History of the Silver Star Mine, Lemhi County, Idaho

Victoria E. Mitchell

Staff Report 97-17
April 1997

Idaho Geological Survey
Morrill Hall, Third Floor
University of Idaho
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CONTENTS

ILLUSTRATIONS

TABLES

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 The information in this report is from a number of published and unpublished sources in the Idaho Geological Survey's mineral property files.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.

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Victoria E. Mitchell[1]

The Silver Star Mine is located in Gold Star Gulch, a tributary of the East Fork of Boyle (now Tower) Creek, in an unorganized mining area about 12 miles north of Salmon (Figures 1 and 2). The property is marked by an outcrop that shows conspicuous coatings of azurite and malachite. Mineralization occurs along a 40- to 50-foot-wide zone of shattered and brecciated quartzite that strikes N. 70°-80° E. and dips steeply southeast. The breccia is cemented by white, fairly coarse grained quartz. The ore consists of scattered pods and granules of galena with lesser amounts of sphalerite, tetrahedrite, chalcopyrite, and pyrite (Anderson, 1959). The host rock is the Yellowjacket Formation (Figure 3; Ruppel and others, 1993).

Anderson (1959) described the property as follows (p. 84):

> The conspicuous surface mineralization made the property an early location that was long the center of considerable local interest. Multiple ownership in later years hindered work on the property.
>
> The development comprises a sizable open cut along the bold outcrop atop a low ridge extending out in a westerly direction from the lower front of the Beaverhead Range, and a 150-foot adit drift driven easterly from the end of the ridge at gulch level. The property was once equipped with a small gravity concentrator; but the mill was apparently dismantled long age [ago]. Some of the old mill tailings were apparently tabled at a more recent date.

In 1925, lessees working the property shipped one small lot of oxidized lead ore to Murray, Utah. Another lot of silver-lead ore was produced in 1926.

