History of the Singheiser Mine, Lemhi County, Idaho

Victoria E. Mitchell

Staff Report 08-5
November 2008

Idaho Geological Survey
Morrill Hall, Third Floor
University of Idaho
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INTRODUCTORY NOTE

This report was prepared under a cooperative agreement with the U.S. Forest Service, Region 4, as part of an ongoing project to identify and describe inactive and abandoned mines in Idaho. The information in this report is from a number of published and unpublished sources in the Idaho Geological Survey's mineral property files.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 1984; since 1995, the *Minerals Yearbook* has been published by the U.S. Geological Survey. 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 Singheiser Mine, Lemhi County, Idaho

Victoria E. Mitchell[1]

INTRODUCTION

The Singheiser Mine is on Arrastra Creek about 2 miles from its junction with Silver Creek on the Meyers Cove Point 7.5-minute topographic quadrangle (Figures 1, 2, and 3). The millsite is about ⅛ mile downstream from the major underground workings. In 1964, the property consisted of three patented mining claims (the True Blue, Watch Tower, and Monument) and two patented millsite (the Watchtower Millsite and the Monument Millsite; Gold Flotation Development Company annual report to the Idaho State Inspector of Mines, 1964). According to the latest information available, the property consisted of four patented mining claims (the True Blue, Watch Tower, Monument, and Pivot) in 1994, as well as a number of unpatented mining claims being held by the Singheiser Mining Company (Johnson and others, 1998). The millsite claims were not mentioned.

GEOLOGY

The mine is on a system of fissure veins along a northeast-striking shear zone in volcanic rocks of the Twin Peaks Caldera (Johnson and others, 1998; Figure 4). Umpleby (1913, p. 176) described the deposit as follows:

> The vein, as seen at the surface and on the tunnel level (the deeper workings being flooded at the time of visit), is a strong quartz lode striking N. 35°-40° E. and dipping 65° NW. It occurs along a brecciated but sharply defined fissured zone about 40 feet wide. The greatest mineralization has taken place along the hanging wall, where 3 to 8 feet of almost clean quartz is usually present. The contact of this with the hanging wall is fairly sharp but with the foot wall it is gradational, stringers of quartz, invariably with sharp contacts, becoming less and less numerous. From the mine map it seems that two parallel veins are present, although but one, locally paralleled by strong stringers, was noted at the surface.

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

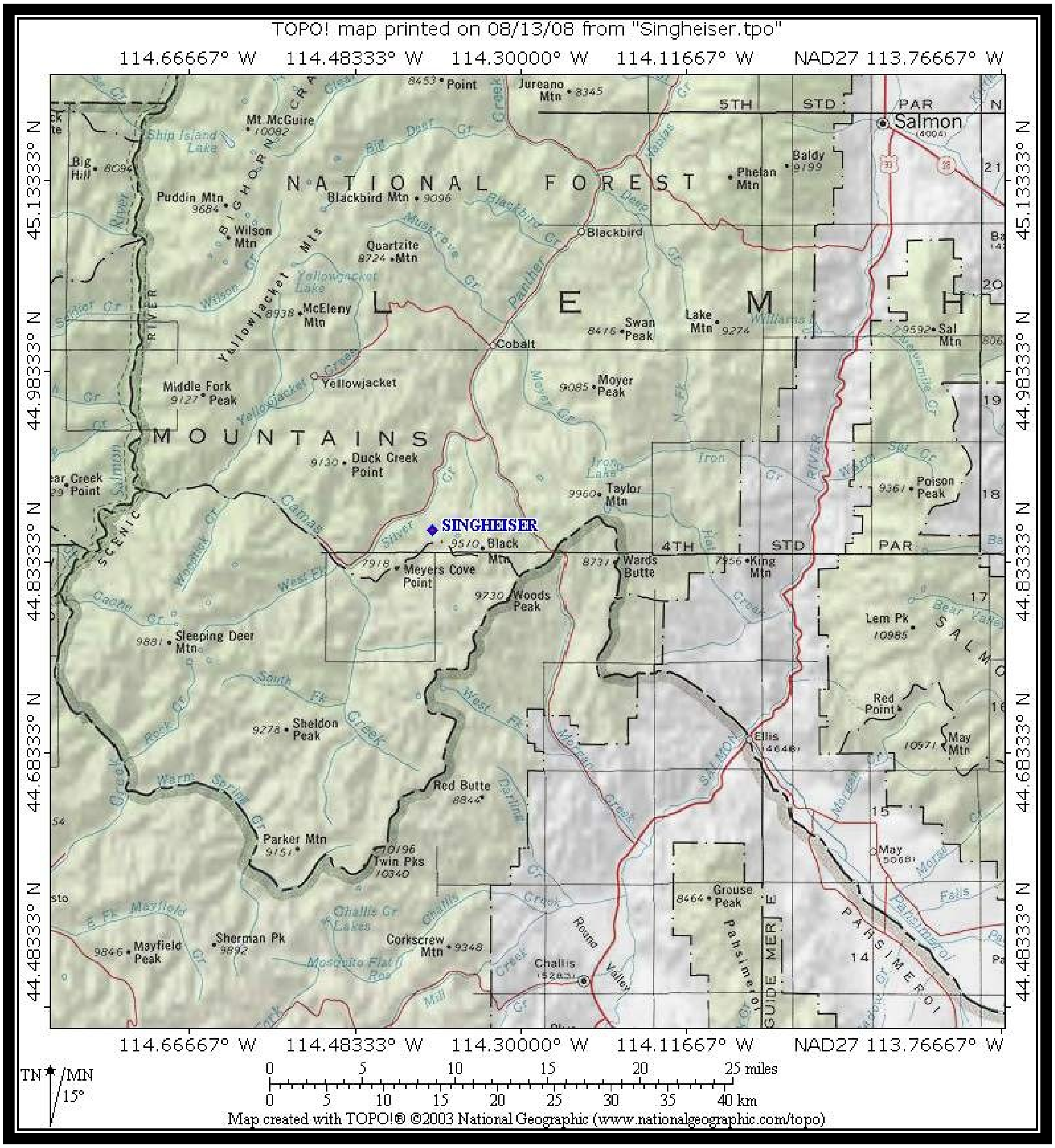

Figure 1. Singheiser Mine, showing its location in relationship to Salmon and Challis (National Geographic Society TOPO! map, scale approximately 1:500,000).

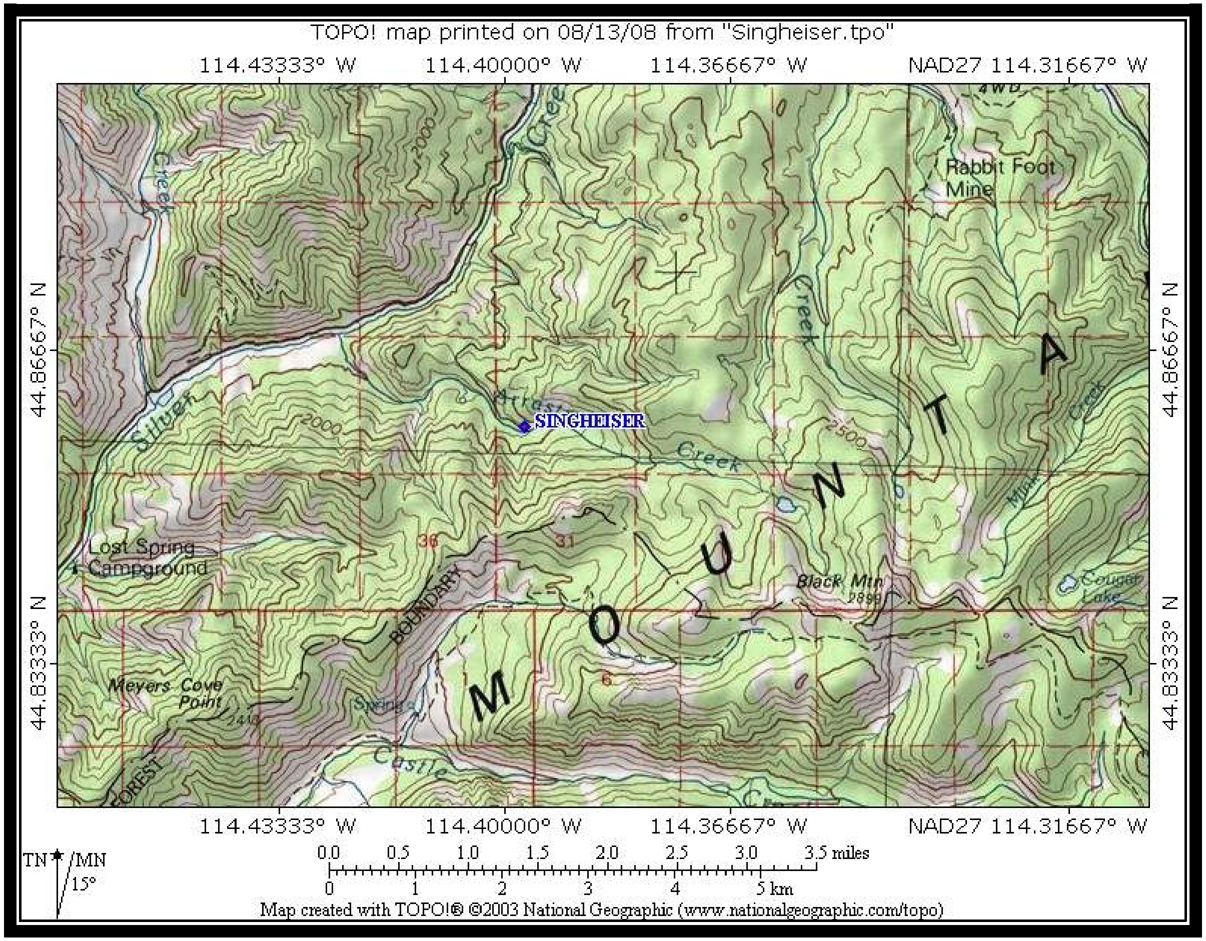

Figure 2. Location of the Singheiser Mine relative to the surrounding area (National Geographic Society TOPO! map). Note nearby Rabbit Foot Mine and main road along Silver Creek.

