was incorporated in 1906. By 1917, three of the company's seven claims were patented. By 1922, the unpatented claims had been abandoned. At that time, the property had two tunnels (380 and 100 feet long), although no work had been done since 1916. The company forfeited its corporate charter in 1936. The charter was reinstated in 1945 and the name was changed to National Silver-Lead Mining Company the following year. However, it is doubtful that National had anything to do with the Nonpareil Prospect.

3.110.4 Environmental Conditions

3.110.4.1 Site Features

This prospect was visited by Earl Bennett on August 6, 1997. No video or photographs were taken at this site.

This prospect consists of several pits and trenches, or cuts, on the east slope and the summit of West Willow Peak. No adits or waste dumps were found. The disturbed area is less than 0.1 acre.

3.110.4.2 Sample Locations

3.110.4.2.1 Solid Samples

No waste dump samples were collected at this site.

3.110.4.2.2 Water Samples

No water samples were collected at this site.
3.110.5 Structures
    There are no structures at this site.

3.110.6 Safety
    There are no safety hazards at this site.
Figure 3.110-1. Topographic map of the Nonpareil Group, Shoshone County, Idaho (U.S. Geological Survey Mullan 7.5-minute topographic map).
3.111 TILLICUM PROSPECT (Site No. WL-468)

3.111.1 Site Location and Access (Figure 2.1-1d)

The Tillicum Prospect is about 3 miles south of the town of Wallace on the west side of Placer Creek, near the center of the dividing line between the NE and the SE quarters of the NW¼ of section 11, T. 47 N., R. 4 E., on the Wallace 7.5-minute quadrangle (Figure 3.111-1). Access is via the Placer Creek Road. The prospect is on the opposite side of the canyon from and about 100 yards south of Red Oak Creek. The creek must be waded to reach the site. The prospect appears to be on Forest Service land, although some blocks of private land are very close to this location.

3.111.2 Geologic Features (Figure 2.2-1b)

The Tillicum Prospect is in a sliver of St. Regis Formation that is between the Placer Creek and Big Creek faults (Hobbs and others, 1965, Plate 4).

3.111.3 Site History

Nothing is known of the history of this site. It should be noted that this site may not be the Tillicum Prospect. Chesson and others (1984) place the Tillicum Prospect at this location, based on U.S. Bureau of Mines information. However, all available USBM information gives a different location for the Tillicum Prospect. It is not known if there are two prospects with this name.

3.111.4 Environmental Conditions

3.111.4.1 Site Features

The Tillicum Prospect was visited by William Rember on August 6, 1997. A video segment describing the prospect is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 00:43:32-00:45:57). Documenting photographs are Roll R4, frames 4-6.

The prospect consists of a caved adit and a moderate-sized waste dump (Figure 3.111-2). The framed portal and gate are still intact (Figure 3.111-3), but the adit is completely caved and filled with coarse rock rubble (Figure 3.111-4). The waste dump (150 feet long, 30 feet wide, and 15 feet thick) extends out from, and to the north of, the adit. Ore car rails extend from under the caved adit rubble to the north end of the waste dump. The surface of the dump is covered with a thicket of Engelmann spruce. Scattered pieces of siderite were found on the dump, but no sulfide mineralization was noted. The disturbed area covers less than 0.25 acre.

3.111.4.2 Sample Locations

3.111.4.2.1 Solid Samples

No waste dump samples were collected at this site.
3.111.4.2.2 Water Samples
   No water samples were collected at this site.

3.111.5 Structures
   No structures were found at this site.

3.111.6 Safety
   No safety hazards were identified at this site.
Figure 3.111-1. Topographic map of the Tillicum Prospect, Shoshone County, Idaho (U.S. Geological Survey Wallace 7.5-minute topographic map).
Figure 3.111-2. Sketch of the Tillicum Prospect.
Figure 3.111-3. Portal timbers and gate at the Tillicum adit (Roll R4, frame #4).
Figure 3.111-4. Close-up of caved adit behind the portal, with coarse rubble filling the adit (Roll R4, frame #5).
3.112 PLACER CREEK (Site No. WI-470)

3.112.1 Site Location and Access (Figure 2.1-1d)

This prospect, or at least the prospect that was found, is on the ridge southeast of Flora Gulch about 200 feet above the Moon Pass Road (Placer Creek Road) in the SW¼ of the SW¼ of the SW¼ of section 7, T. 47 N., R. 5 E., on the Wallace 7.5-minute quadrangle (Figure 3.112-1). A dirt bike trail extends a short distance up the nose of the ridge but does not reach the prospect. Several extremely overgrown roads cross the ridge and probably originally led to the site. This prospect is on Forest Service land.

3.112.2 Geologic Features (Figure 2.2-1b)

This site is near the Placer Creek fault in a fault-bounded block of quartzite of the St. Regis Formation (Hobbs and others, 1965, Plate 4).

3.112.3 Site History

The claims in this area were originally staked in 1906. The Placer Creek Silver Lead Mining and Milling Company was incorporated in 1911. By 1914, the property had about 1,000 feet of development. By 1919, the workings included a 1,600-foot tunnel and a 40-foot shaft. The company changed its name to the Silver Crescent Mining Company in 1922. Apparently this prospect was abandoned in favor of another property at about the same time.

3.112.4 Environmental Conditions

3.112.4.1 Site Features

This prospect was visited by John Kauffman on September 2, 1997. A video segment describing the prospect is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 00:46:00-00:48:40). No photographs were taken at this site.

Only two old, long trenches were found at this site, although IGS's mineral property files indicate some underground workings. The location given in the mineral property file for the Placer Creek Prospect is rather vague. These trenches may or may not be the Placer Creek Prospect, but they are near the described location.

Each trench is about 100 feet long, 5-10 feet wide, and up to 10 feet deep. One trench trends about north-south and is cut along contour for most of its length. The other, to the south and slightly east, is cut obliquely uphill across the nose of the ridge. The brush on this hillside is extremely thick and difficult to traverse; other workings may easily have been overlooked.
3.112.4.2 Sample Locations

3.112.4.2.1 Solid Samples
No waste dump samples were collected at this site.

3.112.4.2.2 Water Samples
No water samples were collected at this site.

3.112.5 Structures
No structures are present at this site.

3.112.6 Safety
No safety problems exist at this site.
Figure 3.112-1. Topographic map of the Placer Creek Prospect, Shoshone County, Idaho (U.S. Geological Survey Wallace 7.5-minute topographic map).
3.113 UNNAMED PROSPECT (Site No. K07179706)

This was initially thought to be the Cedar Mountain property (SP-33) and was labeled as such on the field cards and on the video segment of the property. It has since been determined that this prospect is not SP-33 (see Cedar Mountain Lode Group, section 3.23 in Volume 3). Therefore, it has been given the above designation.

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

This prospect is approximately ¼ mile up Bradbury Gulch, a tributary to the North Fork of Hayden Creek, at the end of an old jeep trail that is slightly overgrown at the upper end. The adit is in the NE¼ of the SE¼ of section 12, T. 52 N., R. 3 W., on the Hayden Lake 7.5-minute quadrangle (Figure 3.113-1). Access to Bradbury Gulch is via Forest Service Road 625.

3.113.2 Geologic Features (Figure 2.2-1a)

This prospect is in rocks of the upper Wallace Formation near a northwest-trending fault (Griggs, 1973).

3.113.3 Site History

Nothing is known about the history of this prospect.

3.113.4 Environmental Conditions

3.113.4.1 Site Features

This site was visited by John Kauffman on July 17, 1997. No video was taken. Documenting photographs are Roll K1, frames 18-19.

The property consists of a caved adit and a waste dump, which is moderately overgrown with trees and brush. The waste dump is about 75 feet long, 25 feet wide, and 15 feet thick, and slightly impinges on the drainage. There were no seeps from the collapsed adit or the dump. Maximum size of the disturbed area is 0.1 acre.

3.113.4.2 Sample Locations

3.113.4.2.1 Solid Samples

Only one grab sample (K07179704) of the dump was collected because the waste material was uniform in character. No zones of oxidized material were apparent.
3.113.4.2.2 Water Samples
No water samples were collected at this site.

3.113.4.2.3 Analytical Results

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

Compared to background levels (Tables 1.5-3 and 1.5-4) and environmental standards (Table 1.5-5), sample K07179704 has elevated values of arsenic (180 ppm), cadmium (3.5 ppm), and copper (64 ppm), and slightly elevated amounts of lead (63 ppm) in the element screen. In the TCLP for metals screen, values are either below detection limits or are not significant.

3.113.5 Structures

No structures were found at the site, although a structure is shown on the Hayden Lake 7.5-minute quadrangle near the mouth of Bradbury Gulch.

3.113.6 Safety

There are no safety problems associated with this property.
Figure 3.113-1. Topographic map of the Unnamed Prospect Site No. K07179706, Kootenai County, Idaho (U.S. Geological Survey Hayden Lake 7.5-minute topographic map).
3.114 RHODE ISLAND NO. 2 (SP-154; Site No. B7189705)

This prospect was described in the field notes as an unnamed prospect (Site No. B7189705), but it appears to be the Rhode Island No. 2 (Hobbs and others, 1965, Plate 3, property #5).

3.114.1 Site Location and Access (Figures 2.1-1a)

This prospect is about 2½ miles up Terror Gulch from Interstate 90, along the east edge of the NE¼ of section 1, T. 48 N., R. 3 E., on the Kellogg East 7.5-minute quadrangle (Figure 3.114-1). Access is from the road up Terror Gulch. The prospect is on the west side of the road, directly across from an old tar paper-covered core shack, and is on Forest Service land.

3.114.2 Geologic Features (Figure 2.2-1a)

The Rhode Island workings are in the Prichard Formation. The Prichard consists of thin- to thick-bedded quartzitic argillite and argillite (Hobbs and others, 1965, Plate 3). Hobbs and Erickson (1952, p. 2-3) described the geology and veins as follows:

Country rock in the area of the Rhode Island mine is Prichard formation—the lowest member of the sedimentary Belt series in the Coeur d'Alene district. The rocks are very fine-grained banded argillites with some minor interbedded impure quartzites. The bedding has a markedly different attitude on opposite sides of the vein as well as across the flat fault that cuts the vein at its east end in the No. 1 adit. The vein as exposed in the drifts and located in the drill holes has a general strike of N. 50° W. and a dip of 55° to 60° SW. It ranges from a few to 13 feet thick and comprises milky white quartz, carbonate, pyrrhotite—locally very massive—occasional specks of galena and sphalerite in small patches, and stringers either in the vein or in the footwall. The sphalerite is clear and rosin-colored and assumed to be relatively low in iron. As such it appears to be associated with later quartz and perhaps belonging to a phase of the mineralization considerably later than the ore responsible for the main ore deposits in the district. Similar relationships have been noted in other parts of the Coeur d'Alene metalogenic province.

