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DIVISION OF
ENVIRONMENTAL QUALITY
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**Helena Site/ South Peacock Mine
Preliminary Assessment Report
Adams County, Idaho
TDD: 99-02-0009**

Contract: 68-W6-0008
February 2000

Region 10

START

Superfund Technical Assessment and Response Team

Submitted To: Monica Tonel, Task Monitor
U.S. Environmental Protection Agency
1200 Sixth Avenue
Seattle, WA 98101



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

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(New)

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May 17, 2000

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Reply To
Attn of: ECL-115

DIVISION OF
ENVIRONMENTAL QUALITY
BOISE REGIONAL OFFICE

Kleinschmidt, H.M.
c/o Catherine Dearborn
P.O. Box 268
La Honda, California 94020

Re: Helena Site and the South Peacock Mine, Adams County, Idaho

Dear Ms. Dearborn:

The U.S. Environmental Protection Agency (EPA), through its contractor, Ecology & Environment, Inc., has completed the preliminary assessment (PA) of the Helena site and the South Peacock mine. A copy of the report is enclosed.

Based on this PA and other pertinent information, EPA does not anticipate further investigation under the Federal Superfund Program. Because of apparent on-going releases and the threat of future releases from the site, however, EPA is referring this site to the State of Idaho for further consideration. In addition, EPA is reserving its authority to take future action under the Clean Water Act, as necessary, if releases are not addressed in a timely and appropriate manner.

Enclosed with this transmittal is E&E's recommendations memorandum which identifies environmental concerns observed at both sites. Specifically, it appears that there are on-going releases of pollutants from on-site waste rock piles to nearby creeks, e.g. Copper Creek. Without additional reclamation activity, future releases of pollutants from some waste rock dumps are likely. Additionally, a large unprotected shaft was observed at the South Peacock mine (see PA report, Attachment A, photo 1-13). We believe this poses a physical hazard and suggest that you address it, as appropriate.

EPA appreciates your cooperation during the assessment process. If you have any questions, please feel free to contact me at (206) 553-0323.

Sincerely,

Monica Tonel
Site Assessment Manager

cc: See Reverse

cc: Dave Tomten, EPA-IOO
Bruce A. Schuld, IDEQ ✓
Eric Wilson, Idaho Department of Lands
Jim Egnew, Payette National Forest



ecology and environment, inc.

International Specialists in the Environment

1500 Wells Fargo Center , 999 Third Avenue
Seattle , Washington 98104
Tel: (206) 624-9537 , Fax: (206) 621-9832

MEMORANDUM

DATE: March 1, 2000

TO: Monica Tonel, Task Monitor, EPA, Region 10, Seattle, WA

FROM: Daniel Weiss, START Project Manager, Ecology & Environment, Inc., Seattle, WA

SUBJ: Site Recommendations
Helena/ South Peacock Mine Site
Council, Idaho

REF: Contract No. 68-W6-0008
Technical Direction Document No. 99-02-0009

cc: Gary Sink, START Project Officer, EPA, Region 10, Seattle, WA
David Byers, START Program Manager, E & E, Seattle, WA
Linda Foster, START Project Leader, E & E, Seattle, WA

This recommendation memorandum has been developed for the Helena/ South Peacock Mine site in Council, Idaho, as part of a Preliminary Assessment (PA).

Helena Site/South Peacock Mine is an inactive gold and silver mines located in northwestern Adams County, Idaho. This site consists of two mines that are located approximately 2,000 feet apart. The site has been in operation since approximately 1867; however, there is no evidence of a mill at either mine. Although no tailings piles were observed, several waste rock piles were observed, as well as adits, on site. One of the waste rock piles is in contact with Copper Creek. Without additional maintenance, future releases of waste rock are likely. At the Helena site, two seeps flow from one waste rock pile into Copper Creek. Based on site conditions no further action at the site under the Comprehensive Environmental Response, Liability, and Compensation Act (CERCLA) is recommended.

If you have any questions regarding this memorandum, please call me at (206) 624-9537.

**HELENA SITE/ SOUTH PEACOCK MINE
PRELIMINARY ASSESSMENT REPORT
ADAMS COUNTY, IDAHO**

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LIST OF ACRONYMS

<u>Acronym</u>	<u>Definition</u>
AIM	Abandoned and Inactive Mines
cfs	cubic feet per second
E & E	Ecology and Environment, Inc
EPA	United States Environmental Protection Agency
IDEQ	Idaho Department of Environmental Quality
IDF&G	Idaho Department of Fish and Game
IDL	Idaho Department of Lands
ISCS	Idaho State Climate Service
lbs	pounds
PA	Preliminary Assessment
PPE	probable point of entry
START	Superfund Technical Assessment and Response Team
TDL	Target Distance Limit
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WRCC	Western Regional Climate Center

**HELENA SITE/ SOUTH PEACOCK MINE
PRELIMINARY ASSESSMENT REPORT
ADAMS COUNTY, IDAHO**

1. INTRODUCTION

Ecology and Environment, Inc., (E & E) has been tasked by the United States Environmental Protection Agency (EPA) to provide technical support for completion of a Preliminary Assessment (PA) at the Helena and South Peacock Mine sites in Adams County, Idaho. E & E completed PA activities under Technical Direction Document No. 99-02-0009, issued under EPA Region 10 Superfund Technical Assessment and Response Team (START) Contract Number 68-W6-0008.

The specific goals for the Helena and South Peacock Mine Sites PA, identified by EPA, are to:

- Determine the potential threat to public health or the environment posed by the site;
- Determine the potential for a release of hazardous constituents into the environment; and
- Determine the potential for placement of the site on the National Priorities List.

Completion of the PA included reviewing existing site information, collecting receptor information within the site's range of influence, determining regional characteristics, and conducting a site visit. This document includes a discussion of background site information (Section 2); a discussion of migration/exposure pathways and potential receptors (targets; Section 3); and a list of pertinent references (Section 4).

2. SITE BACKGROUND

2.1 SITE LOCATION

Site Name: Helena Site/ South Peacock Mine
CERCLIS ID No.: IDSFN1002114
Location: Adams County
Council, Idaho 83612
Latitude: 45° 10' 10" North
Longitude: 116° 39' 04" West
Legal Description: Boise Meridian, Section 12, Township 21 North, Range 3 West
Site Owner: Kleinschmidt, H.M.
c/o Catherine Dearborn
P.O. Box 268
La Honda, California 94020

Site Contact: Bruce A. Schuld
Idaho Division of Environmental Quality
Boise, Idaho
(208) 373-0554

2.2 SITE DESCRIPTION/ OWNERSHIP HISTORY

The Helena Site and the South Peacock Mine are inactive gold and silver mines located in northwestern Adams County, Idaho. These mines are approximately 2,000 feet apart. No information exists to determine if the two mines were run as one operation. Both mines are located in the Payette National Forest, adjacent to the Hells Canyon Wilderness Area, approximately 40 miles north of Council, Idaho (Figures 2-1 and 2-2). The site is at an elevation of 6,800 feet above sea level (USGS 1990a). Access to the site is via an out-of-service United States Forest Service (USFS) road.