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

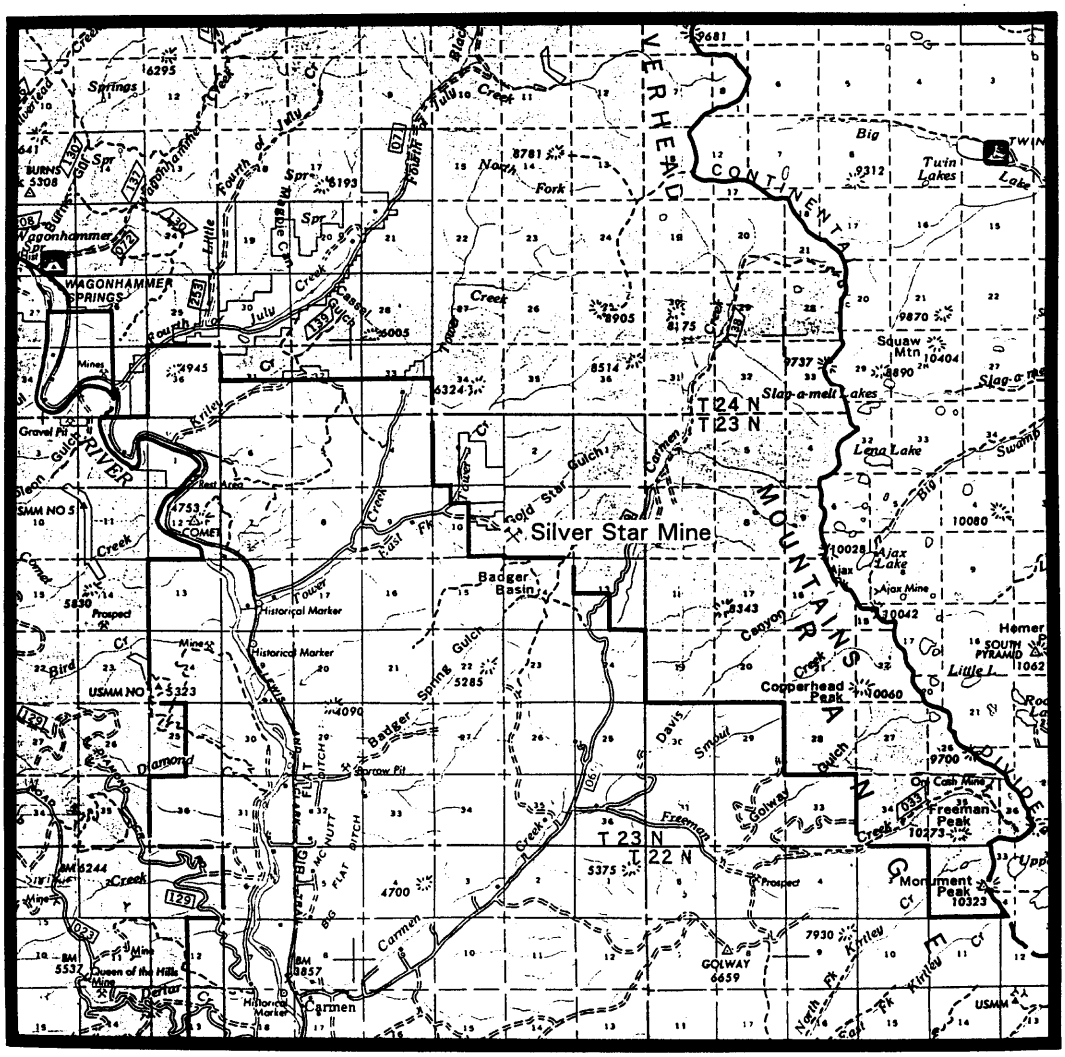

Figure 1. Location of the Silver Star Mine and vicinity (U.S. Forest Service Salmon National Forest map, scale 3/8 inch = 1 mile).

