History of the Hoodoo Mine, Custer County, Idaho

Victoria E. Mitchell

Staff Report 97-8
April 1997

Idaho Geological Survey
Morrill Hall, Third Floor
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INTRODUCTORY NOTE

This report was prepared under a cooperative agreement with the U.S. Forest Service, Region IV, as part of a project to identify and describe inactive and abandoned mines in the state of Idaho. Work on this project included preparing detailed histories of mines in Region IV that had significant recorded production. The information in this report is from a number of published and unpublished sources in the Idaho Geological Survey's mineral property files. Where not otherwise noted, most of the mine production data is drawn from the U.S. Geological Survey's (USGS) annual volumes on *Mineral Resources of the United States* (1882-1923) and the equivalent volumes produced by the U.S. Bureau of Mines (USBM) (*Mineral Resources of the United States,* 1924-1931, and *Minerals Yearbook*, 1932 to present). Information on underground workings and mine equipment is generally from the annual reports of the Idaho Inspector of Mines (IMIR) published from 1899 to 1979. After 1974, the Mine Inspector's office was known as the Mine Safety Bureau, a section of the Idaho Department of Labor and Industrial Services. Detailed accounts of mine operations are, for the most part, drawn from the annual reports prepared by the companies for the State Inspector of Mines; these reports were required by law and the information contained in them formed the basis of the Mine Inspector's annual reports. Reports of recent developments are taken from the Idaho Geological Survey's (IGS) annual reports on the developments in mining and minerals in Idaho (from 1984 to present) or from similar reports produced by the Survey's predecessor, the Idaho Bureau of Mines and Geology (IBMG) from 1975 to 1984. Other published sources are referenced in the text. A complete bibliography is included at the end of the report. Where direct quotations are taken from source materials, the original spelling and grammar are preserved even in cases where they do not conform to currently accepted usage.

History of the Hoodoo Mine, Custer County, Idaho

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The Hoodoo Mine is in the Boulder Creek mining district in southwestern Custer County (Figure 1). It is at the end of the Slate Creek road, 7 miles south of the Salmon River. The mine workings range from 7,265 to 7,910 feet in elevation (Figure 2). The upper workings are subject to snowslides in the winter (Van Noy and others, 1986).

The Hoodoo is a replacement zinc-lead-silver deposit in argillite of the Salmon River sequence (Figure 3; Fisher and others, 1983). It is under (but close to) the regional thrust fault that separates the Salmon River sequence from overlying rocks (Hall, 1985). The main ore minerals are sphalerite and galena, which form massive lenses, veinlets, and areas of disseminated mineralization in brecciated argillite, limestone, and quartzite. The main ore zone averages 7.7 feet (2.3 meters) at the surface, but splits into two parts in the northern drift of the upper adit. The ore zones trend north and dip 60°-80° E. (Van Noy and others, 1986).

The original six claims and a millsite were located in 1930. Additional claims were added between 1951 and 1963 (Van Noy and others, 1986). In 1952, the owners of the mine (Wylie Gardner and L.R. Vance) received a Defense Minerals Exploration Administration (DMEA) contract for $46,270 to explore the property by diamond drilling. Government participation in the project was 50 percent.

[1]Idaho Geological Survey, Main Office at Moscow, University of Idaho, Moscow.