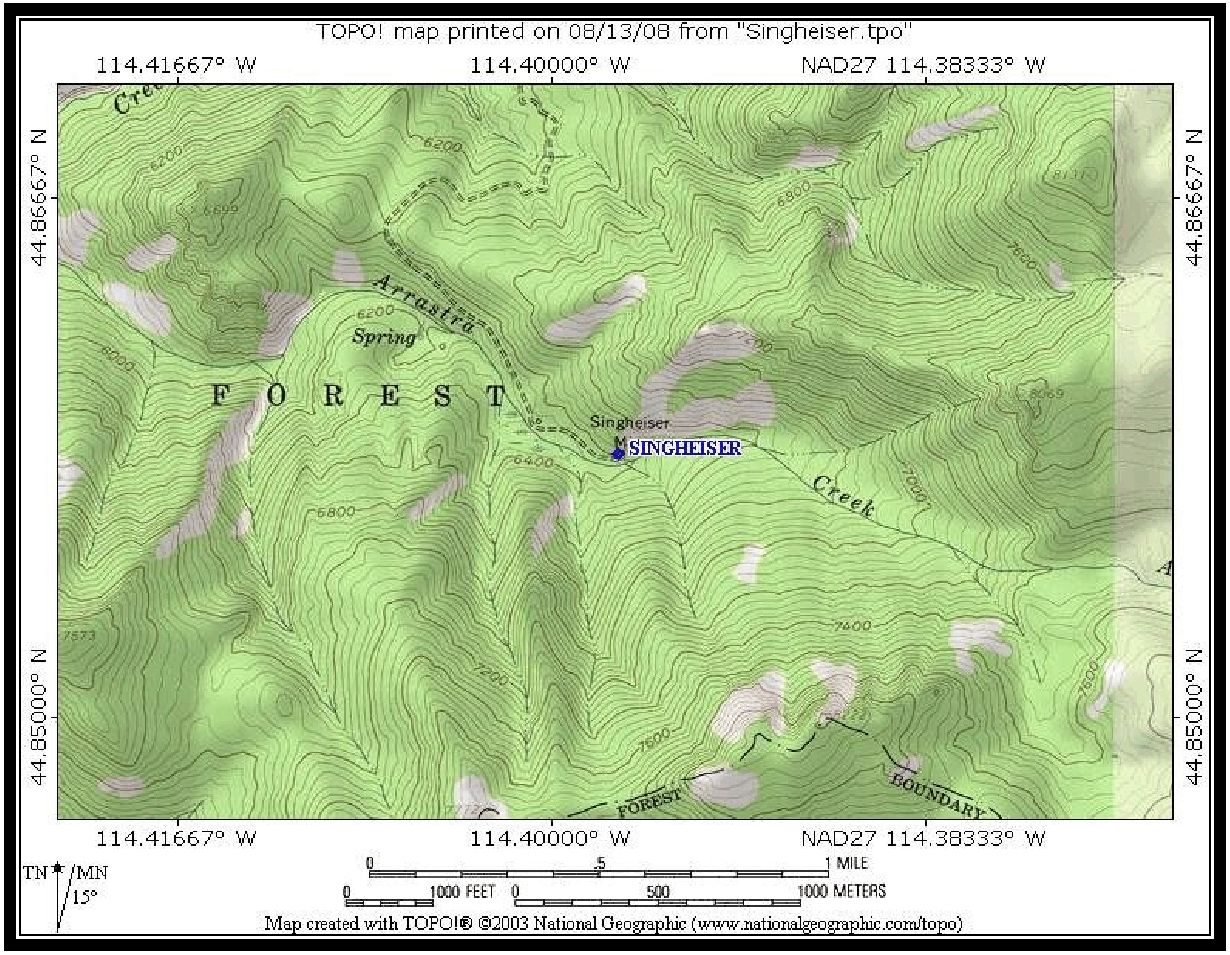

Figure 3. Topographic map of the Singheiser Mine, Lemhi County, Idaho (National Geographic Society TOPO! map, scale approximately 1:24,000).

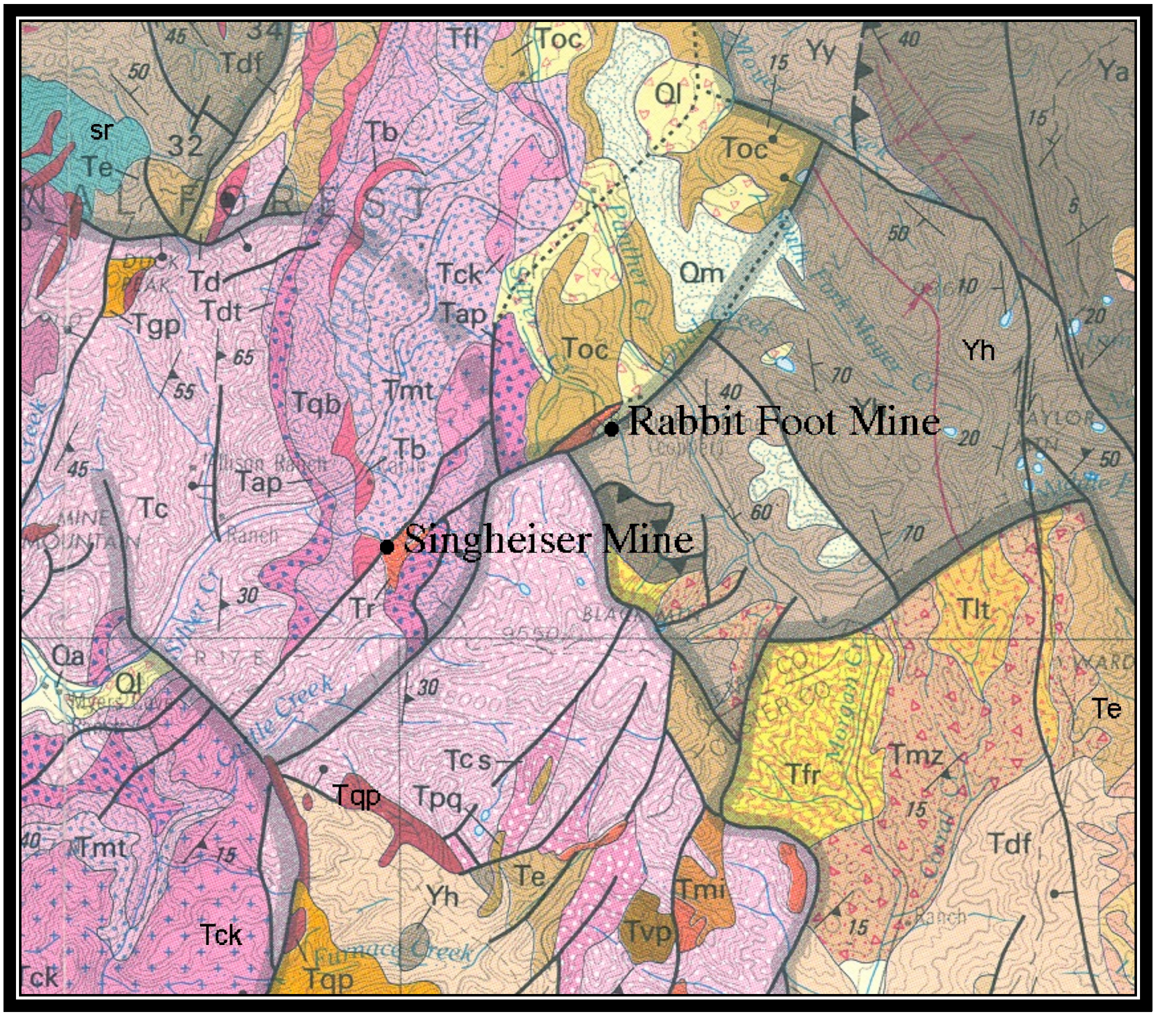

Figure 4. Geology of the Singheiser Mine and vicinity (Fisher and others, 1992). Qa - Holocene alluvium, undivided; Ql - Holocene landslide and related deposits; Toc - Eocene colluvium of Panther Creek; Tmt - Eocene monolith-forming tuff; Tck - Eocene tuff of Castle Rock; Tfl - Eocene flow-layered rhyolite; Tb - Eocene basaltic lava; Tqb - Eocene quartz-biotite tuff; Tap - Eocene alkali feldspar-plagioclase tuff; Te - Eocene tuff of Ellis Creek; Tdf - Eocene dacite and rhyodacite flows; Tmz - Eocene intermediate lava and breccia of mixed zone; Tlt - Eocene lithic tuff of Corral Creek; Tfr - Eocene flow-laminated rhyolite or quartz latite lava; Tc - Eocene tuffs of Camas Creek-Black Mountain; Tvp - Eocene tuff of Van Horn Peak; Tck - Eocene tuff of Castle Rock; Tr - Eocene rhyolite intrusions; Td - Eocene dikes; Tgp - Eocene intrusive gray porphyry; Tmi - Eocene mafic intrusives; Ya - Middle Proterozoic Apple Creek Formation; Yy - Middle Proterozoic Yellowjacket Formation; Yh - Middle Proterozoic Hoodoo Quartzite; st - Quartz syenite, syenite, and granite of uncertain age.