3.114.3 Site History

The Rhode Island Mining Company, Ltd., was organized in 1900. By 1923, the Rhode Island property consisted of four claims with about 900 feet of workings. In 1947, the mine had two tunnels; the No. 1 tunnel was 800 feet long and the No. 2 was 150 feet long. Although the Rhode Island Mining Company held this property for many years, the company only did assessment work for most of that time.

Between August 1951 and July 1952, 4,483 feet of drilling was done under a Defense Minerals Exploration Administration contract. This drilling located the vein to a depth of 1,300 feet down the dip, but commercial quantities of ore were not found (Hobbs and Erickson, 1952).
3.114.4 Environmental Conditions

3.114.4.1 Site Features

This property was visited by Earl Bennett on July 18, 1997. No video or photographs were taken at this site.

The caved adit at the Rhode Island No. 2 is on the west side of the road behind some brush. The dump is non-existent and was probably removed by road building and erosion by Terror Gulch creek. The disturbed area is less than 0.5 acre.

3.114.4.2 Sample Locations

3.114.4.2.1 Solid Samples
No waste dump samples were collected at this site.

3.114.4.2.2 Water Samples
No water samples were collected at this site.

3.114.5 Structures

The small tar paper-covered core shack, now in disrepair, is the only structure at the site.

3.114.6 Safety
There are no safety hazards at this site.
Figure 3.114-1. Topographic map of the Rhode Island No. 2 (SP-154, or Site No. B7189705), Shoshone County, Idaho (U.S. Geological Survey Kellogg East 7.5-minute topographic map).
3.115 UNNAMED PROSPECT (Site No. K07229704)

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

This prospect is on the east side of the East Fork of Hayden Creek in the SE¼ of the SE¼ of section 21, T. 52 N., R. 2 W., on the Spades Mountain 7.5-minute quadrangle (Figure 3.115-1). The prospect is accurately located on the topographic map. Access is via Forest Service Road 437, which follows the west side of the East Fork. Access from FS Road 437 is on foot across the creek. An overgrown bulldozer trail found at the prospect probably connects with FS Road 437. The prospect is on Forest Service land.

3.115.2 Geologic Features (Figure 2.2-1a)

The rocks near this prospect are quartzite and argillite units of the Wallace Formation. The bedding strikes northwest and dips shallowly to moderately northeast (Anderson, 1940, Plate II).

3.115.3 Site History

Nothing is known about the history of this site.

3.115.4 Environmental Conditions

3.115.4.1 Site Features

This prospect was visited by John Kauffman on July 22, 1997. A video segment describing the prospect is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 00:49:25-00:51:58). Documenting photographs are Roll K2, frames 6-8.

The prospect consists of a bulldozer cut about 80 feet above creek level on the hillside east of the East Fork of Hayden Creek. The cut is 80 feet long by 25 feet wide, with a scar that is 60-70 feet high on the slope above the cut (Figure 3.115-2). The “dump” (rock debris pushed out of the cut) is about 80 feet long, 25 feet wide, and 70 feet down the face. The dump is overgrown and stable and does not impinge on the creek, although some of the coarse rubble has rolled downhill nearly to creek level. The rock appears mostly barren, with only a few fragments of vein quartz scattered along the cut. The total disturbed area is less than 0.25 acre.

3.115.4.2 Sample Locations

3.115.4.2.1 Solid Samples

No waste dump samples were collected at this site.

3.115.4.2.2 Water Samples

No water samples were collected at this site.
3.115.5 Structures
   No structures are present at this site.

3.115.6 Safety
   No safety problems exist at this site.
Figure 3.115-1. Topographic map of the Unnamed Prospect Site No. K07229704, Kootenai County, Idaho (U.S. Geological Survey Spades Mountain 7.5-minute topographic map).
Figure 3.115-2. Looking northeast at the face of the prospect cut (Roll K2, frame #6).
3.116 UNNAMED PROSPECT (Site No. K07239701)

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

This prospect is along Forest Service Road 437 between Hamburg Creek and Lewelling Creek, and west of the North Fork of the Coeur d'Alene River in the SE corner of the SE1/4 of section 18, T. 52 N., R. 1 W., on the Spades Mountain 7.5-minute quadrangle (Figure 3.116-1). The top of the cut is along the edge of FS Road 437. The prospect is on Forest Service land.

3.116.2 Geologic Features (Figure 2.2-1a)

This prospect is in rocks of the Wallace Formation near a north-trending fault (Griggs, 1973).

3.116.3 Site History

Nothing is known of the history of this site.

3.116.4 Environmental Conditions

3.116.4.1 Site Features

This prospect was visited by John Kauffman on July 23, 1997. A video segment describing the prospect is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 00:52:00-00:54:51). Documenting photograph is K2:16.

This prospect consists of an east-west-trending bulldozer cut just below FS Road 437 (Figure 3.116-2). The cut is about 200 feet long by 10 feet wide, and the north side embankment is 10-15 feet high. Rock debris from the cut was pushed out of the east and west ends of the cut, and on both ends, the loose rock extends 30-40 feet down the slope. The rock in the cut appears barren except for a few scattered quartz stringers. The total disturbed area is less than 0.2 acre.

3.116.4.2 Sample Locations

3.116.4.2.1 Solid Samples

No waste dump samples were collected at this site.

3.116.4.2.2 Water Samples

No water samples were collected at this site.

3.116.5 Structures

No structures are present at this site.

3.116.6 Safety

No safety problems exist at this site.
Figure 3.116-1. Topographic map of the Unnamed Prospect Site No. K07239701, Kootenai County, Idaho (U.S. Geological Survey Spades Mountain 7.5-minute topographic map).
Figure 3.116-2. Prospect cut along Forest Service Road 437. The edge of the road is along the top of the cut at the upper left edge of the frame (Roll K2, frame #16).
3.117 LUCKY JOE PROSPECT (Site No. K07299701)

Although this property was identified in the field notes and on the videotape as an unnamed prospect, it is the Lucky Joe Prospect of the Lucky Joe Mining Company (IGS mineral property files).

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

This prospect, shown on the topographic map, is north of Potter Creek at the end of a ¾-1 mile-long jeep road in the SE¼ of the NW¼ of section 32, T. 52 N., R. 1 E., on the Lamb Peak 7.5-minute quadrangle (Figure 3.117-1). Access is via Forest Service Road 534 (the Cascade-Magee Road) to the jeep road. At the time of the site visit, the jeep road was impassable by vehicle because of numerous fallen trees. The prospect is on Forest Service land.

3.117.2 Geologic Features (Figure 2.2-1a)

The prospect appears to be in quartzite of the St. Regis Formation. The Revett and Wallace formations are also in the vicinity (Griggs, 1973).

3.117.3 Site History

The Lucky Joe Mining Company was incorporated in 1957. In 1958, the company noted that this prospect had some promising silver ore. Trenching in 1960 exposed 1,000 feet of the vein, but the assay values were low. The development at the mine consisted of bulldozer trenches and one 40-foot caved tunnel (Elliot, 1960). It is not known how long Lucky Joe held this prospect, but by 1973, the company reported that it had no property.

3.117.4 Environmental Conditions

3.117.4.1 Site Features

This prospect was visited by John Kauffman on July 29, 1997. A video segment describing the property is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 00:54:55-01:03:53). Documenting photographs are Roll K3, frames 9-10.

The property consists of four prospect cuts and one possible caved adit. All of these are aligned nearly east-west from the east side of the drainage to the ridge top west of the drainage. Two of the prospect cuts and the possible caved adit are shown on the topographic map.

Cut 1, the lowermost, is on the east side of the drainage. The indentation in the hillside is about 30 feet long by 15 feet high (Figure 3.117-2). A bulldozed pad or flat area at the base of the cut is 70 feet long by 40 feet wide and a maximum of 8 feet thick. Near the north end of the pad is a pit 10 feet in diameter by 5 feet deep. Water covers the bottom of the pit to a depth of about 1 foot (Figure 3.117-3). Some vuggy vein quartz is scattered on the surface of the pad.
Cut 2 is on the west side of the drainage, just across from Cut 1. This cut follows the slope for about 50 feet. The uphill wall is 15 feet high, and there is a shallow trench along the base of the cut. Beyond the trench is a pad about 70 feet long, 30 feet wide, and 5-8 feet thick. The trench and pad are covered with brushy vegetation.

Cut 3 is a north-south trench in the slope above Cut 2. The trench is 50 feet long, 10 feet deep, and 20 feet across the top. The west side has a zone of limonite-stained, vuggy quartz.

About 20 feet above and west of Cut 3 is a possible caved adit. This site is very brushy. Because of the brush, the size of the dump is difficult to determine, but it is estimated to be 50 feet long, 30 feet wide, and 20 feet thick.

Cut 4, the uppermost, is several hundred feet uphill from, and west of, the caved adit. This long trench cuts west or southwest into and up the slope. It is 150 feet long, 15 feet deep, and 25 feet across the top. Some quartz fragments are present, but no mineralization was noted.

From the appearance of the caved adit, this may be an old prospect with more recent trenching done to look for the vein or veins in the area. The total disturbed area at this prospect covers about 3 acres.

3.117.4.2 Sample Locations

3.117.4.2.1 Solid Samples
No waste dump samples were collected at this site.

3.117.4.2.2 Water Samples
No water samples were collected at this site.

3.117.5 Structures
No structures were found at this site.

3.117.6 Safety
No safety problems were identified at this site.
Figure 3.117-1. Topographic map of the Lucky Joe Prospect (Site No. K07299701), Kootenai County, Idaho (U.S. Geological Survey Lamb Peak 7.5-minute topographic map).
Figure 3.117-2. Prospect Cut #1, looking northeast. A shallow pool of water, shown in the next figure, is at the base of the left side of the cut (Roll K3, frame #9).