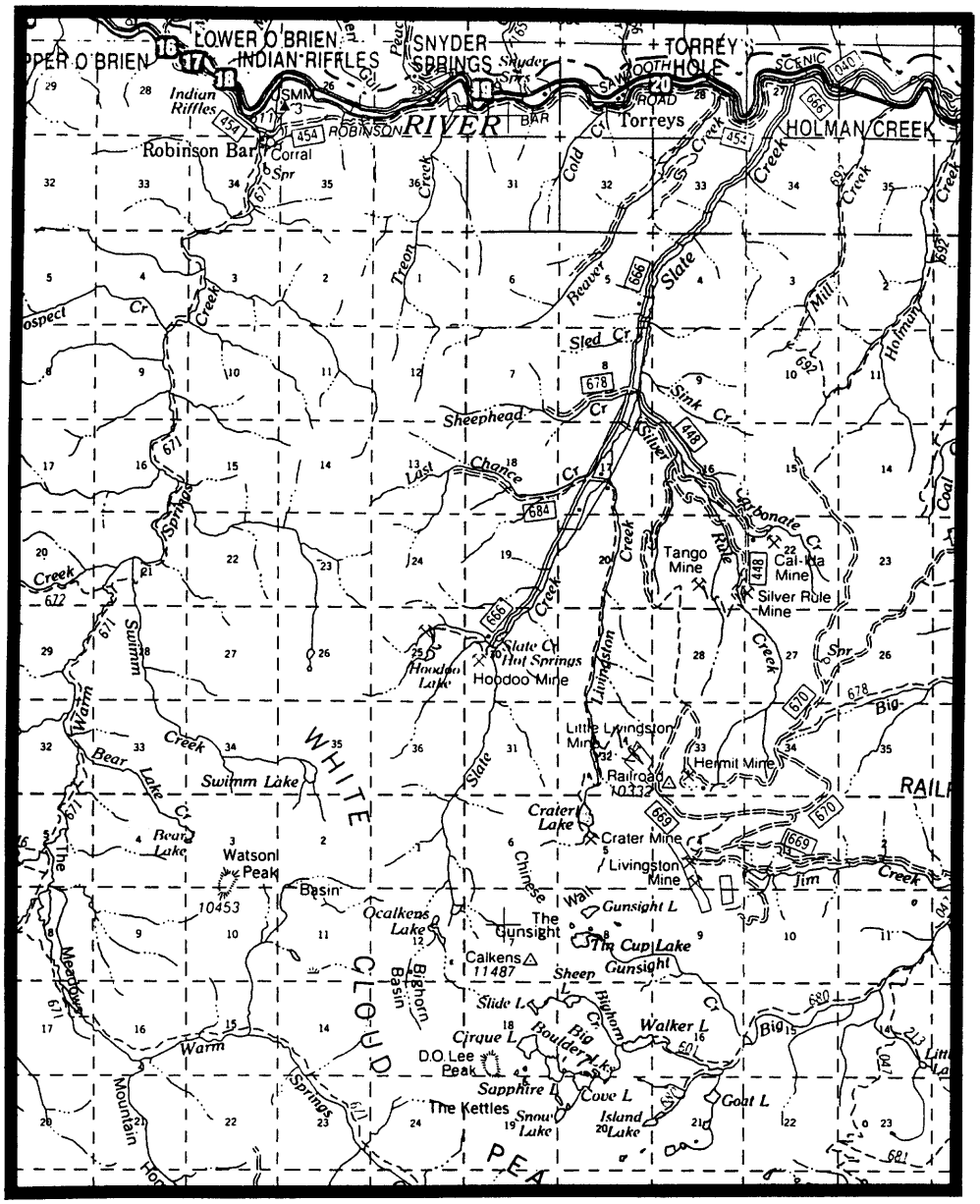

Figure 1. Location of the Hoodoo Mine and vicinity, Custer County, Idaho (U.S. Forest Service Sawtooth National Forest map, scale ½ inch = 1 mile).