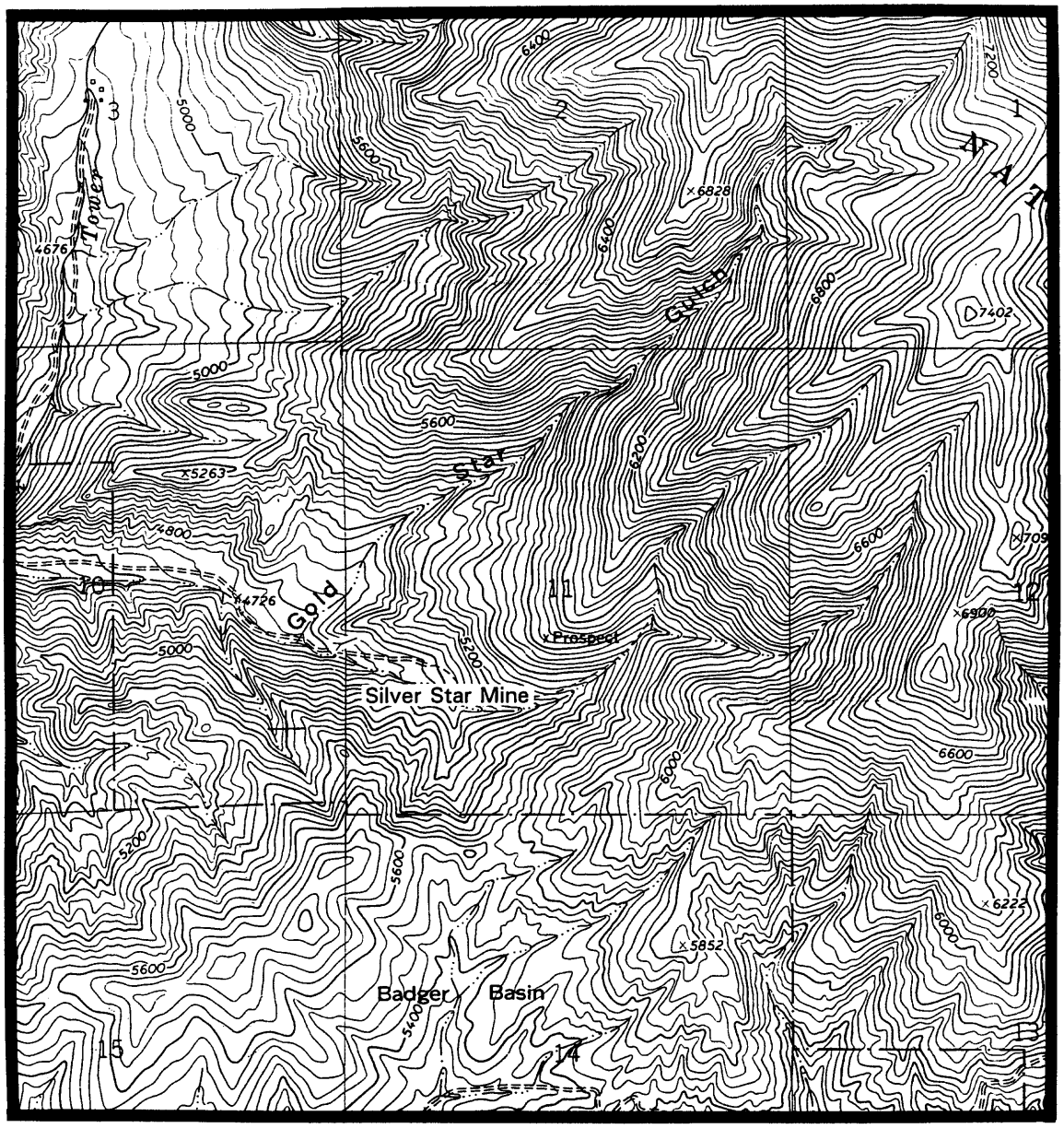

Figure 2. Topographic map of the Silver Star Mine and vicinity (U.S. Geological Survey Badger Spring Gulch 7.5-minute topographic map).