Figure 3.117-3. Standing water in a shallow pit at Cut #1 at the Lucky Joe Prospect (Roll K3, frame #10).
3.118 UNNAMED PROSPECT (Site No. K07299703)

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

This prospect, which is shown on the topographic map, is at the head of Stewart Creek. It is northeast of Cascade Saddle in the SE¼ of the SE¼ of section 26, T. 52 N., R. 1 W., on the Cataract Peak 7.5-minute quadrangle (Figure 3.118-1). No road or trail presently leads to the prospect. It was reached by following Forest Service Road 258 at Cascade Saddle north about ¼ mile to FS Road 459. About 1½-2 miles from the junction, FS Road 459 crosses Stewart Creek. From there, the prospect was reached by following the creek bed uphill to the site. FS Road 459 was impassable by vehicle at the time of the visit because of fallen trees. The prospect is on Forest Service land.

3.118.2 Geologic Features (Figure 2.2-1a)

The prospect is in the Wallace Formation near the Cascade fault, which brings rocks of the Burke Formation into contact with the Wallace Formation in this area (Griggs, 1973).

3.118.3 Site History

Nothing is known of the history of this site.

3.118.4 Environmental Conditions

3.118.4.1 Site Features

This prospect was visited by John Kauffman on July 29, 1997. A video segment describing the prospect is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 01:05:54-01:08:04). No photographs were taken at this site.

Although an adit is shown on the topographic map, none was located. However, the area is extremely brushy and a caved tunnel could easily have been overlooked. A wooden flume (?) in the creek bed and a brush-covered flat area above the flume are the only signs of disturbance. The flat area is assumed to be the site of the adit and the remains of the waste dump, although no actual dump could be distinguished. The stream flows through the center of the flat area. The disturbed area is less than 0.1 acre.

3.118.4.2 Sample Locations

3.118.4.2.1 Solid Samples

No dump samples were collected at this site.

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3.118.4.2.2 Water Samples

Because the creek crosses what may be the remains of a waste dump, an upstream/background sample was taken about 50 feet above the flat area and a downstream sample was taken 75 feet below the flume, downstream from the flat area.

<table>
<thead>
<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>
</tr>
</thead>
<tbody>
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<td>K07299704</td>
<td>upstream on Stewart Creek</td>
<td>54</td>
<td>43</td>
<td>7.8</td>
<td>2 feet wide, 0.25 feet deep</td>
<td>Yes</td>
</tr>
<tr>
<td>K07299705</td>
<td>downstream on Stewart Creek</td>
<td>58</td>
<td>43</td>
<td>7.8</td>
<td>2 feet wide, 0.25 feet deep</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3.118.4.2.3 Analytical Results

Water Samples (Tables 2.4-1, 2.4-2, 2.5-1 and 2.5-2)

Sample K07299704, the upstream sample, equals or exceeds all water quality standards for cadmium in the total recoverable metals screen and is within the range of both Aquatic Life standards for cadmium in the dissolved metals screen. In the total recoverable metals screen, sample K07299705 (the downstream sample) exceeds all standards for iron and manganese, exceeds both Aquatic Life standards for copper, and equals or exceeds all water quality standards for cadmium. In the dissolved metals screen, sample K07299705 exceeds the Aquatic Life Chronic standard and is within the range of the Secondary MCL for aluminum.

3.118.5 Structures

Other than the remains of the flume, no structures were found at this site.

3.118.6 Safety

No safety problems were found at this site.
Figure 3.118-1. Topographic map of the Unnamed Prospect Site No. K07299703, Kootenai County, Idaho (U.S. Geological Survey Cataract Peak 7.5-minute topographic map).
3.119 UNNAMED PROSPECT (Site No. R08059701)

This prospect corresponds to the description Anderson (1940, p. 66) gives for the Brower Prospect, but its location does not match Anderson's. The Brower Prospect (Section C, section 3.81) does not match Anderson's description, although its map location is close. Since the Brower property at one time included a large number of claims and several tunnels in this area, it is probable that both this site and the caved shaft described in section 3.81 are part of the original Brower claim block. Anderson's (1940) description does not appear to include most of the Brower property.

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

This prospect is on the slope east of Wolf Lodge Creek about ½ mile east of the Idaho Chain Link Prospect along Forest Service Road 1510, in the NW¼ of the NW¼ of section 12, T. 50 N., R. 2 W., on the Wolf Lodge 7.5-minute quadrangle (Figure 3.119-1). Access from Wolf Lodge Creek is northeast on FS Road 202 about 4 miles to FS Road 1510, then north on FS Road 1510 about 1½ miles. The prospect is just below the road and is on Forest Service land.

3.119.2 Geologic Features (Figure 2.2-1a)

This prospect is in the Burke Formation near a northwest-trending fault (Griggs, 1973).

3.119.3 Site History

In 1923, the Estella Metallurgical Company (incorporated in 1923) held forty-one claims. The workings on the property (as described by the company) were three tunnels, twenty shafts, and eighteen crosscuts. By 1925, the property included sixty-five claims with 875 feet of workings, including four tunnels (150 feet, 250 feet, 25 feet, and 450 feet long) which seem to have been located in different parts of the property. In 1925, the company mentioned a 55-foot crosscut and an 18-foot shaft in connection with a 125-foot adit on one part of its holdings; two other tunnels on the property were listed as being 250 feet and 175 feet long. Little work appears to have been done after that, and Estella forfeited its corporate charter in 1931.

3.119.4 Environmental Conditions

3.119.4.1 Site Features

The prospect was visited by William Rember on August 5, 1997. A video segment describing the prospect is on the Coeur d’Alene Basin (Secondary Properties) Videotape (Tape 4, index 01:08:05-01:10:14). Documenting photographs are Roll R3, frames 12-13.

This prospect consists of a caved adit and a waste dump (Figure 3.119-2) on a weedy, open slope. The area has been logged and possibly burned. The first 15 feet of the adit is collapsed and forms
a shallow trough on the slope (Figure 3.119-3). Rock debris from construction of FS Road 1510 fills the top of the trough. The weed-covered waste dump is 25 feet long, 25 feet wide, and 15 feet thick (Figure 3.119-4). Milky-white quartz fragments are scattered throughout the dump material. The disturbed area covers less than 0.25 acre.

3.119.4.2 Sample Locations

3.119.4.2.1 Solid Samples
They waste dump samples were collected at this site.

3.119.4.2.2 Water Samples
No water samples were collected at this site.

3.119.5 Structures
No structures are present at this site.

3.119.6 Safety
No safety hazards were found at this site.
Figure 3.119-1. Topographic map of the Unnamed Prospect Site No. R08059701, Kootenai County, Idaho (U.S. Geological Survey Wolf Lodge 7.5-minute topographic map).
Figure 3.119-2. Sketch of Site No. R08059701.
Figure 3.119-3. Trough on the slope formed by the caved adit at Site No. R08059701, looking east. The embankment for Forest Service Road 1510 can be seen across the top of the photograph (Roll R3, frame #12).
Figure 3.119-4. Weed-covered waste dump at Site No. R08059701, looking south (Roll R3, frame #13).
3.120 UNNAMED PROSPECT (Site No. K08069703)

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

This prospect, shown on the topographic map, is along the north side of the West Fork of Big Creek in the SE¼ of the SE¼ of the NE¼ of section 29, T. 48 N., R. 3 E., on the Polaris Peak 7.5-minute quadrangle (Figure 3.120-1). Access is on County Road 264 along Big Creek to the West Fork of Big Creek. A trail passable on foot, by trail bike, or by all-terrain vehicle follows the north side of the West Fork. The prospect is along the trail about 1.5 miles west of Big Creek and is on Forest Service land.

3.120.2 Geologic Features (Figure 2.2-1a)

This site is along the north side of the Placer Creek Fault in quartzite units of the Revett Formation (Hobbs and others, 1965, Plate 2).

3.120.3 Site History

Nothing is known of the history of this site.

3.120.4 Environmental Conditions

3.120.4.1 Site Features

This prospect was visited by John Kauffman on August 6, 1997. A video segment describing the prospect is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 01:10:15-01:13:15). No photographs were taken.

A caved adit, marked as a prospect on the most recent topographic map (1988 provisional edition), was found on the north side of the West Fork trail. Although the adit is overgrown with thick brush and barely discernible, a steady stream of water indicates its location. The flow rate is about 5 gallons per minute. The water flows several hundred yards down the West Fork trail before disappearing into the ground. The trail crosses the surface of the dump, estimated at only 30 feet long, 15 feet wide, and 15 feet thick. The dump is also barely visible in the thick brush. The disturbed area covers less than 0.1 acre.

3.120.4.2 Sample Locations

3.120.4.2.1 Solid Samples

No waste dump samples were collected at this site.

3.120.4.2.2 Water Samples

A water sample (K08069704) was collected from the adit water flowing on the West Fork trail, several feet in front of the caved adit.
<table>
<thead>
<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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<tbody>
<tr>
<td>K08069704</td>
<td>Unnamed prospect K08069703, adit</td>
<td>28</td>
<td>46</td>
<td>8.0</td>
<td>5</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3.120.4.2.3 Analytical Results

Water Samples

In the total recoverable metals screen, sample K08069704 equals or exceeds all standards for cadmium and exceeds the Secondary MCL for iron.

3.120.5 Structures

No structures are present at this site.

3.120.6 Safety

No safety concerns are present at this site.
Figure 3.120-1. Topographic map of the Unnamed Prospect Site No. K08069703, Shoshone County, Idaho (U.S. Geological Survey Polaris Peak 7.5-minute topographic map).
3.121 UNNAMED PROSPECT (Site No. K08069706)

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

This prospect is north of the West Fork of Big Creek in the NE¼ of the SW¼ of the NE¼ of section 29, T. 48 N., R. 3 E., on the Polaris Peak 7.5-minute quadrangle (Figure 3.121-1). The prospect cut is at the end of an overgrown road that branches from the four-wheel-drive trail (now essentially a foot path) that is a continuation of the West Fork trail shown on the topographic map. The site is on Forest Service land.

3.121.2 Geologic Features (Figure 2.2-1a)

This prospect is near the Placer Creek Fault in quartzite units of the Revett Formation (Hobbs and others, 1965, Plate 2).