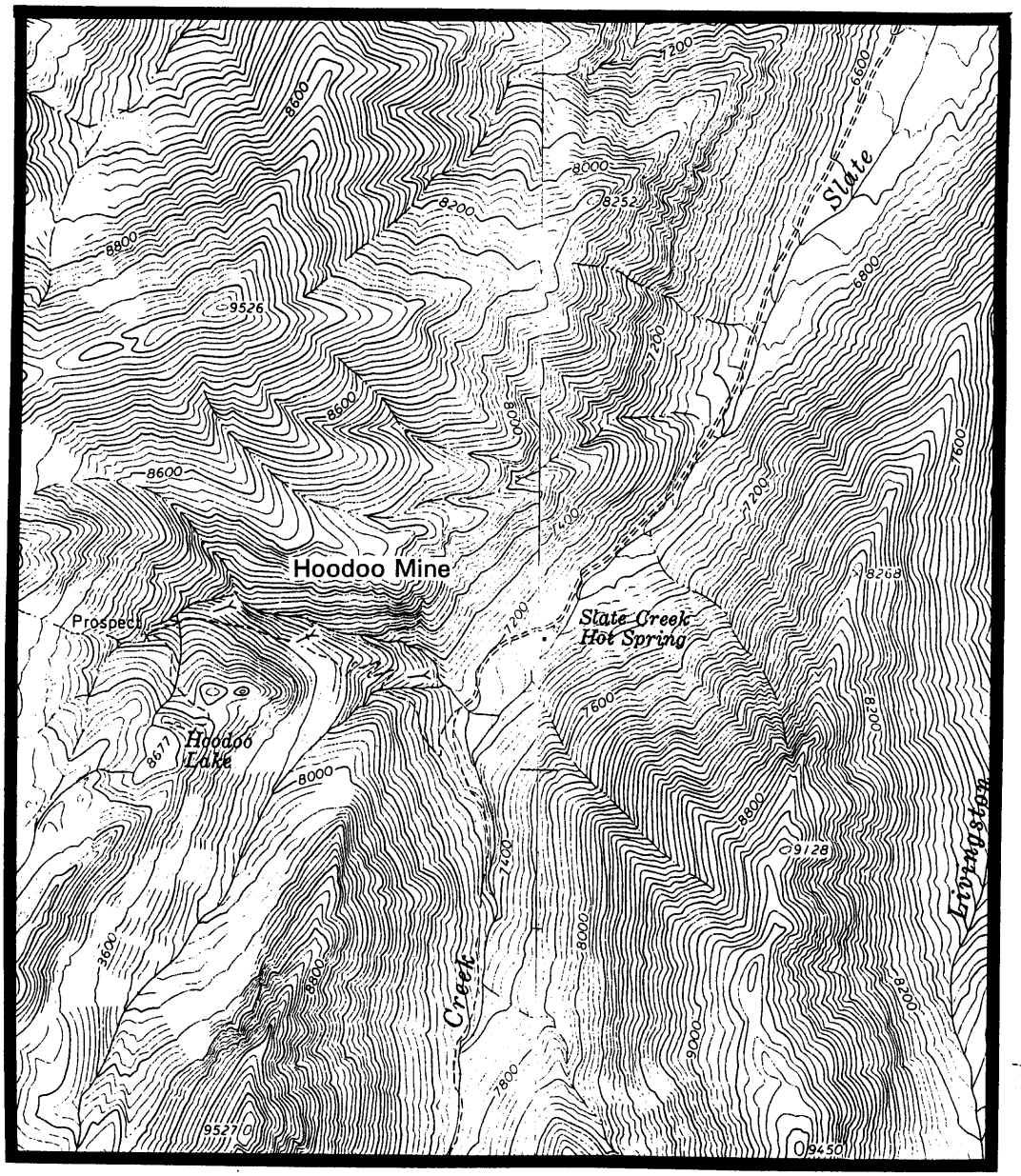

Figure 2. Topographic map of the Hoodoo Mine and vicinity (U.S. Geological Survey Robinson Bar and Livingston Creek 7.5-minute topographic maps).