The sites are not fenced or gated and access is unrestricted. There are no structures or buildings present at either site. At the South Peacock Mine, there are two adits on the west side of the East Fork of Copper Creek, and one adit on the east side (Figure 2-3). The Helena Site is a large open pit mine located on the west side of Copper Creek. The slope at these sites ranges from 15 to 25 degrees (USGS 1990a).

The sites, which are currently owned by Catherine Dearborn, began operations in approximately 1876. Previous owners include: Levi Allen 1862 to 1876, Issac Lewis 1877 to 1886, Albert and Reinhold Kleinschmidt 1886 to 1891, American Mining Company 1891 to 1893, Northwest Copper Company 1896 to 1898, Boston and Seven Devils Copper Company 1899 to 1901, Idaho Copper Company 1919 to 1935, John Darland and T.A. Darland 1940, Otto Russell 1962 to 1963, Copper Ridge Mines 1964 to 1966, and Darland and Robbins 1970 to 1971 (Mitchell 1997).

2.3 SITE OPERATIONS AND WASTE CHARACTERISTICS

The sites began operations in approximately 1876 (Mitchell 1997). There is no evidence of a mill on site; therefore, it is assumed that the ore was shipped to mills in Cuprum or other nearby towns by road or to the Snake River by the Kleinschmidt grade, a small gauge road that reportedly transported ore to boats on the Snake River (Mitchell 1997). Site operations included copper, silver, and gold mining. The extent of mining activities beyond the driving of adits is unknown. Surface operations may have involved the crushing of raw ore only. The START assumes any milling, amalgamation, or floatation occurred off site. Possible sources of hazardous substances could be expected if milling and refining of ore did occur on-site.

2.4 PREVIOUS INVESTIGATIONS

The USFS performed a site visit in July 1994 at the Helena Site/ South Peacock Mine during their Abandoned and Inactive Mines (AIM) Site Discovery process. No samples were taken during this visit; however, the pH of Copper Creek was measured at 7.2. The investigation concluded that this was a low priority site and recommended that the open adits and holes located on the facility be filled (USFS 1994).

2.5 START ACTIONS

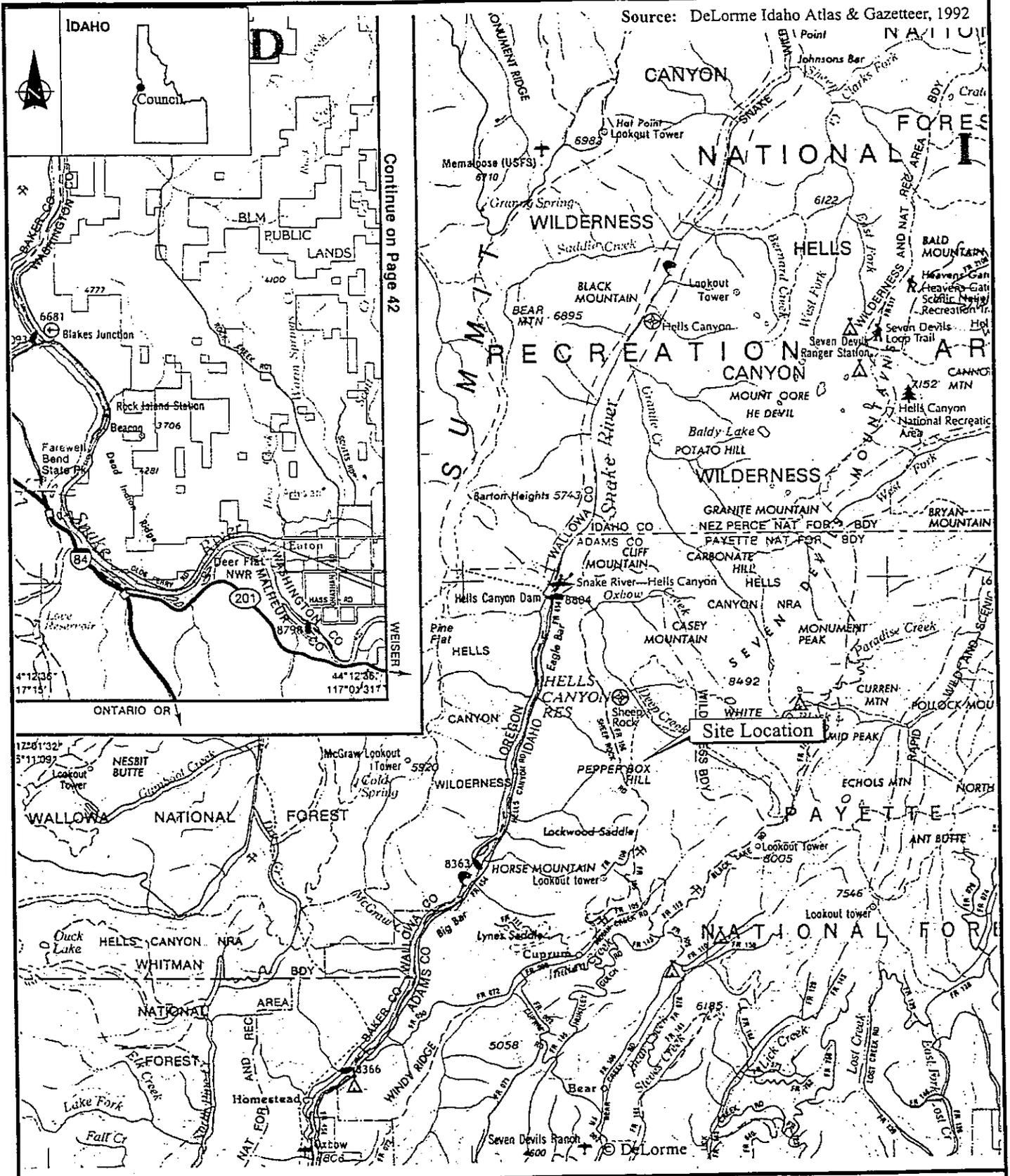
The START performed a site visit on October 7, 1999. There are no structures or buildings present at the mine sites. At the South Peacock site there is a large unprotected shaft that poses a physical hazard. There was a forest fire in the area in 1988 which destroyed any of the structures remaining at the site (USFS 1994).