3.121.3 Site History

Nothing is known of the history of this site.

3.121.4 Environmental Conditions

3.121.4.1 Site Features

This prospect was visited by John Kauffman on August 6, 1997. No video or photographs were taken at this site.

Although the Forest Service engineering topographic map showed an adit at this location, none could be found. However, a trench 60-80 feet long and about 4 feet deep was found cutting east-west across the nose of a low ridge several hundred feet above and north of the West Fork of Big Creek. The trench is brushy, and the surrounding hillside is covered by timber and brush. No other workings were encountered. The disturbed area is less than 0.1 acre.

3.121.4.2 Sample Locations

3.121.4.2.1 Solid Samples

No waste dump samples were collected at this site.

3.121.4.2.2 Water Samples

No water samples were collected at this site.

3.121.5 Structures

No structures were found at this site.

3.121.6 Safety

No safety problems exist at this site.
Figure 3.121-1. Topographic map of the Unnamed Prospect Site No. K08069706, Shoshone County, Idaho (U.S. Geological Survey Polaris Peak 7.5-minute topographic map).
3.122 NATIONAL MINE, Unnamed Adit (SP-286)
Alternate name—Site No. K08079708.

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

This prospect is at the base of the slope on the west side of Big Creek in the SE¼ of the SW¼ of section 27, T. 48 N., R. 3 E., on the Polaris Peak 7.5-minute quadrangle (Figure 3.122-1). It is about 1 mile south of the National Forest boundary on Forest Service land. There is no direct access to the west side of the creek. A dirt road off the west side of Forest Service Road 2354 goes to the creek and follows it northward, but it has been washed out where it apparently crossed to the west side. Across the creek, an old, overgrown trail along the base of the hill leads to the prospect.

Although this property is referred to in the field notes and on the videotape as an unnamed prospect, it is in fact part of the National Mine, as are all the other prospects on this group of patented claims. Other sites on the First National claim block (Figure 3.47-2) are: the main adit (probably the No. 3 adit in the company's reports; discussed in section 3.5 of Volume III (Kauffman and others, 1998)), Adit No. 2 (section 3.61 in part C of this report); and Adit No. 1 (section 3.48 in Section B of this report). No map of the National Mine is currently available, and the company's designation for this adit is not known.

3.122.2 Geologic Features (Figure 2.2-1a)

This adit is in quartzite of the Revett Formation, just north of the Placer Creek Fault. The fault brings the Revett on the north into contact with the lower Wallace Formation on the south (Hobbs and others, 1965, Plate 2).

3.122.3 Site History

In 1913, when the property was owned by the Liston Mining Company, Ltd., the mine had about 3,000 feet of workings and seven of the twenty-six claims were patented. The mine's surface plant was destroyed by the great forest fire of 1910 and was subsequently rebuilt. Development work continued until June 1918, when the company ran out of money. First National Silver Mines, Ltd., which was controlled by some of the same people as the previous company, took over the mine in 1920. In 1922, the mine had two tunnels (2,600 and 900 feet long) and about 3,500 feet of total workings. In 1924, First National opened up a third tunnel. The company continued developing the property until 1928 or 1929, after which only assessment work was done until the company forfeited its charter in 1931. In 1947, the National Silver-Lead Mining Company began reopening the tunnels at the mine. The following year, total development at the property was about 5,300 feet, and the tunnels were 800 feet, 1,800 feet, and 2,700 feet long. National Silver-Lead continued developing the mine until 1953, after which only assessment work was done. Nothing is known of activities at the mine after 1980.

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3.122.4 Environmental Conditions

3.122.4.1 Site Features

This prospect was visited by John Kauffman on August 7, 1997. A video segment describing the property, identified as unnamed prospect K08079708, is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 01:13:36-01:17:45). Documenting photograph is Roll K5, frame 3.

The prospect consists of a caved adit and a densely overgrown waste dump. The adit is marked by a brushy trough on the slope and a trickle of water that flows out onto, and down the south side of, the waste dump. The dump is about 60 feet long, 20 feet wide, and 25 feet thick, and is covered with brushy undergrowth and a dense stand of trees up to 10 inches in diameter. The base of the dump is slightly above creek level and probably 100 feet west of the creek. Portions of a trestle and rails are visible across the dump surface. At the east end of the dump, the rails extend out above the slope of the dump face for several feet. A few pieces of scrap metal were found. The disturbed area is about 0.5 acre or less.

3.122.4.2 Sample Locations

3.122.4.2.1 Solid Samples

No dump samples were collected at this site.

3.122.4.2.2 Water Samples

A water sample was collected from the adit seep.

<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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<td>K08079709</td>
<td>K08079708 adit</td>
<td>114</td>
<td>47</td>
<td>7.4</td>
<td>&lt; 1</td>
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3.122.4.2.3 Analytical Results

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

Sample K08079709 exceeds the Aquatic Life Chronic standard and is at the lower threshold for Aquatic Life Acute standard for cadmium in the total recoverable metals screen. It barely exceeds the lower threshold of the Aquatic Life Chronic standard for copper in the dissolved metals screen.
3.122.5 **Structures**

No structures were found at this site.

3.122.6 **Safety**

No safety problems were identified at this location.
Figure 3.122-1. Topographic map of the unnamed adit of the National Mine (Site No. K08079708), Shoshone County, Idaho (U.S. Geological Survey Polaris Peak 7.5-minute topographic map).
3.123 UNNAMED PROSPECT (Site No. R08139701)

3.123.1 Site Location and Access (Figure 2.1-1d)

This prospect is about ½ mile north of Lost Lake in the NW¼ of the SE¼ of section 31, T. 48 N., R. 4 E., on the Wallace 7.5-minute quadrangle (Figure 3.123-1). Access via Forest Service Road 330 from the mouth of Big Creek is to the southeast past Polaris Peak and nearly to Lost Lake. Just west of Lost Lake, a logging road heads east off of FS Road 330 and passes the prospect about ½ mile from FS Road 330. The prospect is on Forest Service land.

3.123.2 Geologic Features (Figure 2.2-1b)

This prospect is in rocks of the lower Wallace Formation near the contact with the St. Regis Formation (Hobbs and others, 1965, Plate 3).

3.123.3 Site History

Nothing is known of the history of this site.

3.123.4 Environmental Conditions

3.123.4.1 Site Features

This prospect was visited by William Rember on August 13, 1997. No video or photographs were taken at this site.

The Forest Service engineering topographic map shows a tunnel at this location. No tunnel was found, but a long trench or bulldozer cut, a small trench, and several small pits were noted (Figure 3.123-2). The long bulldozer cut extends both above and below the logging road, for a total length of about ½ mile. Above the logging road and west of the long cut is a short, horizontal cut and a pit, or possibly a trench, that looks like a small mine dump from the road. The small pits are located below the road and west of the long trench. The disturbed area covers less than 0.5 acre.

3.123.4.2 Sample Locations

3.123.4.2.1 Solid Samples

No waste dump samples were collected at this site.

3.123.4.2.2 Water Samples

No water samples were collected at this site.

3.123.5 Structures

No structures are present at this site.
3.123.6 Safety
    There are no safety hazards at this site.
Figure 3.123-1. Topographic map of the Unnamed Prospect Site No. R08139701, Shoshone County, Idaho (U.S. Geological Survey Wallace 7.5-minute topographic map).
Figure 3.123-2. Sketch of Site No. R08139701.
3.124 UNNAMED PROSPECT (Site No. K08139701)

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

This small prospect is on the steep slope north of the upper end of the West Fork of Big Creek in the SE¼ of the NW¼ of section 20, T. 48 N., R. 3 E., on the Polaris Peak 7.5-minute quadrangle (Figure 3.124-1). It is the western of two prospects noted on the topographic map north of the West Fork in section 20. Access is similar to that of the Rockford Group (SP-252; section 3.34 in Section B of this report). This prospect is on patented claims north of Forest Service land.

3.124.2 Geologic Features (Figure 2.2-1a)

This prospect is in quartzite of the St. Regis Formation (Hobbs and others, 1965, Plate 2).

3.124.3 Site History

This prospect is probably on claims belonging to the Rockford Group (SP-252), although it is not certain how it relates to the main workings described in section 3.34 in Section B of this report. The history for the group as a whole is as follows:

The Rockford Mining Company, Ltd., was organized in 1907. In 1913, the company held eleven claims, and total development was about 1,500 feet of workings. By 1922, the property had five tunnels and about 2,510 feet of total workings. The lengths of the tunnels were: No. 1, 150 feet; No. 2, 900 feet; No. 3, 1,200 feet; No. 4, 200 feet; and No. 5, 60 feet. The company forfeited its corporate charter and had it reinstated several times before disposing of the property and finally going out of business in 1934.

Sunshine Consolidated, Inc., was organized in 1934 and acquired the Rockford Group, as well as several other properties, at about that time. In 1938, Sunshine Consolidated entered into a profit-sharing agreement with the Sunshine Mining Company. From then on, most of the work on the Sunshine Consolidated properties was done by Sunshine Mining through the Jewell Shaft of the Sunshine Mine. In 1952, the U.S. Bureau of Mines noted that Sunshine Mining operated the Rockford Group; this is the only year when work on the Rockford Group was specifically mentioned. Sunshine Consolidated and three other companies merged with Sunshine Mining in 1981.

3.124.4 Environmental Conditions

3.124.4.1 Site Features

The prospect was visited by John Kauffman on August 13, 1997. A video segment describing the prospect is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 01:18:10-01:22:10). Documenting photographs are Roll K6, frames 3-4.
This is a very minor prospect consisting of a caved adit and a small waste dump. The dump is only 15 feet long, 10 feet wide, and 5-6 feet thick, but it extends down the slope for about 30 feet. The disturbed area covers less than 0.1 acre.