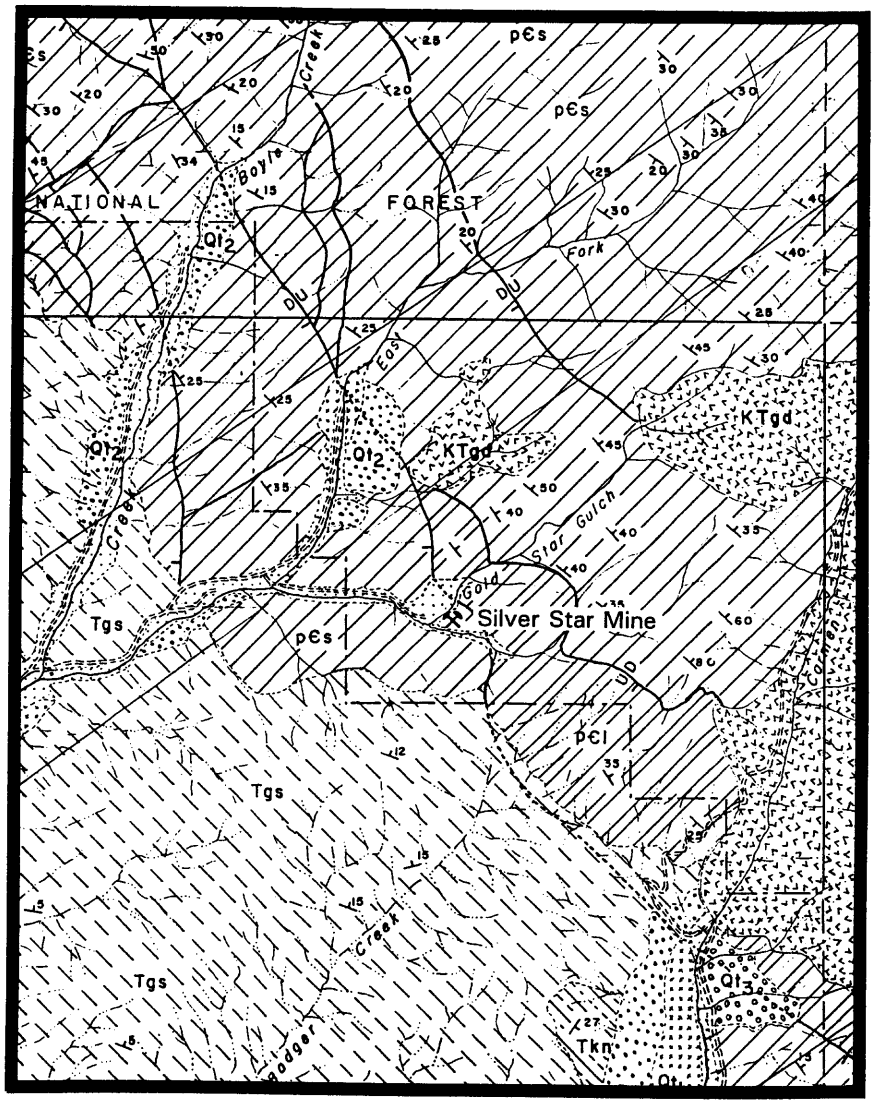

Figure 3. Geologic map of the Silver Star Mine and vicinity. pЄl = Middle Proterozoic Yellowjacket Formation; pЄs = Middle Proterozoic Lemhi Group; KTgd = Eocene monzogranite, granodiorite, quartz monzodiorite, and related intrusive granitic rocks; Tcv = Eocene Challis Volcanics; Tgs, Tkn = Pliocene to Eocene valley-fill rocks; Qt_1, Qt_2, Qt_3 = Pleistocene terrace gravels. The unlabeled light dot pattern in the creek bottoms is Quaternary alluvium. Heavy lines are faults (Plate 1 from Anderson, 1959, with rock units modified after Ruppel and others, 1993).

The Gibbonsville Mining and Exploration Company was organized in 1936 to "operate claims in the Gibbonsville area." (Table 1 shows the changes in legal status for this company.) The company operated the Silver Star and the adjacent Gold Bug for the next 4 years. In 1937, several hundred tons of low grade gold ore were mined from each property with a power shovel. The ore was trucked to Gibbonsville and milled in a custom flotation plant.

In 1938, the company constructed a 150-ton flotation plant at the mine. Machinery was purchased from the Harmony Mine and moved to Boyle Creek. The equipment included two diesel units, a 7-foot Hardinge ball mill, and 10 flotation cells. The company treated 2,778 tons of low-grade gold-silver ore and had 75,000 tons of ore ready for milling. Backers of the company were said to be a group of employees of the Bunker Hill & Sullivan Mining & Concentrating Co. The mine suspended operations during December because of severe weather and mechanical problems with one of the diesel power units.

Output of low-grade gold ore from the Silver Star-Contact group rose in 1939. However, the mine was closed the following year. The only other activity reported on the property was in 1974, when the mine was listed as active (Loen and Pearson, 1989).

Total recorded production for the mine between 1925 and 1975 was 12,041 tons of ore and 4 tons of reprocessed tailings. This material yielded 691 ounces of gold, 6,286 ounces of silver, 6,791 pounds of copper, and 30,788 pounds of lead.

Table 1. Changes in legal status for the Gibbonsville Mining and Exploration Company, 1936-1956.

Company Name	Officer	Date Incorporated	Charter Forfeited	Year(s) at Mine
Gibbonsville Mining and Exploration Company	Philo Seelye, President	Oct. 2., 1936	1938	1936-1940(?)
	Walter C. Clark, President	reinstated: Jan. 5, 1939	Nov. 30, 1942	
	Walter C. Clark, President	reinstated: Jan. 6, 1943	Nov. 30, 1956	

References

Anderson, A.L., 1959, Geology and mineral resources of the North Fork Quadrangle, Lemhi County, Idaho: Idaho Bureau of Mines and Geology Pamphlet 118, 92 p.

Idaho Geological Survey's (IGS) annual reports on Regional Developments in Minerals, Mining, and Energy in Idaho, 1975-1992.

Idaho Geological Survey's mineral property files (includes copies of company reports to the Idaho Inspector of Mines).

Idaho Inspector of Mines' (IMIR) annual reports on the Mining Industry of Idaho, 1899-1970.

Loen, J.S., and R.C. Pearson, 1989, Map showing locations of mines and prospects in the Dillon 1° x 2° Quadrangle, Idaho and Montana: U.S. Geological Survey Miscellaneous Investigations Series Map I-1803-C, 85 p.

Ruppel, E.T., J.M. O'Neill, and D.A. Lopes, 1993, Geologic map of the Dillon 1°x2° quadrangle, Idaho and Montana: U.S. Geological Survey Miscellaneous Investigations Series map I-1803-C.

U.S. Geological Survey (USGS)/U.S. Bureau of Mines (USBM) Minerals Yearbook chapters for Idaho, 1900-1990.