The START did not observe tailings present at either site; however, several piles of waste rock were observed. At the South Peacock Mine, there are three waste rock piles having estimated volumes of

1,793.90 cubic yards, 1,076.40 cubic yards, and 239.20 cubic yards. One of these waste rock piles is bordered by the East Fork of Copper Creek (Attachment A; photograph 7). At the Helena Site, there is one waste rock pile that has an estimated volume of 4,500 cubic yards. This waste rock pile also is bordered by the East Fork of Copper Creek (Attachment A; photograph 19).

During the site visit, the START observed two separate groundwater seeps discharging from the waste rock pile at the Helena open pit. The first seep discharges approximately 30 feet above the East Fork of Copper Creek and flows downgradient into the creek. The second seep begins approximately 15 feet above the East Fork of Copper Creek and flows downgradient into the creek. In both seeps, the START observed abundant algal and moss growth that was not observed in the main creek bed upstream from the two seeps (Attachment A; photographs 16, 17, and 18). No other environmental concerns were noted by the START during the site visit.

Source: DeLorme Idaho Atlas & Gazetteer, 1992



Continue on Page 42

Site Location



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Seattle, Washington

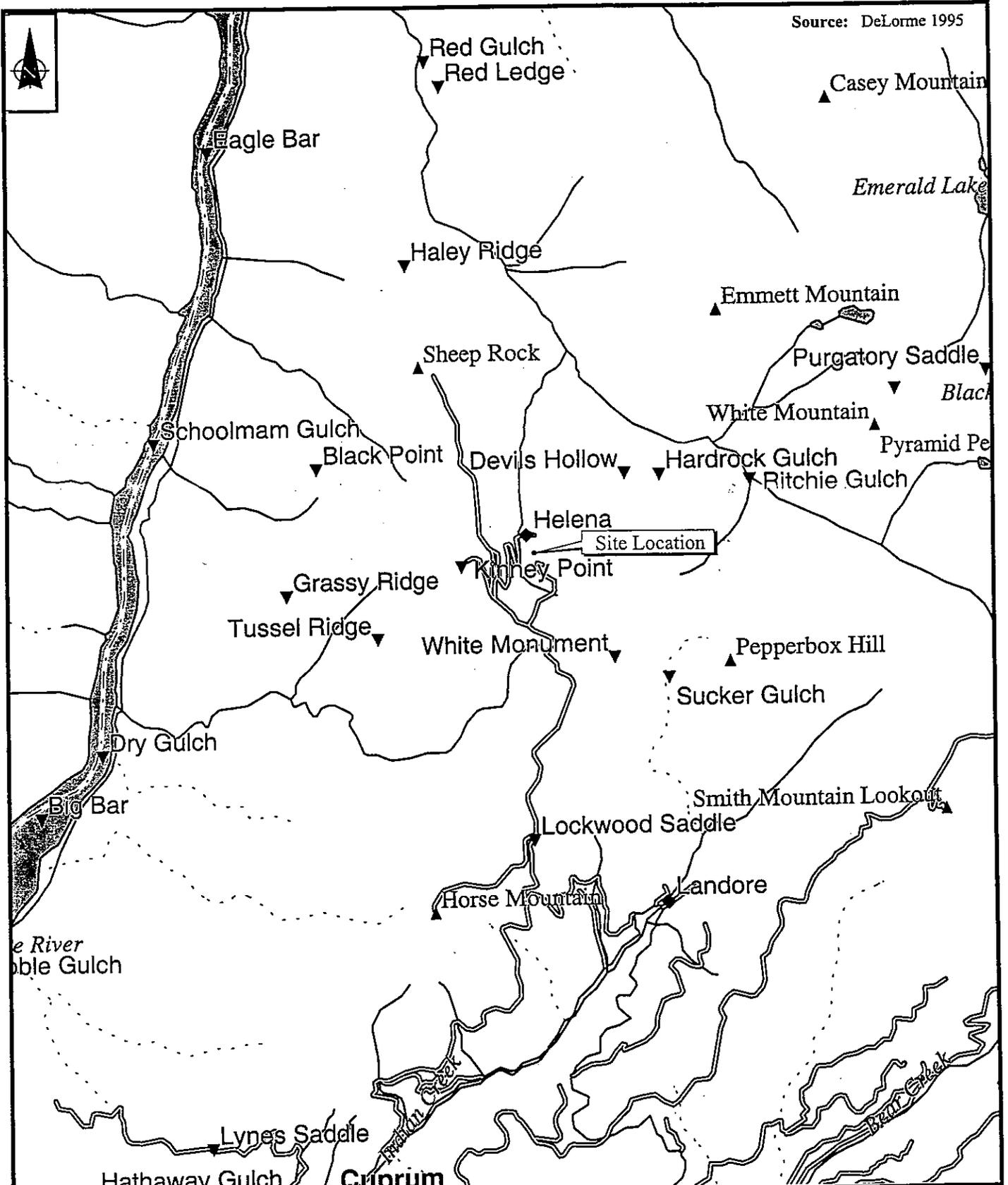
HELENA SITE/
S. PEACOCK MINE PA
Council, Idaho