3.124.4.2 Sample Locations

3.124.4.2.1 Solid Samples
No waste dump samples were collected at this site.

3.124.4.2.2 Water Samples
No water samples were collected at this site.

3.124.5 Structures
No structures are present at this site.

3.124.6 Safety
No safety problems exist at this site.
Figure 3.124-1. Topographic map of the Unnamed Prospect Site No. K08139701, Shoshone County, Idaho (U.S. Geological Survey Polaris Peak 7.5-minute topographic map).
3.125 UNNAMED PROSPECT (Site No. K08139702)

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

This minor prospect, consisting only of a shallow pit, is located on the slope north of the West Fork of Big Creek in the NW¼ of the NW¼ of the SE¼ of section 20, T. 48 N., R. 3 E., on the Polaris Peak 7.5-minute quadrangle (Figure 3.125-1). It is in the vicinity of the eastern of two prospects shown on the topographic map north of the West Fork in section 20. Access is similar to that for the Rockford Group (SP-252). The pit is on a group of patented claims north of Forest Service land.

3.125.2 Geologic Features (Figure 2.2-1a)

This prospect is in quartzite of the St. Regis Formation (Hobbs and others, 1965, Plate 2).

3.125.3 Site History

This prospect is probably on claims belonging to the Rockford Group (SP-252), although it is not certain how it relates to the main workings described in section 3.34 in Section B of this report. The history for the group as a whole is as follows:

The Rockford Mining Company, Ltd., was organized in 1907. In 1913, the company held eleven claims, and total development was about 1,500 feet of workings. By 1922, the property had five tunnels and about 2,510 feet of total workings. The lengths of the tunnels were: No. 1, 150 feet; No. 2, 900 feet; No. 3, 1,200 feet; No. 4, 200 feet; and No. 5, 60 feet. The company forfeited its corporate charter and had it reinstated several times before disposing of the property and finally going out of business in 1934.

Sunshine Consolidated, Inc., was organized in 1934 and acquired the Rockford Group, as well as several other properties, at about that time. In 1938, Sunshine Consolidated entered into a profit-sharing agreement with the Sunshine Mining Company. From then on, most of the work on the Sunshine Consolidated properties was done by Sunshine Mining through the Jewell Shaft of the Sunshine Mine. In 1952, the U.S. Bureau of Mines noted that Sunshine Mining operated the Rockford Group; this is the only year when work on the Rockford Group was specifically mentioned. Sunshine Consolidated and three other companies merged with Sunshine Mining in 1981.

3.125.4 Environmental Conditions

3.125.4.1 Site Features

The prospect was visited by John Kauffman on August 13, 1997. A video segment describing the prospect is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 01:22:23-01:24:26). No photographs were taken at this site.
Only a small prospect pit could be located at this site. The pit is about 5 feet long, 4 feet wide, and 3 feet deep. The dump is 10 feet long, 4 feet wide, and 5 feet thick. The entire area is overgrown with trees and brush.

3.125.4.2 Sample Locations

3.125.4.2.1 Solid Samples
No waste dump samples were collected at this site.

3.125.4.2.2 Water Samples
No water samples were collected at this site.

3.125.5 Structures
No structures are present at this site.

3.125.6 Safety
No safety problems exist at this site.
Figure 3.125-1. Topographic map of the Unnamed Prospect Site No. K08139702, Shoshone County, Idaho (U.S. Geological Survey Polaris Peak 7.5-minute topographic map).
3.126 UNNAMED PROSPECT (Site No. B8139706)

3.126.1 Site Location and Access (Figures 2.1-1c)

This small prospect is on the east side of the road up Military Gulch in the NW¼ of the SE¼ of section 12, T. 48 N., R. 5 E., on the Burke 7.5-minute quadrangle (Figure 3.126-1). Access to the Military Gulch road is by heading east from Burke on the Canyon Creek Road. The prospect is on Forest Service land.

3.126.2 Geologic Features (Figure 2.2-1b)

This prospect is in quartzite of the St. Regis Formation (Hobbs and others, 1965, Plate 5).

3.126.3 Site History

Nothing is known of the history of this site.

3.126.4 Environmental Conditions

3.126.4.1 Site Features

This prospect was visited by Earl Bennett on August 13, 1997. No video was taken at this site. Documenting photograph is Roll B11, frame 6.

This is a small prospect pit or cut (about 50 feet long and 20 feet wide) along the slope, with an embankment about 8-12 feet high (Figure 3.126-2). The disturbed area is less than 0.25 acre.

3.126.4.2 Sample Locations

3.126.4.2.1 Solid Samples

No waste dump samples were collected at this site.

3.126.4.2.2 Water Samples

No water samples were collected at this site.

3.126.5 Structures

There are no structures at this site.

3.126.6 Safety

There are no safety hazards at this site.
Figure 3.126-1. Topographic map of the Unnamed Prospect Site No. B8139706, Shoshone County, Idaho (U.S. Geological Survey Burke 7.5-minute topographic map).
Figure 3.126-2. Cut and shallow pit at Site No. B8139706 (Roll B11, frame #6).
3.127 UNNAMED PROSPECT (Site No. B8139708)

3.127.1 Site Location and Access (Figures 2.1-1c)

This prospect is on the east side of the road up Military Gulch in the NW\(\frac{1}{4}\) of the SE\(\frac{1}{4}\) of section 12, T. 48 N., R. 5 E., on the Burke 7.5-minute quadrangle (Figure 3.127-1). Access to the Military Gulch Road is by heading east from Burke on the Canyon Creek Road. The prospect is on Forest Service land.

3.127.2 Geologic Features (Figure 2.2-1b)

This prospect is in the Revett Quartzite (Hobbs and others, 1965, Plate 5).

3.127.3 Site History

Nothing is known of the history of this site.

3.127.4 Environmental Conditions

3.127.4.1 Site Features

This prospect was visited by Earl Bennett on August 13, 1997. No video was taken at this site. Documenting photographs are Roll B11, frames 7-10.

This prospect consists of a caved, dry adit. The adit forms a trough up the hill for 75 feet (Figure 3.127-2). The quartzite is spotted, but no mineralization was noted. The waste dump measures about 65 feet long, 65 feet wide, and 40 feet on the nose (Figures 3.127-3 and 3.127-4). The disturbed area is less than 0.5 acre.

3.127.4.2 Sample Locations

3.127.4.2.1 Solid Samples

No waste dump samples were collected at this site.

3.127.4.2.2 Water Samples

No water samples were collected at this site.

3.127.5 Structures

There are no structures at this site.

3.127.6 Safety

There are no safety hazards at this site.

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Figure 3.127-1. Topographic map of the Unnamed Prospect Site No. B8139708, Shoshone County, Idaho (U.S. Geological Survey Burke 7.5-minute topographic map).
Figure 3.127-2. Shallow trough marking the location of the caved adit at Site No. B8139708 (Roll B11, frame #7).

Figure 3.127-3. View along the length of the waste dump at Site No. B8139708 (Roll B11, frame #8).
Figure 3.127-4. View down the nose of the waste dump at Site No. B8139708 (Roll B11, frame #10).
3.128 UNNAMED PROSPECT (Site No. K08199711)

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

This prospect is near the center of the SE¼ of the NW¼ of section 11, T. 48 N., R. 5 E., on the Burke 7.5-minute quadrangle (Figure 3.128-1). It is on the Sonora Gulch Trail about 500-600 feet south from a switchback on a logging road that crosses Sonora Gulch about 1/3 mile south of the electrical substation on State Highway 4 (which is also Forest Service Road 7623). The Sonora Gulch Trail crosses the top of the waste dump and is passable on foot, trail bike, or all-terrain vehicle. The prospect is on a block of Forest Service land nearly surrounded by patented claims/private land.

3.128.2 Geologic Features (Figure 2.2-1b)

This prospect is in an area overlain by glacial and glaciofluvial deposits. The bedrock in the area is quartzite of the Burke Formation (Hobbs and others, 1965, Plate 5).

3.128.3 Site History

Nothing is known of the history of this site.

3.128.4 Environmental Conditions

3.128.4.1 Site Features

This prospect was visited by John Kauffman on August 19, 1997. A video segment describing the prospect is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 01:25:05-01:27:11). Documenting photographs are Roll K7, frames 16-17.

A caved adit, visible only as a brushy depression, is on the northeast side of the trail (Figure 3.128-2). The surface of the dump forms a wide portion of the trail. The dump is about 45 feet long, 35 feet wide, and 30-40 feet thick, and extends downhill to the creek on the southwest side of the trail. The disturbed area is less than 0.25 acre.

3.128.4.2 Sample Locations

3.128.4.2.1 Solid Samples

One grab dump sample was taken down the slope of the face of the dump. No oxidized material was present on the dump.

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216
3.128.4.2.2 Water Samples
   No water samples were collected at this site.

3.128.4.2.3 Analytical Results

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

Compared to background values (Tables 1.5-3 and 1.5-4) or environmental standards (Table 1.5-5), sample K08199712 has elevated levels of cadmium (1.6 ppm), copper (59 ppm), and lead (63 ppm) in the element screen. In the TCLP for metals screen, values are below detection limits for all relevant metals.

3.128.5 Structures
   No structures were found at this site.

3.128.6 Safety
   No safety problems were identified at this site.
Figure 3.128-1. Topographic map of the Unnamed Prospect Site No. K08199711, Shoshone County, Idaho (U.S. Geological Survey Burke 7.5-minute topographic map).
Figure 3.128-2. Looking northeast at the brush-covered cave adit. A slight depression continues up the slope beyond the picture. Sonora Gulch Trail is along the bottom of the frame (Roll K7, frame #16).
3.129 UNNAMED PROSPECT (Site No. K08209701)

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

This prospect is about 750 feet southeast of Site No. K08199711 along the Sonora Gulch Trail in the SE¼ of the NW¼ of section 11, T. 48 N., R. 5 E., on the Burke 7.5-minute quadrangle (Figure 3.129-1). Access is by foot, trail bike, or all-terrain vehicle up the Sonora Gulch Trail. This prospect is either on a block of patented claims or on a wedge of Forest Service land among the patented claims.

3.129.2 Geologic Features (Figure 2.2-1b)

This prospect is in quartzite of the Burke Formation (Hobbs and others, 1965, Plate 5).

3.129.3 Site History
   Nothing is known of the history of this site.

3.129.4 Environmental Conditions

3.129.4.1 Site Features

This prospect was visited by John Kauffman on August 20, 1997. No video or photographs were taken at this site.

The prospect consists of a caved adit and a waste dump, both of which are barely discernible because of dense vegetation, even though the trail crosses the surface of the dump. The caved adit is on the northeast side of the trail and can be seen as a very slight, brush-filled depression on the hillside. The waste dump (which is only about 20 feet long, 10 feet wide, and 20 (?) feet thick) extends down the slope on the southwest side of the trail. It appears stable and does not reach the creek. The disturbed area is less than 0.1 acre.