Extensive crushing and weathering have commonly transformed the normal vein filling into a sugary and somewhat clayey mass. Where unaltered the quartz is crustified and in places shows a fine ribbon structure due to dark, crimpy bands of dull to submetallic luster. Cavities, few of them more than an inch in diameter, and generally lined with drusy quartz, are common. Pyrite, nowhere abundant and occurring only in very small crystals, is the single mineral seen in the hand specimen. When microscopically examined, however, the ore appears much more interesting.

Umpleby (1913, p. 55) described the microscopic characteristics of a number of the Eocene rhyolite-hosted gold veins:

Locally intergrown with the quartz and less commonly included in quartz grains are very conspicuous amounts of adularia (Pl. IX, *A*[1] [omitted]). Calcite is common though never abundant. . . . The generally crustified appearance of vein material (Pl. IX, *B*[2] [omitted]) is due largely to different degrees of coarseness in alternating layers of quartz.

The metallic minerals, everywhere of microscopic size, are distributed through the ore in dark crimpy bands of dull to submetallic luster which parallel the crustification of the gangue. In these bands the metallic minerals occur as bunches of very small particles, fillings between quartz grains, and isolated crystals. Studies were not sufficiently detailed nor development extensive enough to permit satisfactory comparison of the ores from different veins. At Myers Cove, however, pyrite is the most abundant metallic mineral; most of it is contemporaneous with the quartz, many grains of which include pyrite crystals, but it also fills minute cracks formed in the ore at some later time.

Strong traces of selenium were reported in the ore (Umpleby, 1913). Another detailed description of the deposit is in Carr (1909, p. 557-558):

The mines of the Oregon Idaho Co., which are the subject of this article, are situated in Lemhi county, Idaho. They are situated in the Salmon River mountains, a branch of the Bitter Root range, the latter being the dividing line between Idaho and Montana. The mines were originally discovered by Mexicans, who worked the rich surface ores in arastras, run by water-power on what is now known as Arastra creek, which traverses the property in a general east and west direction. Practically all the work has been done on the Monument mine (see map [Figure 5]) and it is in this mine that exist the conditions to be described. The collar of the shaft is at an altitude of 6000 ft. above sea-level; the shaft follows the vein on its dip (69º from the horizontal) to a depth of 300 ft. The locality has been the scene of volcanic and thermal activity at a geologically recent period. The country rock for a distance of 12 miles, in either a north, east, or west direction, is an acid rhyolite of Tertiary age. This rhyolite flowed from a crater, one wall of which is situated about two miles south of the mine and still has an altitude of 10,000 ft. The various flows from the crater can be seen distinctly, as watercourses have eroded their way through the rhyolite to a depth of 1000 ft. below the present mine workings. These flows follow a northerly direction and are of varying thickness, from 40 ft. upward. About two miles north from the mine is a cone of volcanic ash at least 500 ft. high and 500 ft. through at its base, while at a distance of half a mile west of the mine, intrusive dikes, thrusting their way through a hydrated volcanic sinter, have produced a fine quality of opal. The vein itself is an original fissure following a direction of N. 17º E. (Mag.) and was caused by the cooling and fracturing of the rhyolite. The outcrop crosses the Watchtower, Monument, and True Blue claims of the Oregon Idaho Co. and is marked by high pillars of flinty quartz, so hard, that they have withstood the erosive action of the

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[1]This photograph is not of ore from the Singheiser Mine.

[2]This photograph is not of ore from the Singheiser Mine.

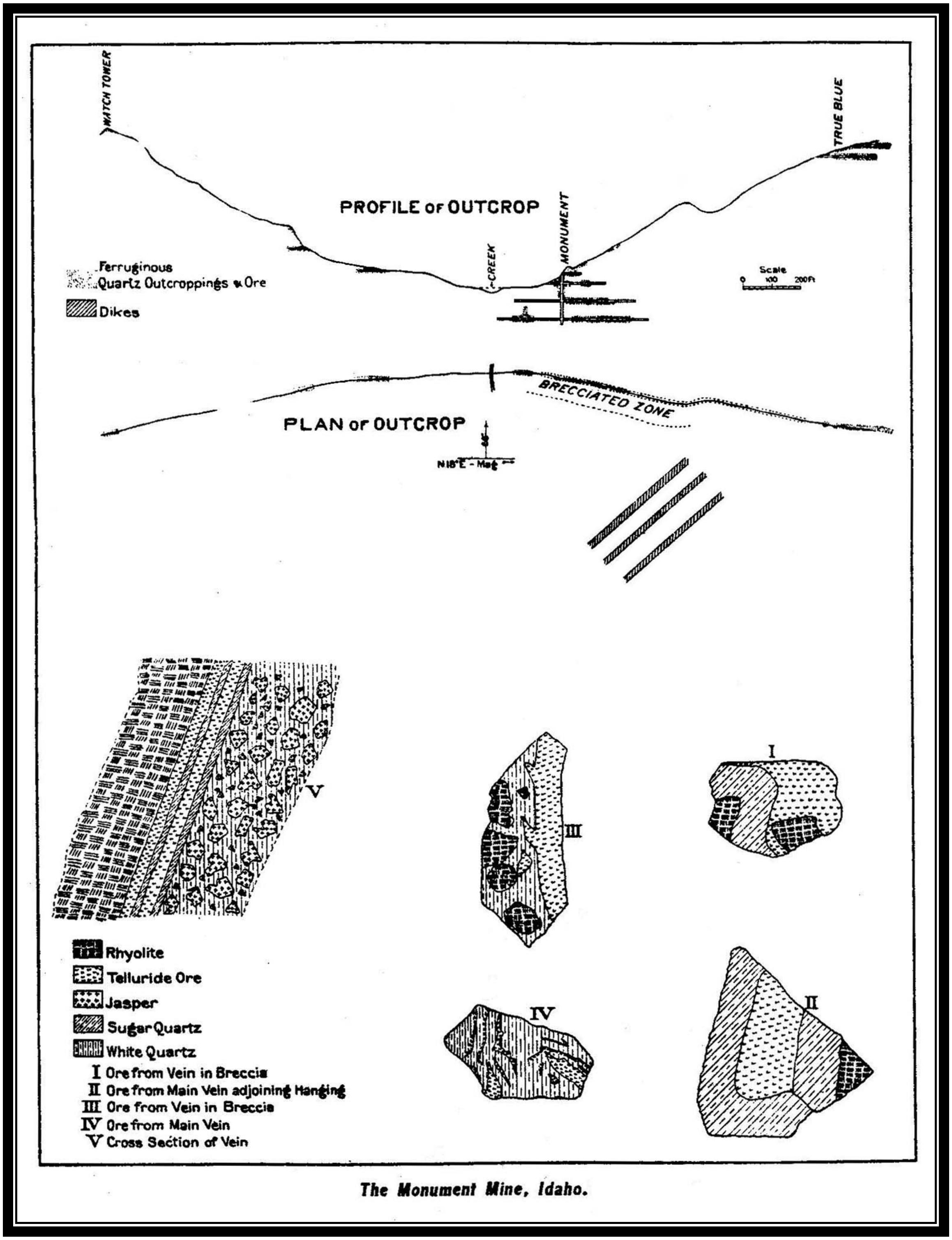

Figure 5. Plan and section of the Singheiser Mine, plus sketches of the ore from the vein (Carr, 1909).