Figure 2-1
SITE VICINITY MAP

0 2 4
Approximate Scale in Miles

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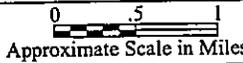
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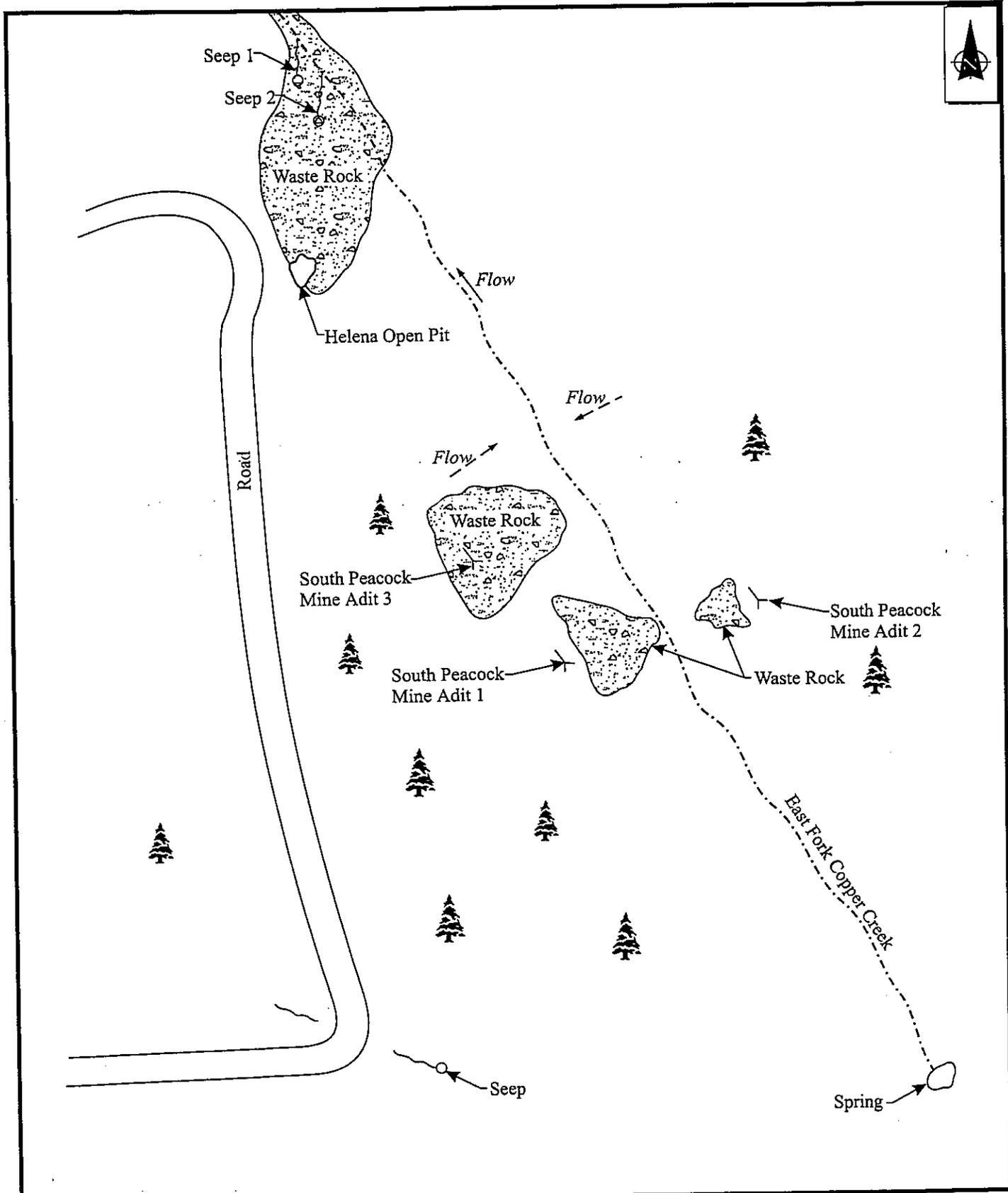
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 Seattle, Washington

HELENA SITE/
 S. PEACOCK MINE PA
 Council, Idaho

Figure 2-2
 SITE LOCATION MAP



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 Seattle, Washington

HELENA SITE/
 SOUTH PEACOCK MINE PA
 Lowman, Idaho

Figure 2-3
 SITE MAP

Not to Scale

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 DB0901 2-3

3. MIGRATION/EXPOSURE PATHWAYS AND TARGETS

The following sections describe migration/exposure pathways and potential targets within the site's range of influence (Figures 3-1 and 3-2).

3.1 GROUNDWATER MIGRATION PATHWAY

Bedrock in the site vicinity is considered late Paleozoic undifferentiated Seven Devils group (Idaho Department of Lands [IDL] 1979). The Seven Devils group has thick layers of lava interbedded with thin, unconsolidated deposits overlain by thin soils (Idaho Department of Environmental Quality [IDEQ] 1992). The depth of individual aquifers is highly variable and water is present primarily in fractures, faults, and weathered zones that have developed on exposed surfaces (United States Geological Survey [USGS] 1994). Although there are no available soil surveys for this area (United States Department of Agriculture [USDA] 1999), the START estimated surficial soil types at both sites to be coarse textured with high infiltration rates.

The net precipitation for the Helena Site/ South Peacock Mine is estimated to be between 5 and 15 inches (EPA 1990).

No drinking water wells exist within a 4-mile radius of the site. The site is not located within a wellhead protection area (EPA 1999).

3.2 SURFACE WATER MIGRATION PATHWAY

The East Fork of Copper Creek flows through both the Helena and the South Peacock sites. At the South Peacock Mine site, which is upgradient of the Helena Mine site, each waste rock has its own probable point of entry (PPE; PPEs No. 1, 2, and 3). No seeps are associated with either the waste rock piles or the three adits (Figure 2-3).

Surface water at the Helena Site drains downgradient from the open pit into the East Fork of Copper Creek. There are two seeps discharging from the waste rock pile into the East Fork of Copper Creek. The first seep discharges approximately 30 feet above the East Fork of Copper Creek and flows downgradient into the creek. The second seep begins approximately 15 feet above the East Fork of

Copper Creek and flows downgradient into the creek. In both seeps, the START observed abundant algal and moss growth that was not observed in the main creek bed above the two seeps (Attachment A; photographs 16, 17, and 18). The points at which each seep enters the East Fork of Copper Creek are PPE 4 and PPE 5 (Figure 3-3). The target distance limit (TDL) begins at the PPEs and extends from PPE 5 in the East Fork of Copper Creek northward approximately 1.75 miles to Deep Creek. Deep Creek flows into the Snake River approximately 5.25 miles north of the confluence of Copper and Deep Creeks. The remainder of the TDL follows the Snake River for approximately 8 miles (Figure 3-2) (USGS 1990a and 1990b).

At both sites waste rock was observed actively eroding into the creek. This waste rock likely contains various metals. Snowmelt and storm water runoff from the waste rock would enter the creek in the spring. At the Helena site, waste rock was observed in the stream channel and its flood plain.

Flow rate data for the East Fork of Copper Creek are not available; however, the START estimates the average flow is less than 10 cubic feet per second (cfs). The average daily stream flow for Deep Creek and the Snake River are reported to be 20 cfs and 22,380 cfs, respectively (IDEQ 1992).

The two year, 24-hour rainfall event for the area is 2 inches (Western Regional Climate Center [WRCC] 1999). There is no information available regarding flood frequency in the vicinity of the site; however, the START assumes that the sites does not lie in a floodplain. The START did not observe any flood containment structures on either site. Although there is no available soil survey information for this area (USDA 1999), the START estimated surficial soil types at both sites to be coarse textured with high infiltration rates. The upland drainage area of the site is estimated to be 345 acres and the slope of the site ranges from 0 to 25 degrees (USGS 1990a).

The Snake River supports chinook salmon, sockeye salmon, white sturgeon, resident trout species, and small-mouth bass. The sockeye salmon (*Oncorhynchus nerka*), a federal-designated endangered species, and the chinook salmon (*Oncorhynchus tshawytscha*), a federal-listed threatened species, are located within the 15-mile TDL (USFWS 2000, Anderson 1999). Deep Creek is used as a migratory pathway for summer steelhead (*Oncorhynchus mykiss*), a federal-listed threatened species (USFWS 2000). Additionally, the bald eagle (*Haliaeetus leucocephalus*), a federal-listed threatened species, is known to use the Snake River corridor, within the site's TDL, for a wintering habitat (IDF&G 1999).