3.129.4.2 Sample Locations

3.129.4.2.1 Solid Samples
   No waste dump samples were collected at this site.

3.129.4.2.2 Water Samples
   No water samples were collected at this site.

3.129.5 Structures
   No structures are present at this site.

3.129.6 Safety
   No safety problems exist at this site.
Figure 3.129-1. Topographic map of the Unnamed Prospect Site No. K08209701, Shoshone County, Idaho (U.S. Geological Survey Burke 7.5-minute topographic map).
3.130 UNNAMED PROSPECTS (Site Nos. K08209702 and K08209703)

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

These two prospects are about 1.5 miles up Sonora Gulch on the east slope above the Sonora Gulch Trail in the center of the N1/2 of the NW1/4 of section 13, T. 48 N., R. 5 E., Burke 7.5-minute quadrangle (Figure 3.130-1). The Sonora Gulch Trail passes within 100-300 feet of the prospects. This area is a mixture of Forest Service land and patented claims, and the ownership of these prospects is uncertain.

3.130.2 Geologic Features (Figure 2.2-1b)

These prospects appear to straddle the contact between the lower Wallace and the St. Regis formations (Hobbs and others, 1965, Plate 5).

3.130.3 Site History

Nothing is known of the history of this site.

3.130.4 Environmental Conditions

3.130.4.1 Site Features

These prospects were visited by John Kauffman on August 20, 1997. No video was taken of either prospect. Documenting photographs are Roll K7, frame 26; and Roll K8, frame 1 (K08209702) and frame 2 (K08209703).

Site No. K08209702 is probably a very short, caved adit. It is just above the Sonora Gulch Trail and is about 100 feet north of where the road to the Upper Adit of the Copper King Mine splits from the trail. A sloughed depression and a small waste dump (about 20 feet long, 10 feet wide, and 5 feet thick) are all that remains. The dump (Figure 3.130-2) extends about 15-20 feet downhill as a thin veneer. No mineralization was seen on the dump.

Site No. K08209703 is a shallow pit about 100 yards north of the second switchback on the Sonora Gulch Trail at an elevation of about 5560 feet. The pit (Figure 3.130-3) is about 8 feet in diameter and 5 feet deep. The dump is 10 feet long, 3 feet wide, and 5 feet thick. Several property lines were marked with pink flagging in this area. In addition, a lath stake marking the corner of the "Mayflower #3" was found about 100-200 feet downhill from the pit.

The total disturbed area for these prospects is less than 0.1 acre.

3.130.4.2 Sample Locations

3.130.4.2.1 Solid Samples

No waste dump samples were collected at this site.

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3.130.4.2.2 Water Samples
   No water samples were collected at this site.

3.130.5 Structures
   No structures are present at this site.

3.130.6 Safety
   No safety problems exist at this site.
Figure 3.130-1. Topographic map of the Unnamed Prospects Site Nos. K08209702 and K08209703, Shoshone County, Idaho (U.S. Geological Survey Burke 7.5-minute topographic map).
Figure 3.130-2. Waste dump of Site No. K08209702, looking northwest (Roll K8, frame #1).

Figure 3.130-3. Shallow pits of Site No. K08209703 (Roll K8, frame #2).
3.131 UNNAMED PROSPECT (Site No. K08209704)

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

This prospect is on the north side of Canyon Creek on a clear-cut slope between Humboldt Gulch on the west and Rabbit Gulch on the east. The prospect is in the extreme SE corner of section 2 and the adjoining NE corner of section 11, T. 48 N., R. 5 E., on the Burke 7.5-minute quadrangle (Figure 3.131-1). Access from State Highway 4 at the electrical substation is via jeep trail along the north side of the creek. The prospect can be reached on foot. It is on a wedge of Forest Service land between groups of patented claims.

3.131.2 Geologic Features (Figure 2.2-1b)

This prospect is in a narrow, fault-bound block of the Revett Formation, which is between St. Regis Formation to the east and Burke Formation to the west (Hobbs and others, 1965, Plate 5).

3.131.3 Site History

Nothing is known of the history of this site.

3.131.4 Environmental Conditions

3.131.4.1 Site Features

This prospect was visited by John Kauffman on August 20, 1997. No video was taken at this site. Documenting photographs are Roll K8, frames 3-4.

According to Hobbs and others (1965, Plate 5), there were two adits and two prospect pits in this vicinity at one time. Only two workings were found during the site inspection, and these are thought to be the prospect pits. No adits were found in the timber and brush above the clear cut. They are most likely present but obscured by vegetation.

The two prospects found are either short adits or trenches dug into the slope just below the upper edge of the clear cut (Figure 3.131-2). The trenches are about 200 feet apart. Both are 25-30 feet long and have waste rock pushed out on the downhill end of the trench. The dumps are roughly 20 feet long, 9-10 feet wide, and 5 feet thick. The total disturbed area is less than 0.1 acre.

3.131.4.2 Sample Locations

3.131.4.2.1 Solid Samples

No waste dump samples were collected at this site.

3.131.4.2.2 Water Samples

No water samples were collected at this site.
3.131.5 Structures
   No structures are present at this site.

3.131.6 Safety
   No safety problems exist at this site.
Figure 3.131-1. Topographic map of the Unnamed Prospect Site No. K08209704, Shoshone County, Idaho (U.S. Geological Survey Burke 7.5-minute topographic map).
Figure 3.131-2. Shallow depression (just left of the center of the frame) and small waste dump (lower right of the frame) on the clear-cut slope. A second, similar prospect is about 200 feet east of this prospect and is also near the upper end of the clear-cut (Roll K8, frame #3).
3.132 SONORA PROSPECT (WL-272)

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

The Sonora Prospect is ¾ mile up Sonora Gulch in the SE¼, section 11, T. 48 N., R. 5 E., on the Burke 7.5-minute quadrangle (Figure 3.132-1). The mine is on the south side of the gulch along the Sonora Gulch trail. The trail is a jeep road as far as the main adit. No access roads or trails reach the upper workings. The property is in an area of mixed patented claims and Forest Service land. Recent Forest Service boundary markers and flagging were found along the Sonora Gulch trail near the prospect.

3.132.2 Geologic Features (Figure 2.2-1b)

The Sonora Prospect is in quartzite of the Revett Formation. The workings are on both sides of the Sonora fault (Hobbs and others, 1965, Plate 5).

3.132.3 Site History

The Sonora Mining and Milling Company was organized in 1897 and acquired most of its claims soon thereafter. By 1913, the company had applied for patent on eleven of its twelve claims. Patents for seven of the claims were issued the following year. In 1921, the property had 4,000 feet of workings. By 1928, the mine had 5,540 feet of total workings, including 195 feet of shafts, 75 feet of raises, and 5,270 feet of tunnels crosscuts, and drifts. These workings included three tunnels (120 feet, 150 feet, and 5,000 feet) and three shafts. Between 1924 and 1928, four more claims were patented, bringing the total up to eleven patented claims out of fifteen being operated. In 1936, the mine had 5,900 feet of workings, but two years later, this had been reduced to 5,410 feet, possibly due to caving in some of the workings. After 1935, the property was idle, and the company forfeited its corporate charter in 1944.

3.132.4 Environmental Conditions

3.132.4.1 Site Features

The Sonora Prospect (Figure 3.132-2) was inadvertently bypassed during the 1997 field season and therefore the property was visited by John Kauffman on October 5, 1998. A video segment describing the prospect is on the Coeur d'Alene Basin (Secondary Properties) Videotape (Tape 4, index 01:41:37-01:51:12). Documenting photographs are Roll K19, frames 15-23 in the 1998 photo series.

Annual reports to the Idaho Inspector of Mines list three adits and three shafts at the property, although the locations of the shafts are not reported and no maps are available. Three adits, but none of the shafts, were found. However, some or all of the shafts may have been sunk from inside the adits.
Adit 1, the main opening, is on the south side of Sonora Gulch. The waste dump is readily apparent from the jeep trail across the gulch (Figure 3.132-3). The adit is caved about 25 feet back from the portal (Figure 3.132-4), but a small opening (about 2 feet high by 3 feet long) remains at the top of the caved debris (Figure 3.132-5). Timbers are visible inside the opening. Water flows from the adit at 10-20 gallons per minute, drains down the west side of the dump, and reaches Sonora Gulch creek. Some of the water pools on the dump surface and supports a thick carpet of moss (Figure 3.132-6). The waste dump is large but mostly unoxidized. It is about 75 feet long in an east-west direction, 60 feet wide north-south, and about 60 feet thick down the face. The toe of the dump extends to the creek.

Adit 2 is about 300-350 feet above, and slightly southeast of, Adit 1. The open adit (Figure 3.132-7) is near the east end of a 50-foot-wide clear-cut swath on a relatively steep slope. No access roads or trails leading to this site were noted. The waste dump is small (only 10 feet long, 8 feet wide, and 15 feet down the face) and forms only a thin veneer on the steep slope (Figure 3.132-8).

A third, caved entrance, presumably an adit, was found in the timber approximately 100 feet downhill from Adit 2. This dump is larger than that at Adit 2. It is about 10 feet long, 10 feet wide on top, and extends at least 20-30 feet down the slope. Some large rock fragments were found even farther downhill. A very small prospect and dump are 20 feet west of this adit. Numerous shallow pits and cuts, all now sloughed in, can be found on the slope between Adit 1 and these upper workings.

3.132.4.2 Sample Locations

3.132.4.2.1 Solid Samples

A waste dump sample (K10059803) was collected from the face of the Adit 1 dump from finer material near the west end.