elements. It has an average width of 30 in. of banded structure, the bands being from 1 to 3 in. wide, very silicious (analyses, 96% SiO_2); it is a remarkable illustration of crustification. The ore occurs as bands, the valuable minerals being disseminated in minute particles through the gangue, in the form of telluride, petzite, and sylvanite. The ore shoots pitch to the north and the best ore ($100 and upward) is found following the hanging wall. This hanging wall is smooth and shows no signs of any subsequent movement in any direction; neither is there any gouge, the rich ore being frozen to this wall so tightly as to become part of it, so that a slab from 1 to 3 in. thick has to be removed by moils. It seems that the ascending hot waters, following this open fissure, dissolved part of the hanging wall adjoining the fissure, and deposited silica in the form of quartz containing the precious metals, in the place of the soluble material leached out. Successive ascending solutions followed until the fissure was filled, some of these solutions being devoid of minerals of commercial value, as evinced by bands of broken white quartz. The monument mine has no foot-wall, while the Watchtower and True Blue mines on the same outcrop (see map [Figure 5]) have two well defined walls. In the Monument mine for a distance of 400 ft. north of the shaft and 150 ft. south, on all the levels, there is found a brecciated zone from 40 to 100 ft. wide. This zone conists of pieces of blue jasper as large as a man's head, small fragmental pieces of high-grade ore from the size of a walnut to 3 in. diam., all cemented together by a barren sugary quartz, thoroughly disintegrated. This brecciated mass, on account of the small pieces of high-grade ore, assays about $1.50 per ton, but is not of merchantable value. Cross-cuts into the breccia have demonstrated that there is no ore in it except feeders from the main vein; they are apparently off-shoots of the vein and were caused by the ascending solutions following the line of least resistance along small fractures in the, then, foot-wall. The ore found in the feeders shows in every instance that it was not deposited along an open channel but as an impregnation and substitution of the country rock, because this particular ore invariably contains pieces of rhyolite, some of which is still fresh and some of it partly changed, as is shown by the sketch [Figure 5]. To the east of the shaft and at distances of 300, 375, and 475 ft., respectively, are three rhyolite dikes having an average thickness of 40 ft. each. These dikes (see map [Figure 5]) appear only on the north side of Arastra creek and run at an angle of 67° to the vein. If they continue below the surface as above they should cross the main vein at 800 ft. north of the shaft. They are very acid and erosion has failed to eliminate from the exposed sides the rough shearing scars showing where they were extruded through the country rock. As before stated, there are two walls in the Watchtower and True Blue mines, while the Monument has a hanging but no foot-wall. On the first two mines, the width of the vein, its gangue, and assay-value are the same as on the Monument. The map also shows that the intrusive dikes do not appear except on the Monument claim. Is it not then right to reason that there was an original fissure, filled by subsequent recurring ascending solutions, and that the veins or feeders connecting with the main vein and found in the brecciated mass were caused by these same waters altering portions of the foot-wall rocks; that these intrusive dikes were subsequent to the vein-filling and were the cause of the brecciated condition of the foot-wall side. At the same time, did not the waters which accompanied these dikes as they were extended, produce the jasper and sugary quartz by metamorphism and leaching?

History of the Singheiser Mine

The Singheiser Mine was discovered in 1866 a short time after gold was discovered in the surrounding area. Mexicans worked the rich surface ores in arrastras powered by water from Arrastra Creek (Gold Flotation Development Company, 1935). The 1884 Mint Director's report described the Watchtower, Monument, and True Blue as "promising mines" that had been discovered during the year; even as late as 1909, Carr (1909) was still referring to each of the claims as individual mines. Huston (no date; n.d.) noted the property was named after Theodore F. Singiser, a delegate to Congress

Table 1. Companies and individuals operating at the Singheiser Mine.

Company Name	Officer	Date Incorporated	Charter Forfeited	Year(s) at Mine
Mexican discoverers	—	—	—	1866-?[1]
Theodore F. Singiser	—	—	—	?[2]
organizers of Oregon-Idaho Gold Company	—	—	—	1896-1905
Oregon-Idaho Gold Company	A. A. Hibbs, general manager	23 September 1905	1 December 1912	1905-1912
unknown	—	—	—	1912-1917
Gold Flotation Development Company	H.G. Loop, president	26 May 1917	in good standing (2008)	1917-
B. W. Porter & Associates (lessee)	—	—	—	1946
Tenneco Minerals (CanAm Gold Corp.)	—	1986	1987	1986-1987
Echo Bay Mines	—	29 October 1986	?[2]	1987-?[2]
Singheiser Mining Company	—	—	—	?[3]

[1]Information not present in Idaho Geological Survey's files.

[2]No data found on precise date range.

[3]This company was cited by Johnson and others (1994), but is not listed by the Idaho Secretary of State's website.

representing the territory of Idaho in the early 1880s, who had owned property. (See Table 1 for a list of individuals and companies working at the mine.)

Umpleby (1913, p. 176) stated, "[N]ot until the mine was acquired by the present owners in 1896 did active development begin." It seems likely that the mine was acquired by a group of individuals who began serious development at the mine, then later organized the company. Huston (no date; n.d., p. 1) stated:

> The Singiser Mine was located over 45 Years ago, and yielded rich, free gold ore from the surface, which was treated by an arrastre. In 1903 an Eastern concern attempted to operate by cyanide, amalgamation, and chlorination treatment, but high costs and the nature of the ore defeated them. The concern spent over $350,000, did 3000 feet of tunnel and shaft work, all now in good condition, and built a mill. They prospected the ground well to a depth of 200 feet below the creek level, every foot of work being done on what can now be classed as ore. There are over 35,000 tons of ore in the dumps.
>
> Their treatment methods allowed only the mining of the richer streaks, while present day methods would regard portions previously rejected as fairly rich ore.
>
> The history of this ground is typical of many other mining ventures of the past. At first the surface ores, freed from refractory constituents by nature's chemical work, yielded handsomely in wealth, but below, where the depth did not allow of reaching them, the minerals were rebellious to that day knowledge and methods of winning the values. With the simple inexpensive flotation and concentration process of today, such so-called "refractory" minerals are handled and made to pay large profits.

In 1904, the Singheiser mine was operated. The Idaho Mines Inspector noted that the property was likely to show "bonanza values" and compared the mine to some of those in Custer and Owyhee counties which had produced large dividends. The 1905 IMIR (p. 87) noted:

> Among the most important mining transactions of the past year was the acquisition and development of the old Singiser Mine by the Oregon-Idaho Mining Company, a corporation comprised of Pennsylvania capitalists. These people have instituted a vigorous campaign of development and were recently employing a force of 50 men. They have completed a thousand feet of underground development during the past year and disclose some large reserves of high-grade ore that carry average values up to $20.00 per ton, and the ore body is said to be as much as 80 feet wide at one point.
>
> This is an immense fissure vein in porphyry formations, filled with brecciated igneous rock cemented together with silicious [sic] sinter. The values run in both gold and silver, and the ore contains nothing, apparently, to prevent its successful treatment by some of the leaching methods.

Carr (1909) noted the property was owned by the "Oregon Idaho Co." The Oregon-Idaho Gold Mining Company was incorporated on September 23, 1905.

In 1906, forty men worked the mine. The IMIR (1906, p. 109) commented:

> [The mine] has a large vein containing some fair values, but the gold is combined with silver and seems very difficult to treat, although the ore is a simple looking mixture of quartz and silicified volcanic breccia containing no base elements apparent to the eye.
>
> This enterprise has been supplied with a large amount of capital but seems to have been unfortunate in getting the proper quality of gray matter blended with the processes that have been adopted for the treatment of its ores, if the values they contain average as well as reported.

By the following year, the mine had 2,200 feet and produced a small amount of bullion. The Idaho Mines Inspector described the mine and mill in detail (1907 IMIR, p. 118-119):

> Five miles west of the Rabbit's Foot mine the old Singiser mine at Meyer's Cove, owned by the Oregon-Idaho Gold Mining Company, is another interesting deposit of gold and silver bearing silicious [sic] milling ore. This deposit consists of a fissured zone of igneous breccia and white quartz that varies from a soft, sandy silicious sinter to a hard chalcedonic structure, with wavy lines of argentite, and a complete analysis by the company is said to show a variety of telluride minerals in the ore as well. This property worked quite a large force of men during the past year, which was largely employed, however, on mill construction and surface improvement. The mine is opened by an inclined shaft 300 feet deep, from which 4 levels have been run, exposing a pay streak several feet wide in places, that carries average values of from $8.00 to $12.00 per ton in gold and silver, as it is mined in bulk. The best ore is a very hard chalcedonic quartz, from which selected samples showing strong lines of argentite can be taken that run into high values. Extensive bodies of soft, sugary quartz occur in the levels; these, however, are rather low grade. The ore is difficult to treat and a good deal of money has been spent in experimenting with different milling methods. The present plant, completed last fall, is of 50 tons daily capacity and consists of 6 Hendy quadruple discharge stamps in separate mortars, and 2 Bryan mills for fine grinding. Below this is a cyanide plant, in which agitation is employed, and 75 per cent of the values are said to be extracted in about 6 hours treatment. Ahead of the crushing plant there is a brick-constructed gravity roaster with which to roast the quartz before going to the stamp, to facilitate its crushing and subsequent treatment. Owing to faulty design of the roasting plant the whole mill was out of commission during my visit late last fall. This feature of the process can probably be adjusted and the mine should enter the producing list another season. In the meantime, the company is extending the development of the mine and will run a new level during this winter from the bottom of the shaft for the purpose of increasing the ore reserves.

In 1908, development and a small amount of production were reported from the mine. Much development work was done on tunnels and crosscuts. When he examined the property in 1910, Umpleby (1913, p. 176) noted the work done by the current owners since acquiring the mine:

> Soon thereafter a considerable amount of ore, averaging about $11 a ton, was blocked out and the method of treatment carefully considered. As a result a combination chlorination and cyanidation process was adopted. A mill was built but, owing to very low recovery, was operated for only a month or six weeks.
>
> Several small tunnels and shallow shafts have been opened on the property, but the principal development consists of a double compartment incline shaft, which extends down the dip of the vein and from which drifts have been opened on the 40-foot, 100-foot, and 200-foot levels, comprising in all perhaps 3,000 feet of work. (See PI. XXIII [Figure 6].)