Deep Creek, due to its remote location, receives an annual harvest of 100 pounds (lbs) per mile. The annual harvest for Deep Creek within the 15-mile TDL for the site is 575 lbs. The Snake River has

an estimated annual harvest of 1,000 lbs per mile. There are 8 miles of the Snake River within the TDL totaling 8,000 lbs per year (IDEQ 1992).

Deep Creek has been identified as a "Stream Segment of Concern" under Idaho's antidegradation agreement. This designation entitles the creek to additional water quality controls as required under the Clean Water Act of 1987 (IDEQ 1992). Deep Creek was included on the State of Idaho's 1996 303d list of impaired waterbodies, but is now proposed for delisting. The status of Deep Creek is currently under review (Tomten 2000). The Snake River is designated as a Wild and Scenic River and as a recreation area (IDEQ 1992). Additionally, the areas to the north and east of the site, within the 15-mile TDL, are considered part of the Hells Canyon Wilderness Area and National Recreation Area.

It is estimated from National Wetland Inventory maps that no federally designated wetlands exist within 15 miles downstream of the site (USFWS 1994a and 1994b).

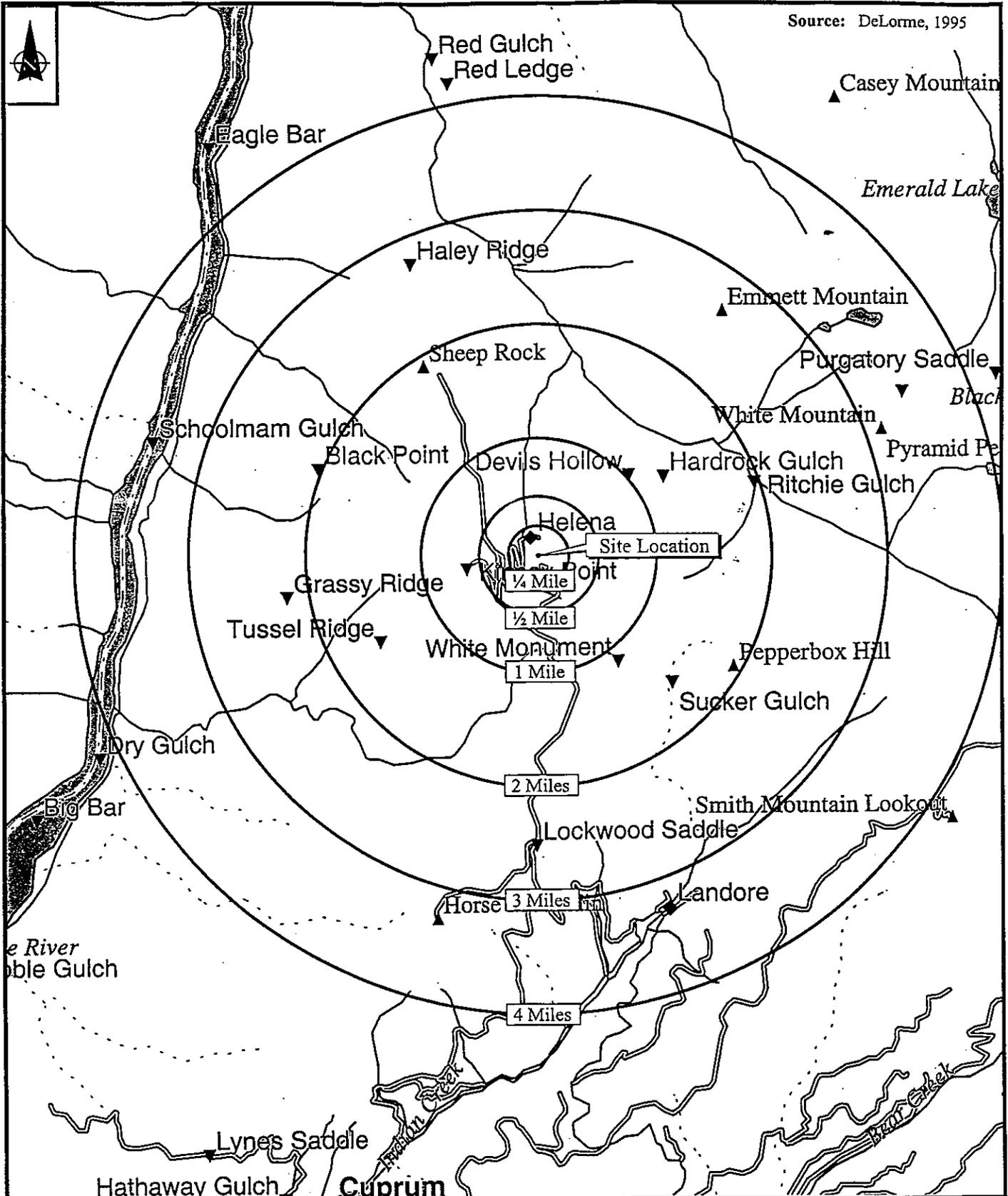
3.3 SOIL EXPOSURE PATHWAY

Access to the Helena Site/ South Peacock Mine site is unrestricted; however, due to the site's remote location, it receives little recreational use. However, hikers, hunters, and rockhounds are known to use the area to some extent. There are no known residences within 1 mile of the site. The closest permanently occupied residence is approximately 6 miles southwest of the site in Cuprum, Idaho (USGS 1990a). There are no known schools or day care facilities located within 1 mile of the site (EPA 1999). There are no resources located on a potential source at the site (Archer 1999). Additionally, there are no terrestrial sensitive environments located on a potential source (IDF&G 1999). The START did not observe any areas of soil contamination.

3.4 AIR MIGRATION PATHWAY

There are no residents known to be located within 4 miles of the site (EPA 1999). No commercial agriculture, silviculture, or designated recreation areas are known to exist within 0.5 mile of either site (Archer 1999). There are no federally designated wetlands within a 4-mile radius of the site (USFWS 1994a and 1994b). There is a peregrine falcon (*Falco peregrinus anatum*) nesting box within the 4-mile target distance limit (IDF&G 1999). The peregrine falcon is a federal-listed endangered species. Helena Site/ South Peacock Mine is located approximately 3.4 miles to the south of the Hells Canyon Wilderness Area and National Recreation Area Wilderness area (USGS 1990a).