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<th>Location</th>
<th>Analyzed (Yes/No)</th>
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<tbody>
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<td>K10059803</td>
<td>Sonora Prospect, Adit 1 dump</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3.132.4.2.2 Water Samples

Water flowing from Adit 1 was sampled (K10059801) where it emerges from the caved portal. An upstream sample (K10059802) was collected from Sonora Gulch creek upstream of where the access road crosses the gulch. A downstream sample (K10059804) was taken about ½ mile below the mine where the access road begins.
<table>
<thead>
<tr>
<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>
</tr>
</thead>
<tbody>
<tr>
<td>K10059801</td>
<td>Sonora Prospect, Adit 1</td>
<td>29</td>
<td>41</td>
<td>7.15</td>
<td>10-20</td>
<td>Yes</td>
</tr>
<tr>
<td>K10059802</td>
<td>upstream on Sonora Gulch creek</td>
<td>46</td>
<td>40</td>
<td>8.3</td>
<td>4 ft. wide, 0.5 ft. deep</td>
<td>Yes</td>
</tr>
<tr>
<td>K10059804</td>
<td>downstream on Sonora Gulch creek</td>
<td>39</td>
<td>41</td>
<td>8.25</td>
<td>6-10 ft. wide, 0.5-1 ft. deep</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**3.132.4.2.3 Analytical Results**

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

Compared to background levels (Tables 1.5-3 and 1.5-4) and environmental standards (Table 1.5-5), dump sample K10059803 has elevated values of cadmium (2.3 ppm), copper (2,100 ppm), lead (13,000 ppm), and zinc (460 ppm) in the element screen. In the TCLP for metals screen, lead was the only element that showed significant amounts of leaching.

Water Samples (Tables 2.4-1 and 2.5-2)

The adit water (K10059801), the upstream (K10059802), and the downstream (K10059804) samples did not exceed any water quality standards in either the dissolved metals or the total recoverable metals screens.

**3.132.5 Structures**

No structures were found at the site, although some scrap metal and rotten boards on the dump just east of the adit may be the remains of a shed.

**3.132.6 Safety**

Entry into Adit 1 is possible, even though the opening is small. The timbers inside appear rotten and unstable. This site is easy to reach and is readily visible from the Sonora Gulch trail. Fire rings in the vicinity indicate recent camping in the area.

Adit 2 is open and untimbered. However, access is difficult and few people are likely to visit the site.
Figure 3.132-1. Topographic map of the Sonora Prospect, Shoshone County, Idaho (U.S. Geological Survey Burke 7.5-minute topographic map).
Figure 3.132-2. Sketch map of the Sonora Prospect.
Figure 3.132-3. Looking south from the Sonora Gulch jeep trail at the waste dump for Adit 1 at the Sonora Prospect (1998 photo series, Roll K19, frame #23).
Figure 3.132-4. Looking south at the caved portion of Adit 1 at the Sonora Prospect (1998 photo series, Roll K19, frame #15).
Figure 3.132-5. Small opening into Adit 1 at the Sonora Prospect, showing the timbers inside (1998 photo series, Roll K19, frame #16).

Figure 3.132-6. Looking south toward Adit 1 at the Sonora Prospect from the surface of the waste dump (1998 photo series, Roll K19, frame #18).
Figure 3.132-7. Open Adit 2 at the Sonora Prospect, looking south (1998 photo series, Roll K19, frame #21).

Figure 3.132-8. Side view of the waste dump for Adit 2 at the Sonora Prospect. The view is to the west, across the clear-cut swath on the slope (1998 photo series, Roll K19, frame #22).
BIBLIOGRAPHY


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 _______ xutm _______ yutm _______ zutm _______
Quad Name _____________ Principal Meridian ______
Township ___________ Range ___________ Section _______ 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

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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 ____ Riparian/marsh
____ 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, ____ Chalcopyrite, ____ 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 ______________________________

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

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

<table>
<thead>
<tr>
<th>Commodity(s)</th>
<th></th>
<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/hoole ____ 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>
<thead>
<tr>
<th>TABLE 1 - ADITS, SHAFTS, PITS, AND OTHER OPENINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opening Number</td>
</tr>
<tr>
<td>Type of Opening</td>
</tr>
<tr>
<td>Ownership</td>
</tr>
<tr>
<td>Opening Length (ft)</td>
</tr>
<tr>
<td>Opening Width (ft)</td>
</tr>
<tr>
<td>Latitude (GPS)</td>
</tr>
<tr>
<td>Longitude (GPS)</td>
</tr>
<tr>
<td>Condition</td>
</tr>
<tr>
<td>Ground water</td>
</tr>
<tr>
<td>Water Sample #</td>
</tr>
<tr>
<td>Photo Number</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 collapsed, 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 effecting or is very likely to be effecting 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>
<thead>
<tr>
<th>TABLE 2 - DUMPS, TAILINGS, AND SPOIL PILES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Number</td>
</tr>
<tr>
<td>Waste Type</td>
</tr>
<tr>
<td>Ownership</td>
</tr>
<tr>
<td>Area (acres)</td>
</tr>
<tr>
<td>Volume (cu yds)</td>
</tr>
<tr>
<td>Size of Material</td>
</tr>
<tr>
<td>Wind Erosion</td>
</tr>
<tr>
<td>Vegetation</td>
</tr>
<tr>
<td>Surface Drainage</td>
</tr>
<tr>
<td>Indicators of Metals</td>
</tr>
<tr>
<td>Stability</td>
</tr>
<tr>
<td>Location with respect to Floodplain</td>
</tr>
<tr>
<td>Distance to Stream</td>
</tr>
<tr>
<td>Water Sample #</td>
</tr>
<tr>
<td>Waste Sample #</td>
</tr>
<tr>
<td>Soil Sample #</td>
</tr>
<tr>
<td>Photo Number</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 if 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= None, 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 w/respect to Stream: IN=In contact with normal stream, NEAR=in riparian zone or floodplain, OUT=Out of floodplain

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8. SAMPLES

Take samples only on National Forest lands.

**TABLE 3 - WATER SAMPLES FROM MINE SITE DISCHARGES**

<table>
<thead>
<tr>
<th>Sample Number</th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Date sample taken</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sampler (Initials)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discharging From</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feature Number</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Indicators of Metal Release</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicators of Sedimentation</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Distance to stream (ft)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Latitude</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Longitude</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field pH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field SC</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Flow (gpm)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Method of measurement</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Photo Number</td>
<td></td>
<td></td>
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</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>
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<tr>
<td>Sampler (Initals)</td>
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<td></td>
</tr>
<tr>
<td>Stream Name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicators of Metal Release</td>
<td></td>
<td></td>
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<tr>
<td>Indicators of Sedimentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Latitude</td>
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<tr>
<td>Sample Longitude</td>
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<tr>
<td>Field SC</td>
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<tr>
<td>Flow (gpm) Method of measurement</td>
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<tr>
<td>Method of measurement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photo Number</td>
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<td></td>
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</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

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<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sample Number</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Date of sample</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>Sampler (Initials)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sample Type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Waste Type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Feature Number</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sample Latitude</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sample Longitude</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Photo Number</strong></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>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>
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<td></td>
</tr>
<tr>
<td>Sample Type</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>Likely Source of Contamination</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feature Number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicators of Contamination</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 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
TABLE 7 - HAZARDOUS WASTES/MATERIALS

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

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10. STRUCTURES

For structures on or partially on National forest lands.

<table>
<thead>
<tr>
<th>TABLE 8 - STRUCTURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
</tr>
<tr>
<td>Number</td>
</tr>
<tr>
<td>Condition</td>
</tr>
<tr>
<td>Photo Number</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)

_________________________________________________________________________________
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):
________________________________________________________
Appendix B
Database Fields
NEWLOC
WA 1
ORANGENUM
451
MAPLOC
1
DEPOSIT
Eagle Creek Mine

MRDSREC
MILSREF
0160790528
PERIODPROD

ORE
COMMOD
Au
REFERENCE

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

257
MAPNAME
BURKE
QUAD
WALLACE
POP
1KM
TOE
M
YFC
MPF
SITENAME
DISTRICT
COUNTY
SECQUAD
SECQUADSCL
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.

Appendix F
Properties That Could Not Be Located
PROPERTIES THAT COULD NOT BE LOCATED

**Dixie Queen Prospect (Site No. SP-8), Faset Peak 7.5-minute quadrangle.**
Alternate name—Sonny Boy.

Two attempts were made to locate this property by J.D. Kauffman and W.C. Rember in 1996 and one attempt was made by J.D. Kauffman on July 15, 1997.

The prospect is shown on the Forest Service map and on Kun’s map (Kun, 1974). Both maps indicate that this prospect is on the northwest slope above North Gold Creek just north of the center of the W½, section 5, T. 53 N., R. 1 E, Faset Peak 7.5-minute quadrangle. The Dixie Queen pack trail extends up North Gold Creek from its junction with Branch North Gold Creek to the Pend Oreille Divide Road (extension of Bunco Road). Three separate areas on this northwest slope were searched on the three visits with no indication of workings, old access trails, or other mining related activities. Binocular inspection of the northwest slope from the Pend Oreille Divide Road revealed several bare slope areas slightly further up North Gold Creek on the northwest slope that indicated possible dumps. However, it was decided that, without better location information, no further attempts to locate the Dixie Queen were warranted.

Later examination of Anderson’s Shoshone County report (Anderson, 1940, Plate II) found that he had located the Dixie Queen on the east or southeast side of North Gold Creek (although the Dixie Queen is not in Shoshone County and therefore not described in the report, it is on Anderson’s map). Because most of his other locations are reasonably accurate, it is likely that the Dixie Queen prospect is on this southeast side, and an old trail may well lead to it from the Dixie Queen Trail. If the prospect is on this side of North Gold Creek, it is likely in the SW¼, NE¼, section 5.

**Sage Prospect (Site No. SP-28), Bayview 7.5-minute quadrangle.**

J.D. Kauffman and W.C. Rember attempted to locate this property on July 15, 1997.

The access road to this prospect as shown on the Bayview quadrangle map crosses private land, the Green Creek Ranch, and is gated off about 1.5-2 miles west of the prospect at the end of the county road. Another potential access route via Rough Creek is also gated off on a private access. No attempt was made to contact either of the property owners because the prospect appears to be on private land and would have little or no impact on nearby Forest Service land.
Inland Group (Site No. SP-43), Hayden Lake 7.5-minute quadrangle.  
Alternative name—Tierney.

J.D. Kauffman attempted to locate this site on July 23, 1997.

The prospect is reported to be on Line Creek. A logging road up Line Creek has been reclaimed and contoured from the first switchback to beyond the area where SP-43 is supposed to be. Walked up the reclaimed road approximately ½ mile, then up the slope to the east. Located an old overgrown road on the ridge top. The road forks, one fork going on the northeast and one on the northwest side of the ridge, but no prospects were found. The road is completely overgrown with brush, in addition to being littered with abundant deadfall and fallen trees, and was nearly impassable on foot.