In 1912, the Oregon-Idaho Gold Mining Company forfeited its corporate charter. An unnamed mine in the district equipped with both amalgamation and cyanidation equipment was operated in 1915; this may have been the Singheiser.

The Gold Flotation Development Company, incorporated in 1917, acquired the mine in that year. The property was purchased from Lemhi County for $6,500 and 519,050 shares of stock[3]. In 1919, two men started work on April 1 to repair the buildings, bridges, and roads. The company expected to place new equipment in the mill

[3] In other years, the company's report to the Idaho Mines Inspector stated this as "$6,500 and a stock consideration," "$5,000 cash and treasury shares," or "$5,000 cash and entire issue of stock corporation." The latter claim is not supported by the information in the rest of that report to the Idaho Mine Inspector.

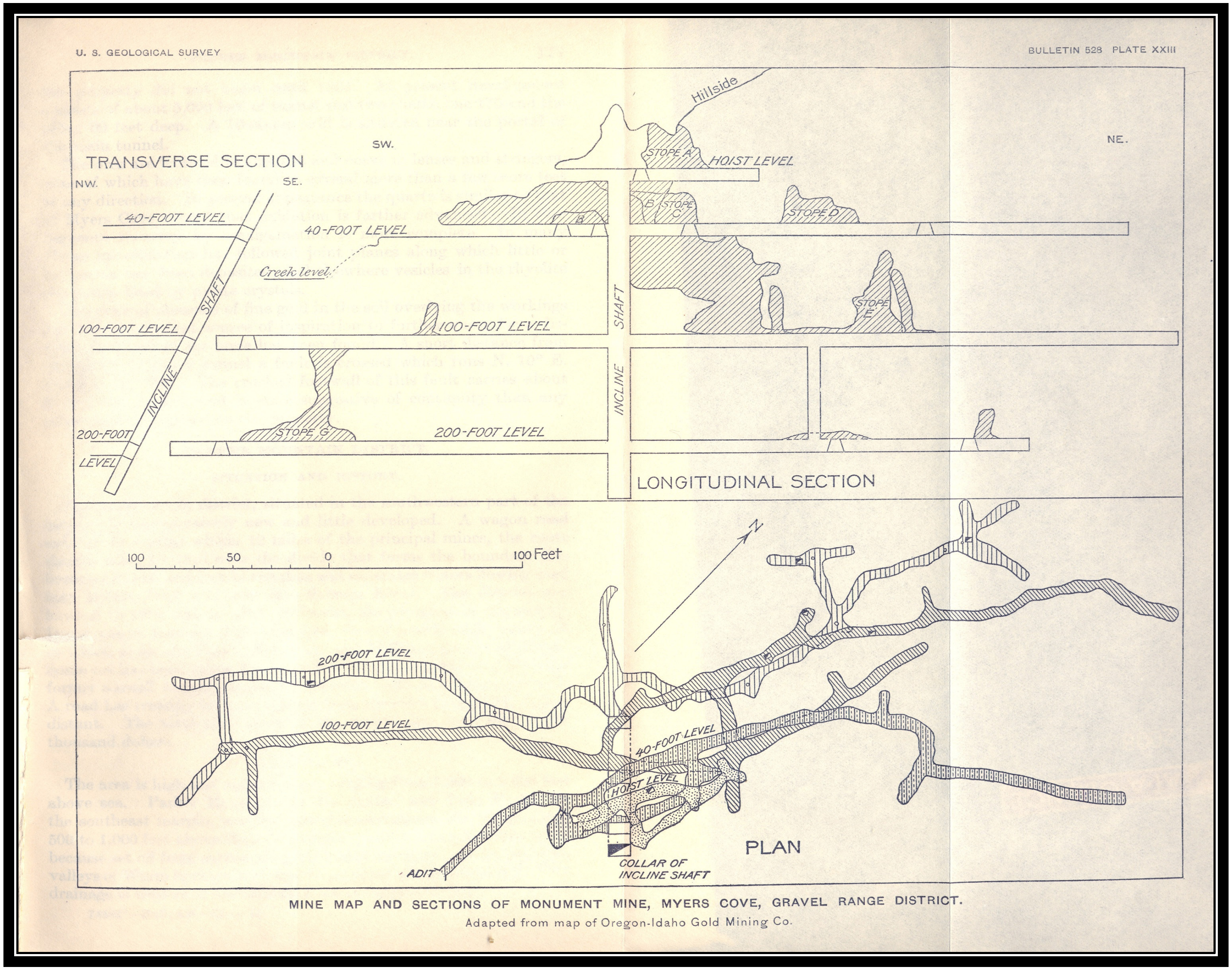

Figure 6. Map and sections of the Singheiser Mine, Lemhi County, Idaho (Plate 23 from Umpleby, 1913).

during the year, but this was never done. The existing concentrator was described as a six-stamp amalgamation mill with a cyanide unit. In 1920, five men were employed for a few months repairing tunnels, buildings, bridges, and roads. In 1921, the mine was idle. The company reported having a six-stamp mill that included a cyanide unit. The company forfeited its corporate charter in 1922.

In 1927, the Gold Flotation Development Company had its corporate charter reinstated under the direction of a new set of corporate officers. By 1928, the mine still had only 3,000 feet of workings. Equipment present on the property included a compressor and a hoist (Figures 7 and 8), two horizontal tubular boilers (Figure 9), a 14x30[4] horizontal engine, a 9x15[5] Blake-type jaw crusher, and several small pumps and other mill machinery (Figures 10 and 11). Much of the mill machinery was obsolete, according to the company. The property consisted of five patented claims (Figure 12). From pictures extracted from a company flyer and included with the company's report to the Idaho Mines Inspector, the company was actively promoting the mine. Its attempts to raise money were apparently unsuccessful. Platts (1929) looked at the property and recommended the workings, all of which were flooded, should be pumped out and examined. Also, the mill should be modernized with the addition of a ball mill and flotation units. A sample of ore left in the ore bin at the mill assayed 0.18 ounces per ton (opt) gold and 8.2 opt silver[6]. Grab samples taken from the dump assayed from $2.40 to $3.85; Platts recommended milling the entire dump since the rock had already been removed from the mine.

By 1934, the buildings were in ruin. (See Table 2 for reported development at the mine.) In 1935, the company noted in its report to the Idaho Mines Inspector it had done little toward additional development since purchasing the mine. The replacement value of the mine and surface plane was given as $400,000 in 1936, even though the plant was said to have been built in 1899.

All gold mines were closed in October 1942 for the duration of World War II by War Production Board Limitation Order L-208, which restricted the operation of all "nonessential" (i.e., gold-producing) mines. As the Singheiser Mine was idle at the time, this order had little effect on the mine.

An effort was made to start pumping out the mine in 1944 and 1945, but a heavy flow of water 40 feet below the 100 level exceeded the capacity of the pumps. This water was probably backflow from the creek, which had been turned into a swamp by beaver dams (Lakes, 1945). In spite of this difficulty, Lakes managed to map the Shaft level (Figure 13) and the 40 level (Figure 14). Lakes (1945) also noted that a patented claim intervened between the Watch Tower claim and the rest of the Singheiser Group (Figure 15).

In 1946, the property was leased to B.W. Porter & Associates of Seattle, WA. In 1949, the company's report to the Idaho Mines Inspector noted that all the equipment at the mine had been stolen. Two prospective purchasers examined the mine in 1953. However, nothing came from the negotiations. The company levied a stock assessment of $0.05 per share on February 12, 1955, which yielded a total of $3,149.96 on the

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[4]The numbers refer to the diameter of the cylinder and the lengths of the piston's stroke, in inches.

[5]The gape of the crusher's jaws, in inches.

[6]The price of gold was $20.67 per ounce and the average price of silver for 1929 was $0.533 per ounce.