Source: DeLorme, 1995



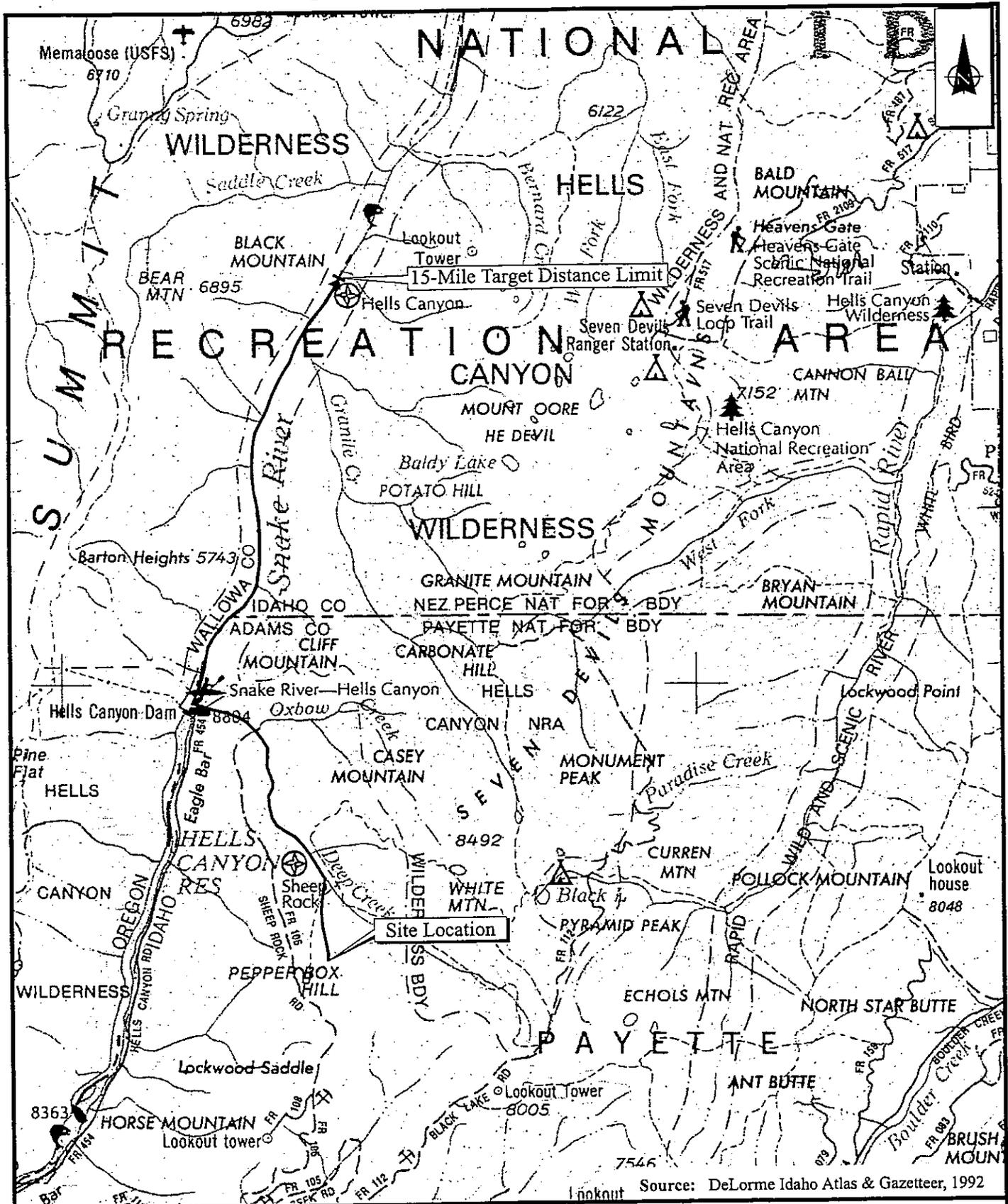
ecology and environment, inc.
International Specialists in the Environment
Seattle, Washington

HELENA SITE/
S. PEACOCK MINE PA
Council, Idaho

Figure 3-1
4-MILE MAP

0 5 1
Approximate Scale in Miles

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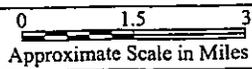
Source: DeLorme Idaho Atlas & Gazetteer, 1992



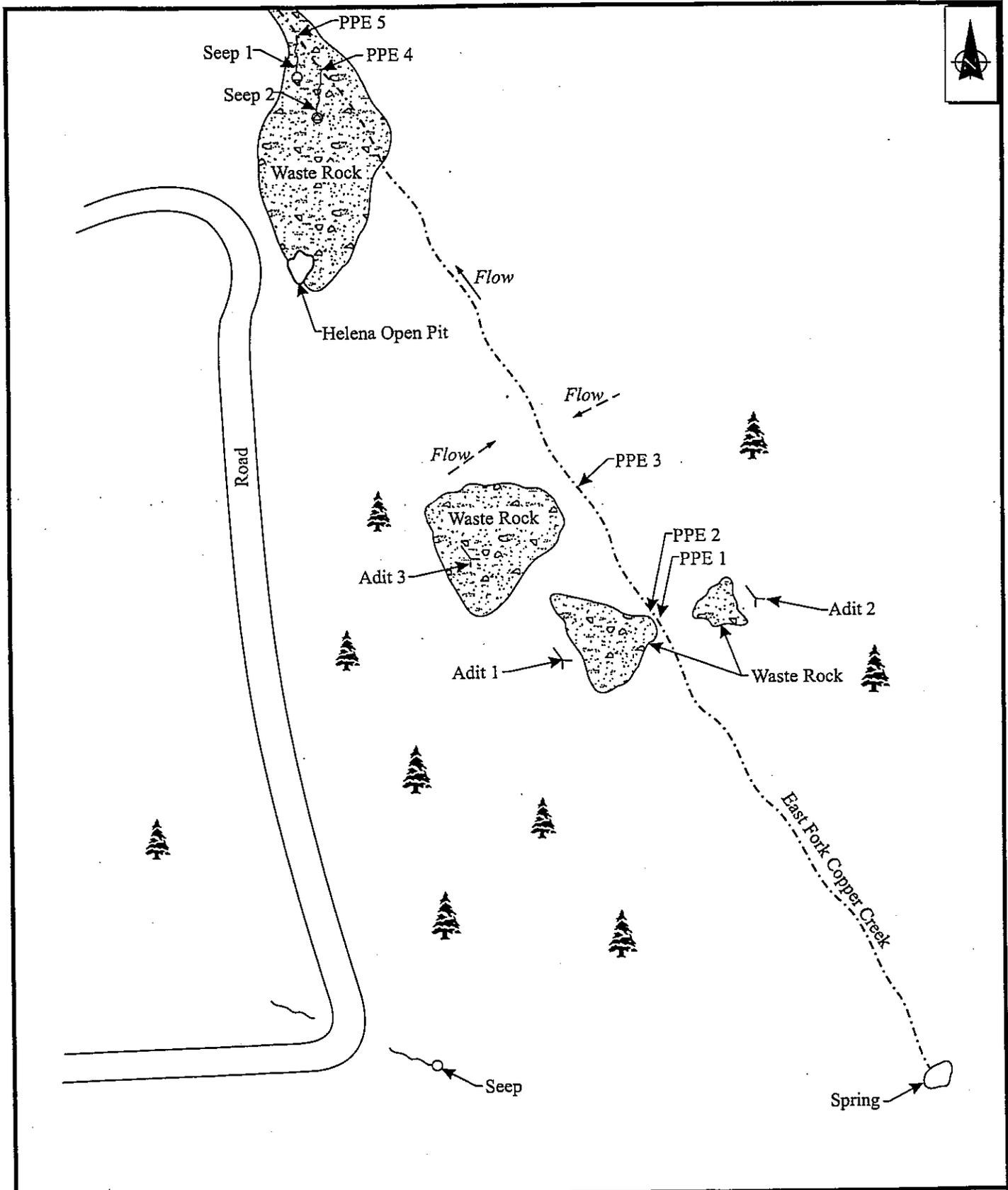
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HELENA SITE/
S. PEACOCK MINE PA
Council, Idaho