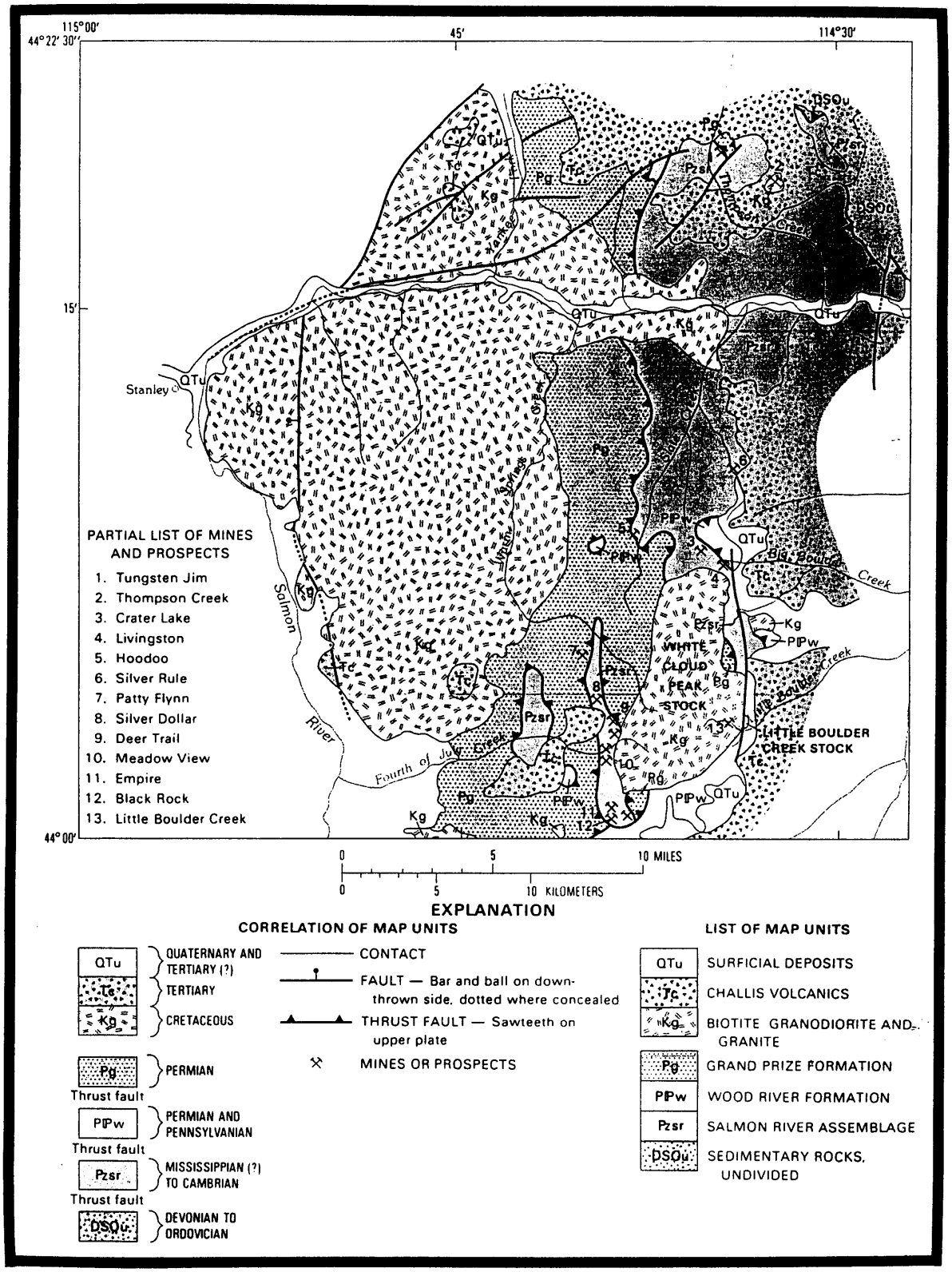

Figure 3. Simplified geologic map of the area around the Hoodoo Mine (Figure J3 from Hall, 1985).

The only underground working at the mine in 1952 was the 60-foot-long, caved Middle adit. Based on the results of the diamond drilling program, the Upper adit was driven to intersect the mineralized zone (Figure 4 and Table 1). Later, the 3,045-foot Lower adit was driven under the Upper adit. The Upper and Lower adits are joined by a 645-foot vertical raise developed by three levels. A 200 ton-per-day flotation mill began operating on the property in 1973. In early 1984, it was processing 98 tons each day and was producing both lead and zinc concentrates (Van Noy and others, 1986). The property had about 4,900 feet of underground workings by early 1974 (Figure 5 and Table 2).

In 1975, the USBM Metallurgical Research Centers at Reno and Salt Lake conducted beneficiation tests on ores from several Idaho mines, including the Hoodoo. The mine was one of two in Idaho outside Shoshone County that had notable zinc production in 1976. The mine was idle for "some months" during 1977 (IBMG), but serious consideration was being given to resuming production.

In 1980, the Hoodoo Mine produced barite from a 25-foot-wide vein. Approximately 4,200 tons was shipped to Missoula for use in drilling mud. The Hoodoo mill was sold to the Ensign Coil Company of Salt Lake City in 1981 (Figure 6). No production was recorded for the year.