Jennings (Site No. SP-50), Spades Mountain 7.5-minute quadrangle.

J.D. Kauffman attempted to locate this property on July 24, 1997.

Anderson (1940) has a description of this property and reports several adits above and below the Ohio Match Railroad track. Forest Service Road 209 now follows the old grade, but no waste dumps, adits, or other evidence of workings was found. The slope is covered with dense timber and/or thick brush and is nearly impenetrable on foot. Other Forest Service roads and logging roads in the area were driven or walked, but again no workings were located. Anderson’s locations have, overall, been very accurate, so the Jennings workings probably are in the vicinity.

Great Western Copper (Site No. SP-51), Hayden Lake 7.5-minute quadrangle.  
Alternate names—Jack Hill; Big Prong Mining and Milling Company.

This is the same as the Hayden Lake Property (SP-52), which was apparently originally thought to be a separate property.

J.D. Kauffman attempted to locate this property on July 24, 1997.

Access to this prospect is up Mokins Creek. A dirt road exits off County Road 3090 but is posted about ¼ mile from the turnoff. The map shows the dirt road terminating a short distance beyond where the gate is located. Because the prospect may be on private land and appears to have no impact on Forest Service land, further effort to locate the prospect was considered unnecessary.
High Cropping Group (Site No. SP-64), Spades Mountain 7.5-minute quadrangle.

J.D. Kauffman attempted to locate this property on August 4, 1997.

The prospect is supposed to be on a southeast spur ridge of Skitwish Ridge about ¾ mile south of Skitwish Peak. A foot traverse was made on several jeep trails in the vicinity, as well as off the trails to the ridge top and along the ridge for several hundred yards. No evidence of prospects was found except for an old bulldozer trail. However, no prospect cuts or trenches were found associated with this trail.

Idaho Queen (Site No. SP-67), Bumblebee Peak 7.5-minute quadrangle.

J.D. Kauffman attempted to locate this property on July 31, 1997.

This property is supposed to be along the east side of Forest Service Road 209 and reportedly had production. However, no evidence of the property could be found in the vicinity of our location. A traverse was made uphill from the road about 400 feet, then across the slope in the vicinity of our location, then down to about 50-100 feet above the road and back to the point of origin. A 1983 claim notice for the Windy Sea #38 and #40 was found along the road, but no waste dumps or adits were found. In places, the old North Fork Coeur d'Alene road or trail was visible about 10 feet above present road level. If the Idaho Queen was at or near road level, it may have been removed by construction of Forest Service Road 209. Alternatively, our location may be incorrect. A check of the slope for about one mile along the road did not locate any evidence of the property.

Horseshoe (Site No. SP-70), Skitwish Peak 7.5-minute quadrangle.

J.D. Kauffman attempted to locate this property on July 31, 1997.

Our location has this prospect just northeast of the switchback where Forest Service Road 2358 crosses a tributary to John Creek at an elevation of about 2800 feet. A foot traverse was made up the east slope from the switchback to the edge of a brush-covered clear cut, then along contour up valley until the creek was intersected (about ¼ mile up the drainage from the switchback), then down the stream bed to the road. No evidence of workings, old trails, debris, or other indications of activity were found except for a few very old cut tree stumps. Several cobbles of vein quartz were found in the stream bed, so there is at least an indication of veins in the area. The slopes in the vicinity are covered with mature stands of fir 1-3 feet in diameter, with patches of hemlock saplings in the undergrowth.
Coeur d'Alene - Robish Mountain Mining Company, Ltd. (Site No. SP-73), Skitwish Peak 7.5-minute quadrangle.

J.D. Kauffman attempted to locate this property on August 4, 1997.

The access road shown on the topographic map that is in the vicinity of our site location is densely overgrown with brush and was virtually impassable on foot. The area is heavily timbered or, where clear cut, extensively overgrown with brush. Without an exact location for this prospect, further attempts to find this prospect are not practical.

Coal Creek Group (Site No. SP-79), Steamboat Creek 7.5-minute quadrangle.

J.D. Kauffman attempted to locate this property on August 18, 1997.

Our location for this group was about 1 mile up Coal Creek. No workings or indications of mining activity were found in that area. However, a spray-painted rock reading “← Coal Creek Mining Co. →” was found along Forest Service Trail 41 (Coal Creek Trail) roughly 1 mile up the trail, or about 1,000 feet south (upstream) from the foot bridge across Coal Creek. This group of claims may have been staked because of a geochemical anomaly for uranium, as indicated by the reference source (an Atomic Energy Commission report). If this is the case, there are probably no workings at this site.

Paperul and Graham (Site No. SP-81), probably on Kellogg East or Kellogg West 7.5-minute quadrangle.

J.D. Kauffman attempted to locate this property on August 18, 1997 and again on September 17, 1997.

Our initial site location showed this property about 2 miles up Coal Creek on the Steamboat Creek 7.5-minute quadrangle. The August 18 attempt found no evidence of prospects in that area. After a further check of the reference, it was determined that the prospect was probably 4-5 miles up Coal Creek near Graham Ridge or Graham Mountain. Forest Service personnel also indicated that there was a prospect in that vicinity. However, a hike about 5.5 miles up Coal Creek Trail (Trail #41) on September 17 failed to locate any workings or other evidence of the prospect. No further attempt is warranted unless an exact location can be determined.
Juno Mine (Site No. SP-88), Cataldo 7.5-minute quadrangle.

J.D. Kauffman attempted to locate this property on August 5, 1997.

Walked approximately 3 miles on logging road (shown as a four-wheel-drive road on the topographic map) that splits from Forest Service Road 806 above the main Coeur d’Alene River and then turns northwest on the slope above the North Fork of the Coeur d’Alene River. Located the R. 1 E./R. 2 E. line along the road and went about ¾-1 mile beyond. Could find no workings or other indications of mining activity, although some old overgrown roads, probably for logging, were seen in the vicinity of our SP-88 location. The timber is dense and mature with a significant amount of deadfall and fallen trees, and any workings could be obscure and easily overlooked.

Coeur d’Alene West Fork Mining (Site No. SP-112), on Kellogg East 7.5-minute quadrangle.

E.H. Bennett attempted to locate this property on July 23, 1997.

No evidence of a prospect or mine workings was found in the vicinity of the IGS site location in section 23, T. 49 N., R. 3 E., on the West Fork of Moon Gulch.

Radio Prospect (Site No. SP-114), Lane 7.5-minute quadrangle.

W.C. Rember attempted to locate this property in July or August and J.D. Kauffman made a second attempt on September 18, 1997.

Anderson’s map (1940, Plate II) shows this prospect on the west side of the head of the south branch of Varnum Creek, the area Rember searched without success. After further examination of Anderson's report, it was noted that his map of the workings showed the adit driven into an east slope. This was the area searched by Kauffman by hiking into the Varnum Creek drainage on Forest Service Road 1597C (now a trail) from its origin on Forest Service Road 614. No evidence of the prospect was found in this area either, although the slopes are extremely densely covered with timber and brush, and old workings could easily be overlooked.

Coeur d’Alene Central (Site No. SP-265), Polaris Peak 7.5-minute quadrangle.

Alternate name—Spokane Central Group.

J.D. Kauffman attempted to locate this property on August 13, 1997.

Our location for this prospect is on the slope west of the West Fork of Big Creek about 1 mile south of the top of the Gondola ride. This area is on either patented claims or land owned by Silver Mountain Ski Area. The patented claims have recently been logged, but no evidence of
mining activity, either past or recent, was found, although a flat, brushy area several hundred feet west of the drainage bottom, in the NE¼, SW¼, sec. 20, T. 48 N., R. 3 E., was suspicious because of a spring or seep possibly coming from the hillside, a characteristic often associated with caved adits. However, no firm evidence for an adit could be identified.

**Eclipse (Site No. SP-273), Polaris Peak 7.5-minute quadrangle.**

J.D. Kauffman attempted to locate this property on September 1, 1997.

This prospect is supposedly located on patented claims on McFarren Gulch about 1 mile upstream from the end of the road. After approximately 1 hour on foot through extremely dense brush, and only going about ½ mile, it was decided to abandon the attempt, especially considering only a very thin sliver of Forest Service land would be impacted by this property.

**Placer Creek Prospect (Site No. WL-469), Wallace 7.5-minute quadrangle.**

J.D. Kauffman attempted to locate this property on September 2, 1997.

This prospect is reported by Western Mining News 1974-75 Directory of Mines in Idaho to consist of 108 unpatented claims 3 miles south of Wallace. It does not report any workings or whether the claims are lode or placer. No workings were found in the “3 miles south of Wallace” vicinity along Placer Creek Road. Without better location information, further attempts to locate this prospect are not warranted.
<table>
<thead>
<tr>
<th>Prospect Name</th>
<th>Site No.</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hayden Lake Property</td>
<td>SP-52</td>
<td>Mislocated, should be same as SP-51</td>
</tr>
<tr>
<td>Riverside</td>
<td>SP-56</td>
<td>No access across North Fork Coeur d’Alene River</td>
</tr>
<tr>
<td>St. Louis Group</td>
<td>SP-59</td>
<td>Insufficient information to locate</td>
</tr>
<tr>
<td>Handspike</td>
<td>SP-60</td>
<td>No access across North Fork Coeur d’Alene River</td>
</tr>
<tr>
<td>Fortunate Mining Co.</td>
<td>SP-76</td>
<td>Private, no impact to Forest Service land</td>
</tr>
<tr>
<td>Coeur d’Alene Eagle Lead-Silver</td>
<td>SP-118</td>
<td>Questionable location, insufficient to locate</td>
</tr>
<tr>
<td>Mining Co., Ltd.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spokane Tunnel</td>
<td>WL-466</td>
<td>Questionable location, probably not FS land</td>
</tr>
<tr>
<td>Signal Silver-Gold Group</td>
<td>WL-476</td>
<td>Insufficient information to locate</td>
</tr>
<tr>
<td>Utah-Idaho Consolidated Uranium</td>
<td>WL-477</td>
<td>Insufficient information to locate</td>
</tr>
<tr>
<td>Prospect</td>
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</tbody>
</table>