Figure 3-2
15-MILE MAP



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HELENA SITE/
 SOUTH PEACOCK MINE PA
 Lowman, Idaho

Figure 3-3
 SITE MAP

Not to Scale

Drawn:
 AES

DATE:
 12/10/99

JOB NO.
 DB0901SAT0

Dwg.No.
 DB0901 3-3

4. REFERENCE LIST

- Anderson, Don, June 6, 1999, personal communication, Biologist, IDF&G, telephone conversation with Dan Weiss, Ecology and Environment, Inc., Seattle, Washington, regarding Deep Creek Fishery.
- Archer, Jack, July 26, 1999, personal communication, Forester, USFS, telephone conversation with Dan Weiss, Ecology and Environment, Inc., Seattle, Washington, regarding agriculture and silviculture in the vicinity of the site.
- Idaho Department of Environmental Quality (IDEQ), 1992, *Preliminary Assessment of Red Ledge Mine*, Cambridge, Idaho.
- Idaho Department of Fish & Game (IDFG), February 22, 1999, letter sent to Ecology and Environment, Inc., Seattle, Washington, regarding endangered species near Helena and South Peacock Mines, Idaho.
- Idaho Department of Lands (IDL), Bureau of Mines and Geology, 1979, *Geologic Map of Grangeville Quadrangle*, Idaho.
- Mitchell, Victoria E., April 1997, *History of the Peacock Mine, Adams County Idaho*, Staff Report 97-14 Idaho Geological Survey, Moscow, Idaho.
- Tomten, David, February 24, 2000, personal communication, Geologist, US EPA, telephone conversation with Dan Weiss, Ecology and Environment, Inc., Seattle, Washington, regarding current status of Deep Creek, Idaho.
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service, May 24, 1999, Fax from Tom Yawkey of USDA informing Dan Weiss, Ecology and Environment, Inc., Seattle, WA, on the availability of soil surveys in the area.
- U.S. Environmental Protection Agency (EPA), June 9, 1999, "Geographical Information Query System, "Helena/ South Peacock Mine, Council, Idaho. ", www.epa.gov/r10earth/.
- , December 1990, Hazard Ranking System, Final Rule, Net Precipitation Values, Idaho.
- U.S. Fish and Wildlife Service (USFWS), February 21, 2000, http://www.fws.gov/r1srbo/outreach/steelhead_chinook_sockeye.html, "Steelhead" "Sockeye" "Chinook", 1998.
- , 1994a, National Wetland Inventory map, 1:24,000 series, Cuprum, Idaho-Oregon.
- , 1994b, National Wetland Inventory map, 1:24,000 series, Cuprum NW, Oregon-Idaho
- U.S. Forest Service (USFS), 1994, AIM Site Discovery Form, Helena and South Peacock Mine, Idaho.
- U.S. Geological Survey (USGS), 1990a, 7.5-minute series topographic maps, White Monument Quadrangle, Idaho.
- , 1990b, 7.5-minute series topographic maps, Squirrel Prairie Quadrangle, Idaho.

—, 1994, Groundwater Atlas of the United States, Segment 7, Idaho, Oregon, and Washington.
Western Regional Climate Center, 1999, Map of Two Year Twenty-four Hour Rainfall, Idaho.



ATTACHMENT A

PHOTOGRAPHIC DOCUMENTATION

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PHOTOGRAPH IDENTIFICATION SHEET

Camera Serial #: EPA# 645493

TDD #: 99-02-0009

Lens Type: 35mm

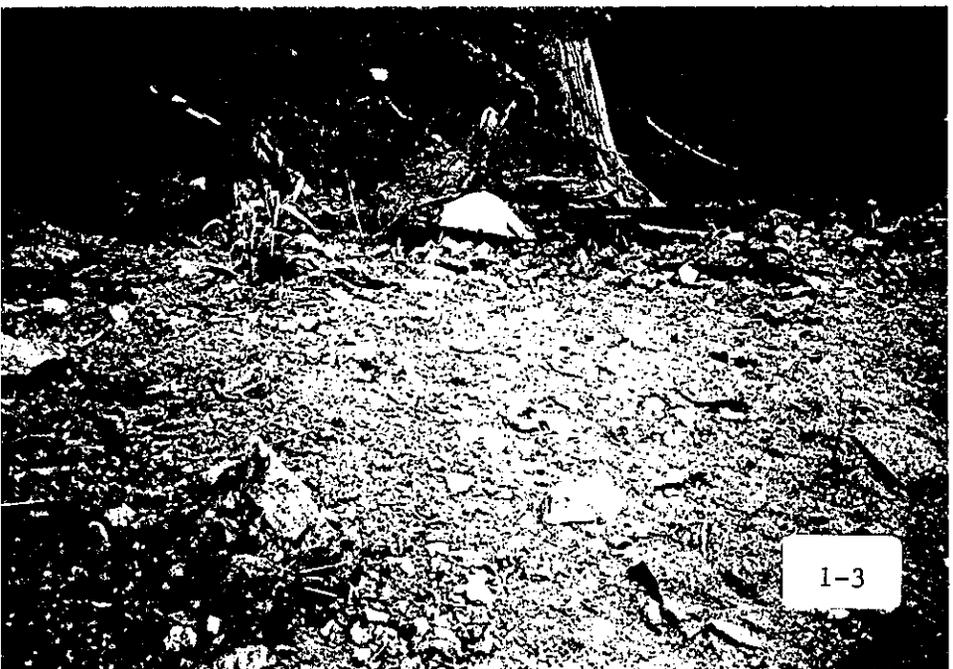
Site Name: Helena Site/ South Peacock Mine