Canyon Reserve reported substantial reserves at the Hoodoo, based on surface and underground geologic mapping done in 1990. In 1991, Canyon Reserve dropped out of the project, which had been a joint venture with Wombat Mining (a subsidiary of Kookaburra Gold). Only a small amount of surface work was done. Canyon was concerned that the mine location, which is very close to the Sawtooth National Recreation Area, would make it too difficult to get permits for a drilling program. In 1992 the mine was subject to an ownership dispute between Replacement Corporation and General Minerals.

The mine was examined by an IGS field crew during the summer of 1994 as part of a program to evaluate inactive and abandoned mines (Figures 7, 8, and 9). At that time, the USFS had extensively sampled the tailings pile and was monitoring ground water below the mine for contamination.

Total recorded production from the Hoodoo from 1971 to 1978 is 91,107 tons of ore. This yielded 35 ounces of gold, 168,552 ounces of silver, 6,250 pounds of copper, 160,535 pounds of lead, and 9,133,188 pounds of zinc. The DMEA project estimated that the Hoodoo contained about 42,000 tons of indicated reserves containing 8.9 percent zinc, 52,000 tons of inferred reserves averaging 10.5 percent zinc, and 44,000 tons of submarginal resources averaging 1.5 percent zinc. Van Noy and others (1986) estimated that the Hoodoo contained 870,000 tons of inferred resources. The ore contains recoverable lead, silver, and cadmium in addition to the zinc.

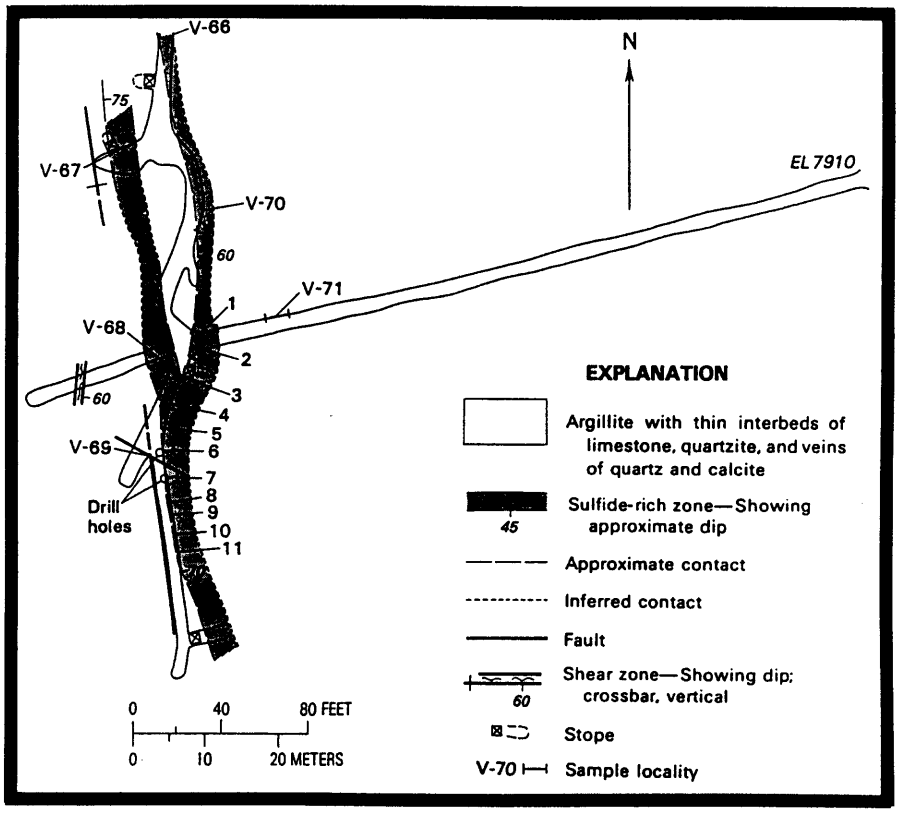

Figure 4. Map of the Upper adit at the Hoodoo Mine. The data for the sample localities shown on this map is given in Table 1 (Figure 43 from Van Noy and others, 1986).

Table 1. Data for samples shown on Figure 4 (page 263 *in* Van Noy and others, 1986).