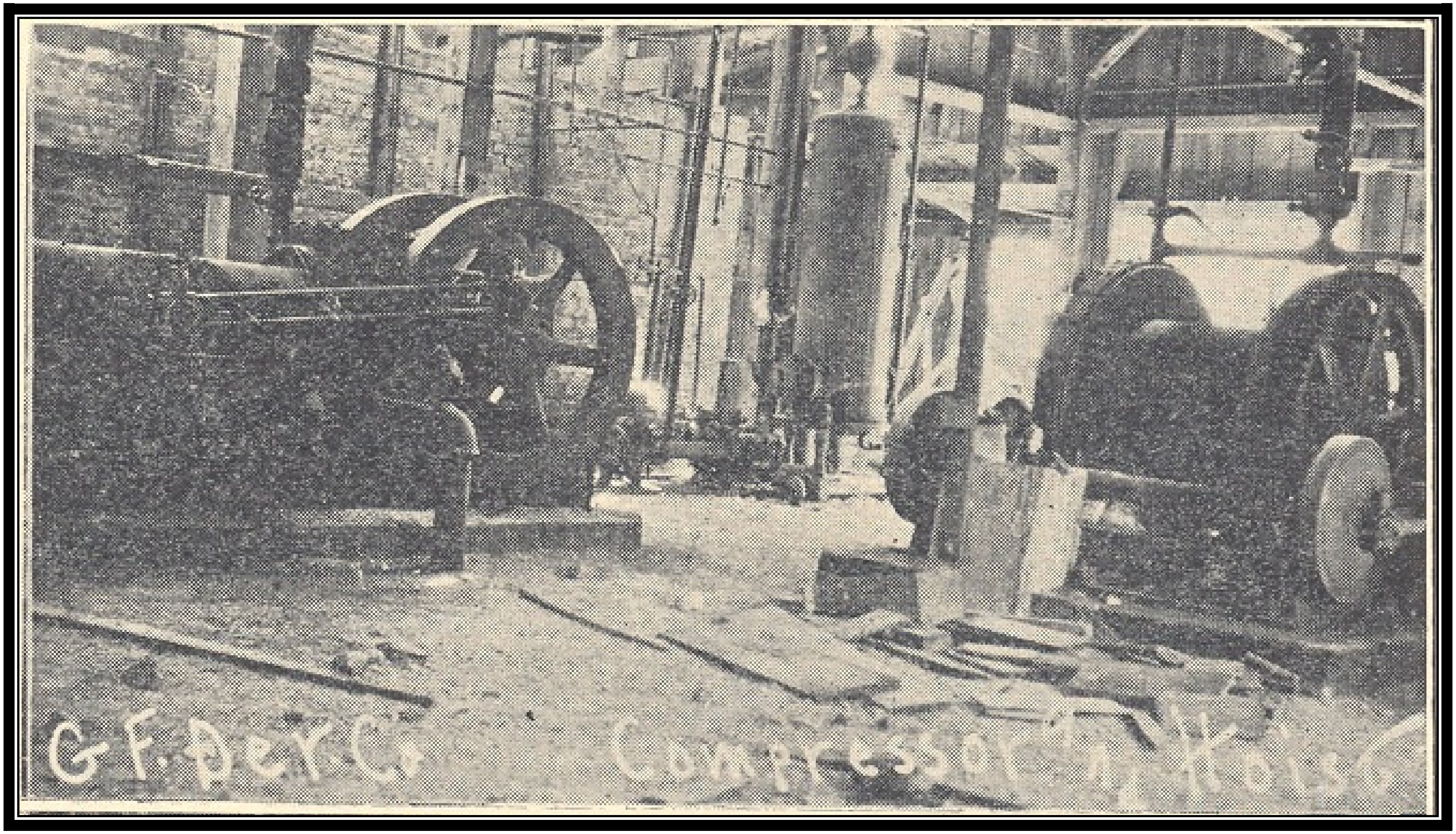

Figure 7. Compressor and hoist at the Singheiser Mine (Gold Flotation Development Company, 1935). The picture was probably taken much earlier, possibly around 1920.

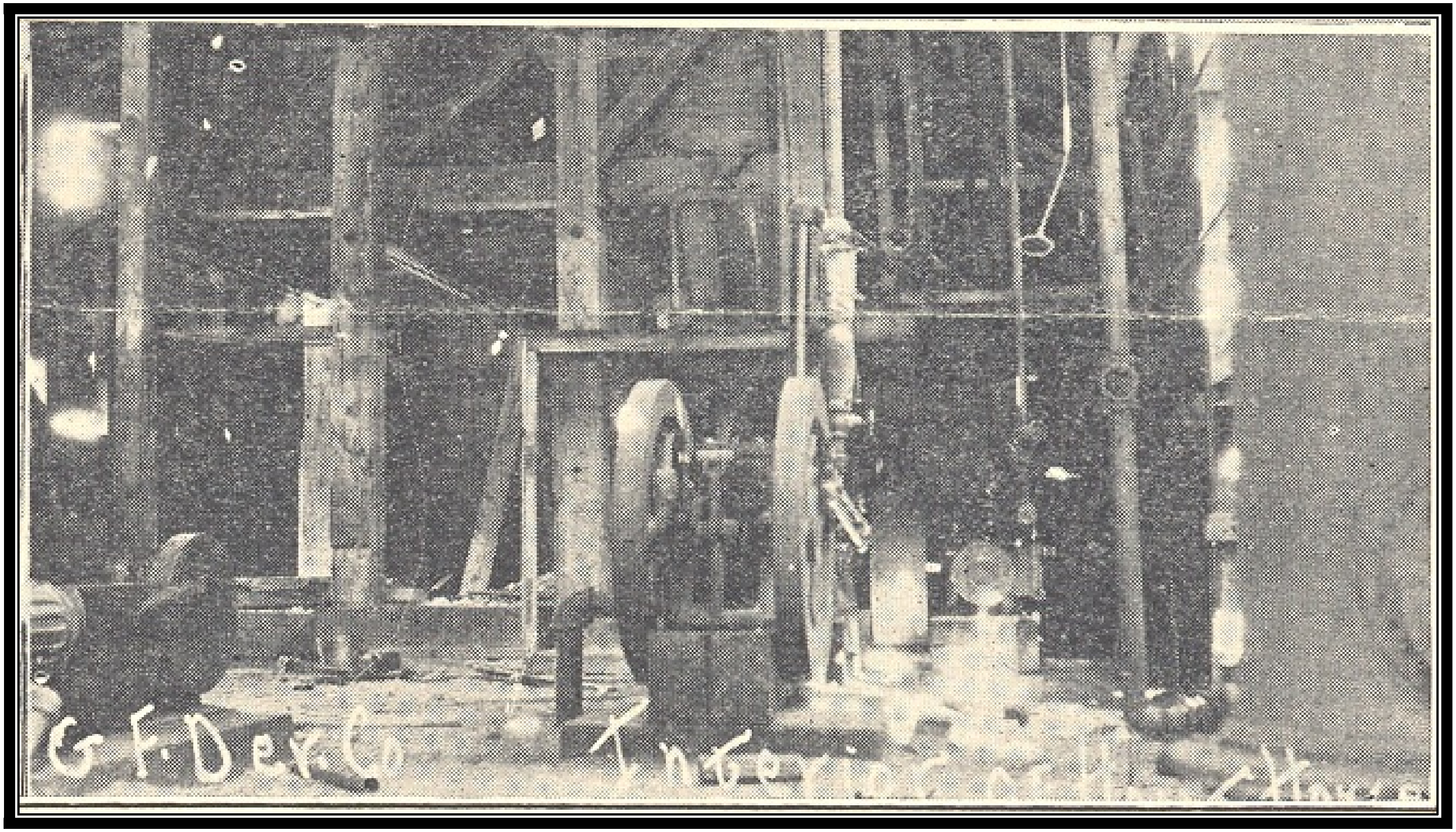

Figure 8. Interior of the hoist house at the Singheiser Mine (Gold Flotation Development Company, 1935). The picture was probably taken much earlier, possibly around 1920.

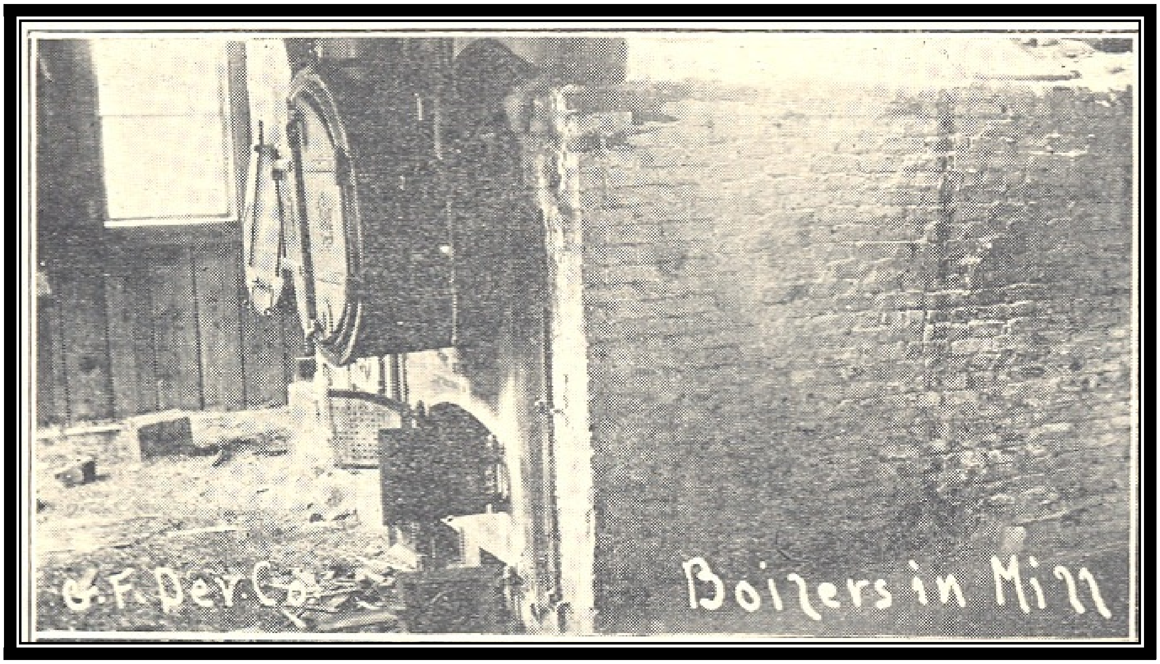

Figure 9. Twin horizontal boilers in the mill at the Singheiser Mine (Gold Flotation Development Company, 1935). The picture was probably taken much earlier, possibly around 1920.