Photo No.	Direction	Date	Time	By	Description
1	E	10/7/99	13:45	LF	Possible adit with seep discharge, collapsed opening.
2	W	10/7/99	13:46	LF	Seep drainage.
3	Down	10/7/99	13:47	LF	Suspected waste rock at first adit, South Peacock Mine.
4	Down	10/7/99	13:57	LF	First adit, also collapsed with no observed discharge, South Peacock Mine.
5	Down	10/7/99	14:00	LF	Close-up of first adit, South Peacock Mine.
6	NW	10/7/99	14:03	LF	Waste rock at first adit, South Peacock Mine.
7	E	10/7/99	14:05	LF	East fork of Copper Creek which flows past the base of the adit waste rock drainage, South Peacock Mine.
8	E	10/7/99	14:07	LF	Second adit as viewed from the creek, South Peacock Mine.
9	Down	10/7/99	14:10	LF	Close-up of second adit, South Peacock Mine.
10	NW	10/7/99	14:23	LF	Waste rock near the third adit, South Peacock Mine.
11	SE	10/7/99	14:25	LF	View of third adit, South Peacock Mine.
12	E	10/7/99	14:27	LF	Close-up of third adit. No observed discharge, South Peacock Mine.
13	Down	10/7/99	14:32	LF	Mine shaft, approximately 30 feet deep, South Peacock Mine..
14	E	10/7/99	14:40	LF	First photo of the Helena mine. Panoramic view of suspected mine pit.
15	S	10/7/99	14:45	LF	Mine pit at Helena site.
16	W	10/7/99	14:47	LF	Tributary to Copper creek adjacent to waste rock piles at Helena's open pit area (same creek as S. Peacock).
17	E	10/7/99	14:52	LF	Seep originating from waste rock, Helena Mine site. Flows to East fork of Copper Creek overland approximately 25 feet. Note algal growth.
18	Down	10/7/99	14:55	LF	Second seep originating in waste rock drainage, Helena Mine site. Note algal growth.
19	W	10/7/99	14:59	LF	East fork of Copper Creek from end of waste rock pile, Helena Mine site.

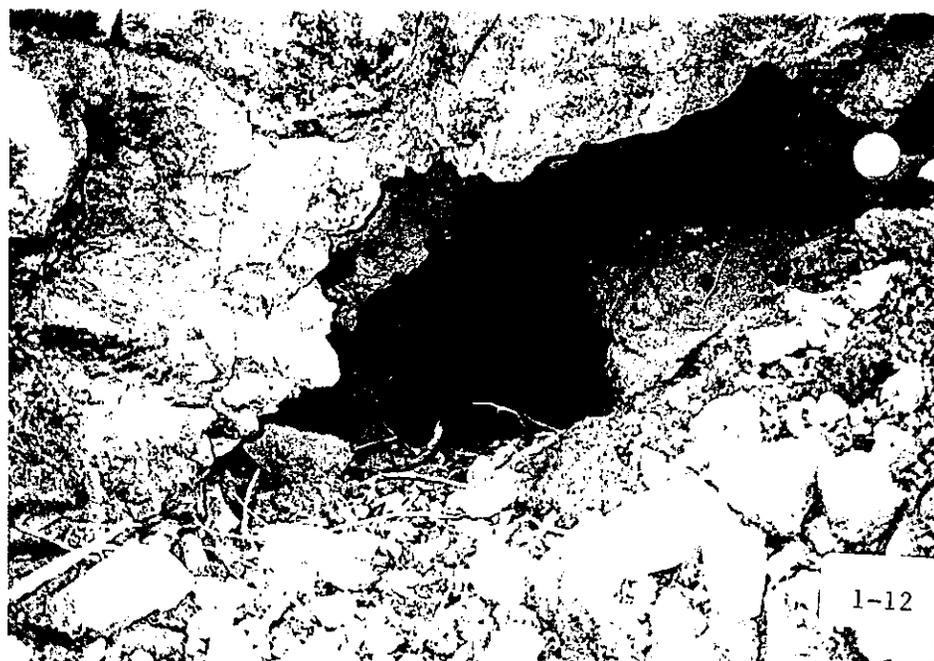
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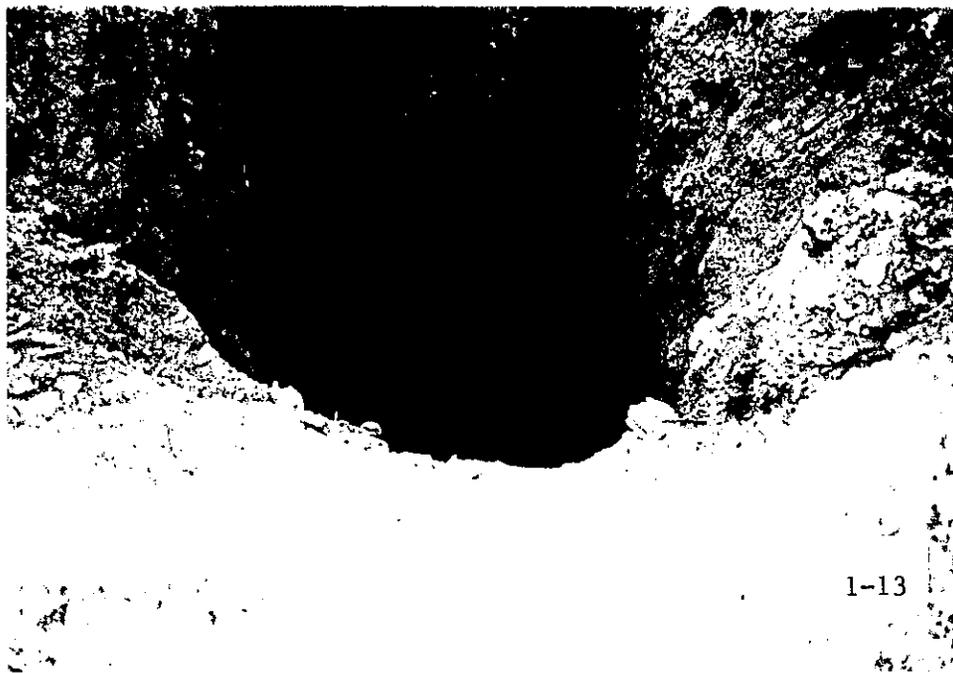
- D = Down.
- E = East.
- LF = Linda Foster.
- N = North.
- NW = Northwest
- S = South.
- SE = Southeast.

W = West.









1-13



1-14



1-15



1-16