[Samples 1-11: sample data from company maps and work done under DMEA contract. Tr, trace; N, none detected; leaders (-), not analyzed; 1 troy oz/ton=34.285 g/t]

Sample No.	Type	Length (ft)	Description	Gold (oz/ton)	Silver (oz/ton)	Lead (percent)	Zinc (percent)	Cadmium (percent)
V-66	Chip--	8.0	Black argillite with sulfides.	N	0.12	0.08	14.0	0.13
V-67	--do--	[1]20.0	---do---	N	.32	.42	12.0	.09
V-68	--do--	25.0	Black silicified argillite with sulfides.	N	.12	.13	16.0	.10
V-69	--do--	3.0	Across shear zone in black argillite.	N	.03	.013	2.6	--
V-70	--do--	10.0	Sulfide-rich rock-------	N	.10	.08	10.0	.04
V-71	--do--	10.0	Argillite with iron sulfides.	N	N	.006	.031	--
1	--do--	12.0	Across sulfide rich zone	--	.20	.20	10.3	--
2	--do--	10.0	---do---	--	.20	.20	13.6	--
3	Grab--	([2])	Argillite, limestone, quartz, sulfides.	--	.20	.25	8.5	--
4	--do--		---do---	--	.16	.22	5.6	--
5	--do--		---do---	--	.07	.15	7.8	--
6	Drill hole.	6.0	---do---	--	.18	2.10	4.9	--
7	--do--	6.0	---do---	--	Tr	.80	2.0	--
8	Grab--		---do---	--	.26	1.9	5.4	--
9	--do--		---do---	--	.18	.60	4.8	--
10	Grab--		Argillite, limestone, quartz, sulfides.	--	.40	1.0	6.9	--
11	--do--		---do---	--	.16	.6	2.6	--

[1]Represents a thickness of 15 feet across the mineralized zone.

[2]Blank, not measured.