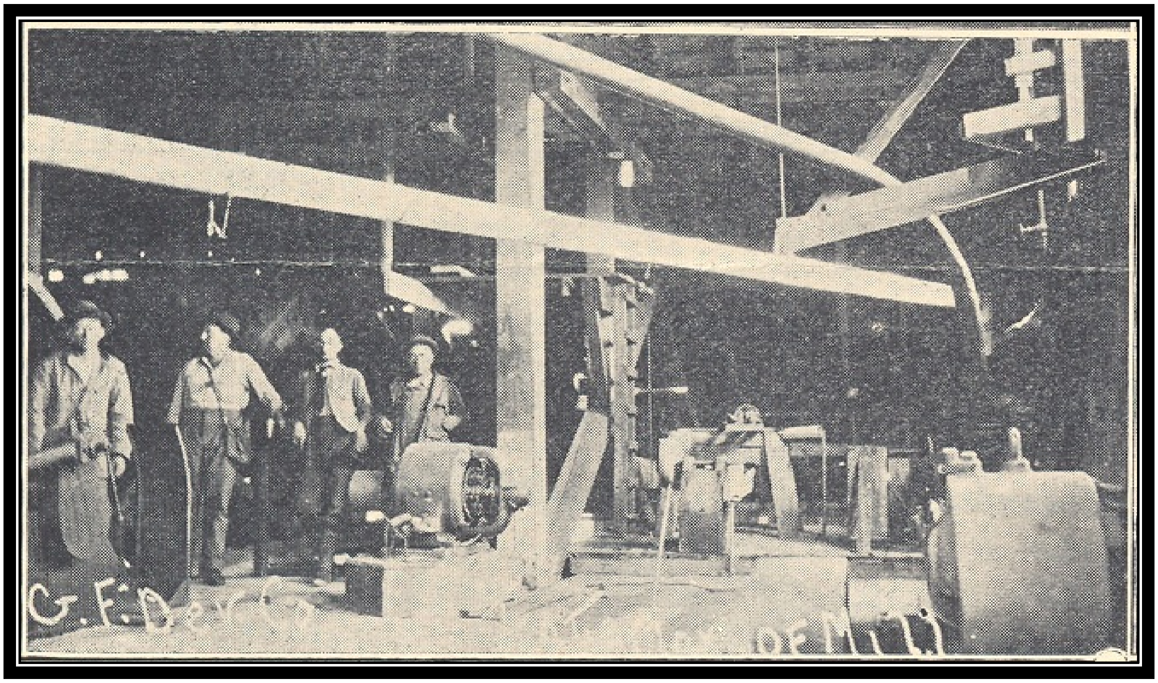

Figure 10. Interior of the Singheiser mill (Gold Flotation Development Company, 1935). The picture was probably taken much earlier, possibly around 1920.

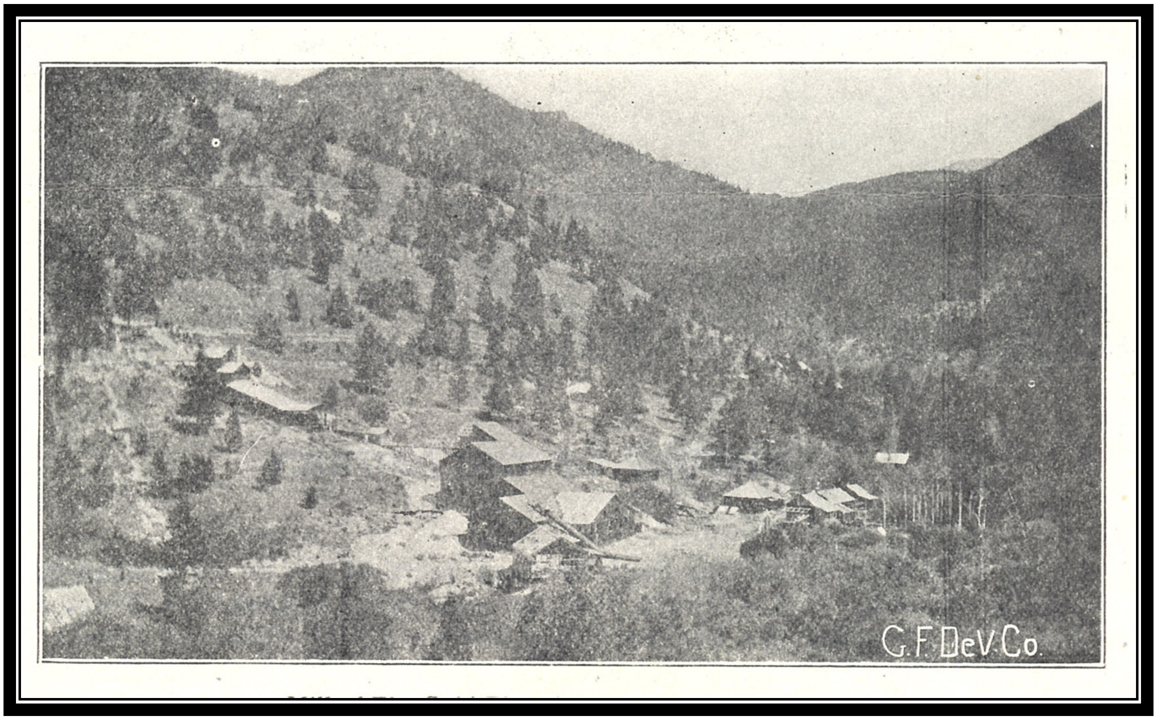

Figure 11. The Singheiser mill and other buildings at the Singheiser camp (Gold Flotation Development Company, 1935). The picture was probably taken much earlier, possibly around 1920.

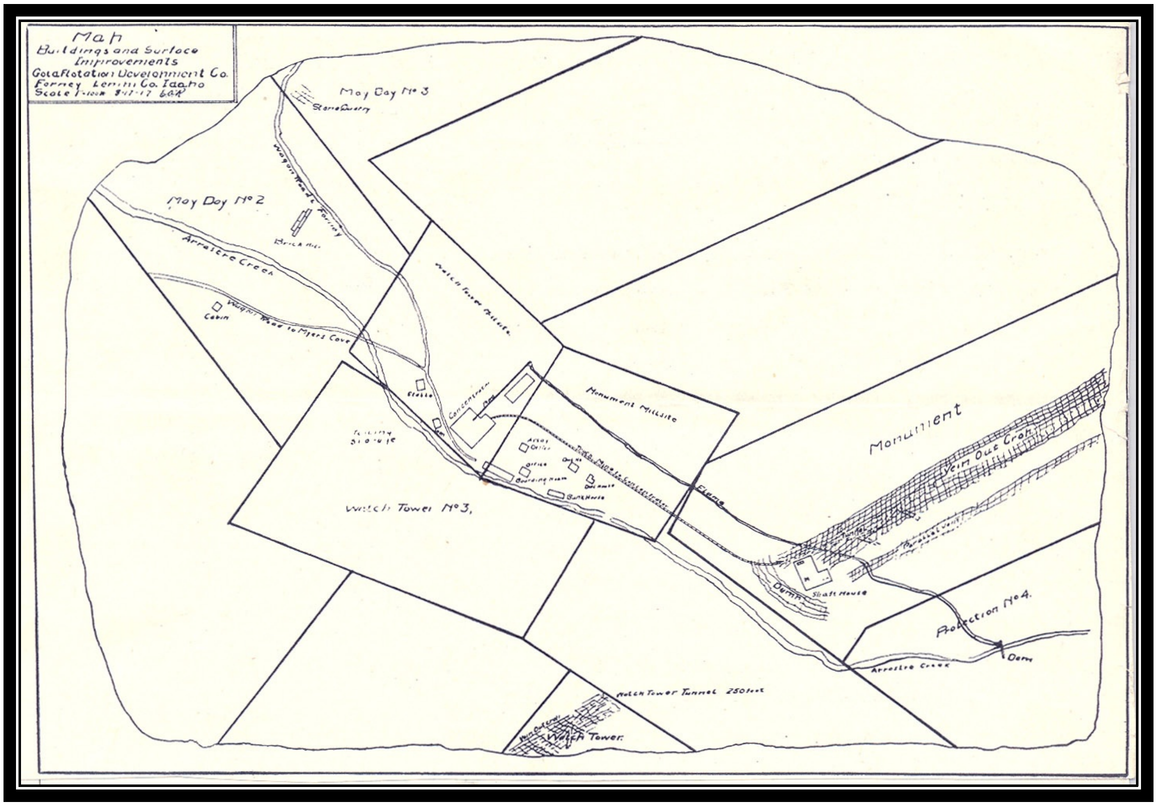

Figure 12. Sketch map of the Singheiser camp, showing the location of the buildings, and the claims (Gold Flotation Development Company, 1935). The True Blue claim is not shown.