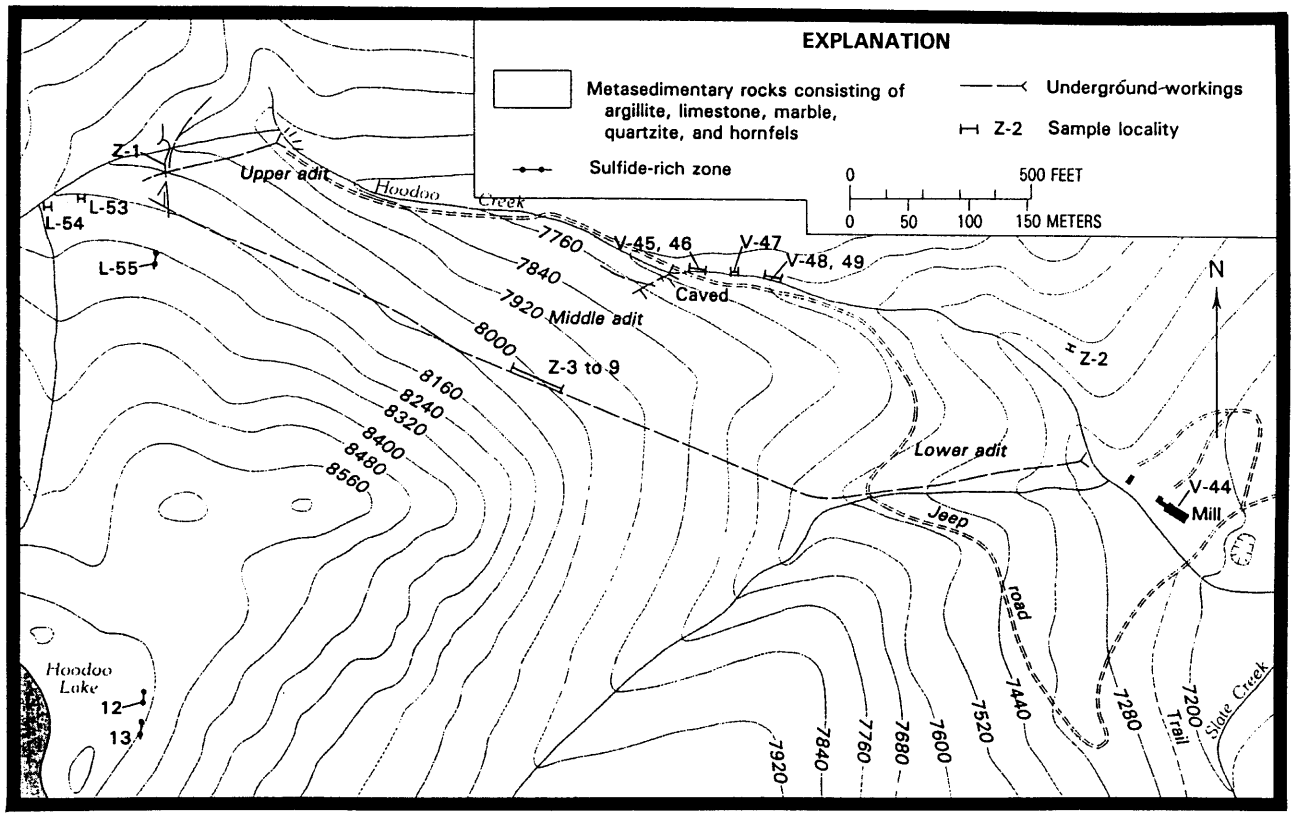

Figure 5. Map of the Hoodoo Mine area, showing the location of the mine workings. The data for the sample localities shown on this map is given in Table 2 (Figure 42 from Van Noy and others, 1986).

Table 2. Data for samples shown on Figure 5 (page 261 *in* Van Noy and others, 1986).

[Tr, trace; N, none detected; leaders (–), not analyzed; <, less than shown; 1 ft=0.3048 m; 1 troy oz/ton=34.285 g/t]

Sample No.	Type	Length (ft)	Description	Gold (oz/ton)	Silver (oz/ton)	Lead (percent)	Zinc (percent)
V-44	Grab--	([1])	Zinc concentrate from mill----	N	0.5	0.09	49.6
V-45	Chip--	25.0	Sheared quartzite with iron oxide stain.	N	N	<.01	.04
V-46	--do--	34.0	---do----------	N	Tr	<.01	.021
V-47	Chip--	25.0	Across fault zone----------	N	Tr	.12	.06
V-48	Chip--	40.0	Marble with sulfide minerals--	0.01	.03	<.02	.02
V-49	--do--	15.0	Calcium-silicate-rich rock----	N	N	.013	.02
L-53	Chip--	20.0	Argillite with few sulfide minerals.	Tr	.10	.06	.42
L-54	Random chip.		Limestone with few sulfide minerals.	Tr	.3	.68	.86
L-55	Chip--	10.0	Iron-oxide-stained argillite-limestone.	Tr	.9	.74	7.6
12	--do--	7.0	Outcrop of sulfide-rich zone--	--	--	--	13.4
13	--do--	6.0	---do----------	--	--	--	7.6
Z-1	--do--	6.5	Sulfide zone (386-foot level in raise).	Tr	.1	<.02	3.5
Z-2	Random chip.		Quartz pod----------	Tr	N	<.02	--
Z-3	Chip--	18.0	Sheared argillite----------	Tr	.2	<.02	.007
Z-4	--do--	18.0	---do----------	Tr	.1	<.02	.005
Z-5	--do--	18.0	---do----------	N	.1	<.02	.003
Z-6	--do--	8.0	---do----------	N	N	<.02	.002
Z-7	--do--	23.0	---do----------	Tr	Tr	<.02	.005
Z-8	--do--	15.0	---do----------	Tr	.2	<.02	.02
Z-9	--do--	60.0	---do----------	N	N	<.02	.01

[1]Blank, not measured.

Figure 6. Hoodoo Mine and mill, 1981, with the tailings pile in the foreground (Idaho Geological Survey photograph by Earl H. Bennett).

Figure 7. Mill building at the Hoodoo Mine, 1994 (Idaho Geological Survey photograph by Falma J. Moye).

Figure 8. Tailings area and mill building at the Hoodoo Mine, 1994 (Idaho Geological Survey photograph by Falma J. Moye).

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