Table 2. Cumulative development at the Singheiser Mine, by year. Information is from company reports to Idaho Inspector of Mines; discrepancies in numbers reflect inconsistencies in the original data. The distinctions between "inclined" shaft and "vertical" shaft in the footnotes are as reported to the Idaho Inspector of Mines; the shaft at the mine was inclined.

Year	Total Development (ft)	No. of Tunnels	Total Length of Tunnels, Crosscuts, and Drifts (ft)	No. of Shafts	Total length of shafts (ft)	No. of Raises	No. of Crosscuts	No. of Drifts	Length of Principal Tunnels (feet)		
									No. 1	No. 2	No. 3
1934[1]	3,000	2	—	1	300	—	6	—	40	70	—
1935	3,000	2	—	1	—	—	6	—	50	300	—
1936	3,000	2	—	1	—	1	4	—	100	400	—
1938	3,000	2	—	1	250[3]	2	—	—	100	400	—
1939[4]	3,000	2	—	1	250	2	—	—	100	400	—
1940[4]	3,000	2	—	1	250	2	—	—	100	400	—
1941[4]	3,000	2	—	1	250	2	—	—	100	400	—
1942[4]	3,000	2	—	1	250	2	—	—	100	400	—
1943[5]	3,000	2	—	1	—	2	—	—	100	400	—
1944[5]	3,000	2	—	1	—	2	—	—	100	400	—
1945[6]	3,000	2	—	1	—	2	—	—	100	400	—
1946[7]	3,000	3	—	1	—	2	—	—	100	400	—
1947[7]	3,000	3	—	1	—	2	—	—	100	400	—
1948[6]	3,000	3	—	1	—	2	—	—	100	400	—
1949[6]	3,000	3	—	1	—	2	—	—	100	400	—

Table 2. Cumulative development at the Singheiser Mine, by year (continued).

Year	Total Develop-ment (ft)	No. of Tunnels	Total Length of Tunnels, Crosscuts, and Drifts (ft)	No. of Shafts	Total length of shafts (ft)	No. of Raises	No. of Crosscuts	No. of Drifts	Length of Principal Tunnels (feet)		
									No. 1	No. 2	No. 3
1950[6]	3,000	3	—	1	—	2	—	—	100	400	—
1951[8]	3,000	3	—	1	—	2	—	—	100	400	—
1952[8]	3,000	3	—	1	—	2	—	—	100	400	—
1953[9]	3,000	3	—	—	—	1	—	4	100	—	—
1954[10]	3,000	3	—	1	300	2	—	—	100	400	—
1955[9]	3,000	3	—	—	—	1	—	4	100	—	—
1956[11]	3,000	3	2700	1	300	1	—	4	210	300	225
1957[11]	3,000	3	2,700	1	300	1	—	4	210	300	225
1959[12]	3,000	3	2,700	1	300	1	—	4	210	300	225
1961[11]	3,000	3	2,700	1	300	1	—	4	210	300	225
1962	3,000	3	2,700	1	300	1	—	—	210	2,300	225
1963	3,000	3	2,700	1	300	1	—	—	210	2,300	225
1964[13]	3,000	2	—	1	—	2	—	—	100	400	—

[1]The distance between the surface and the No. 1 level was 40 feet; and the distance between the No. 1 and No. 2 tunnels was 40 feet. The principal inclined shaft was 300 feet long.

[2]Information not reported to Idaho Inspector of Mines.

[3]The principal inclined shaft was 250 feet long.

Table 2. Cumulative development at the Singheiser Mine, by year (continued).

[4] The distance between the surface and the No. 1 level was 300 feet; and the distance between the No. 1 and No. 2 tunnels was 40 feet. The principal inclined shaft was 250 feet long.

[5] The distance between the surface and the No. 1 level was 300 feet; and the distance between the No. 1 and No. 2 tunnels was 40 feet.

[6] The distance between the surface and the No. 1 level was 300 feet; and the distance between the No. 1 and No. 2 tunnels was 60 feet.

[7] The distance between the surface and the No. 1 level was 300 feet; the distance between the No. 1 and No. 2 tunnels was 60 feet; and the distance between the No. 2 and No. 3 tunnels was unknown ("?").

[8] The vertical distance between the surface and the No. 1 tunnel was 300 feet. The principal inclined shaft gained a vertical depth of 300 feet.

[9] The vertical distance between the surface and the No. 1 tunnel was 300 feet. The principal vertical shaft gained a vertical depth of 300 feet and gained a vertical distance of 300 feet.[1]

[10] The vertical distance between the surface and the No. 1 tunnel was 300 feet. The principal inclined shaft was 300 feet long.

[11] The vertical distance between the surface and the No. 1 tunnel was 40 feet; the distance between the No. 1 and No. 2 tunnels was 60 feet; and the distance between the No. 2 and the No. 3 tunnels was 100 feet. The principal vertical shaft was 300 feet deep.

[12] The vertical distance between the surface and the No. 1 tunnel was 40 feet; and the distance between the No. 1 and No. 2 tunnels was 60 feet. The principal vertical shaft was 300 feet deep.

[13] The distance between the surface and the No. 1 tunnel was 300 feet; and the distance between the No. 1 and the No. 2 tunnels was 40 feet. The principals inclined shaft was 250 feet long.

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[1] Information as reported to Idaho Mines Inspector.

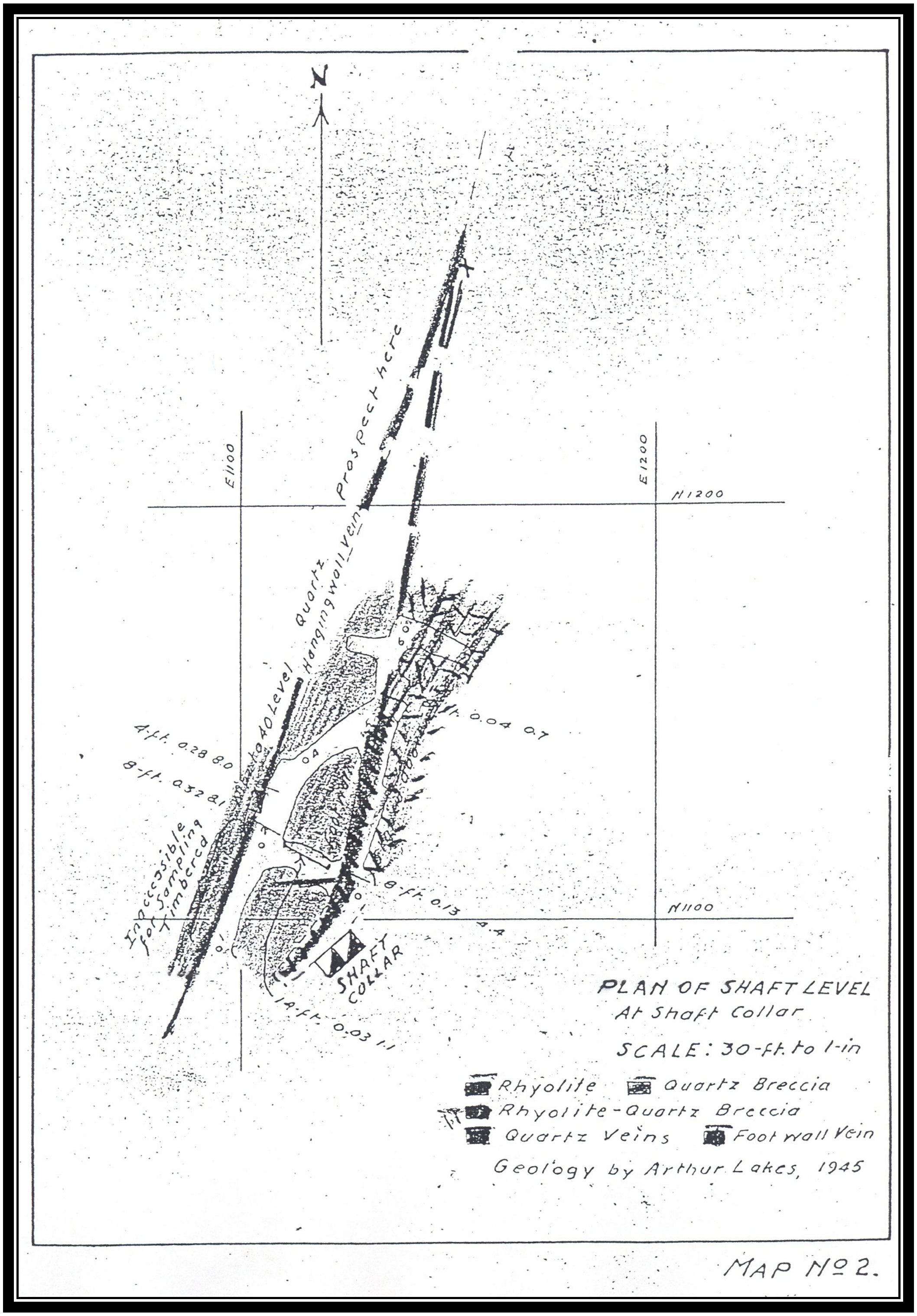

Figure 13. Map of the Shaft level of the Singheiser Mine (Lakes, 1945). Speckled background is an artifact of the black-and-white copy of the original map.

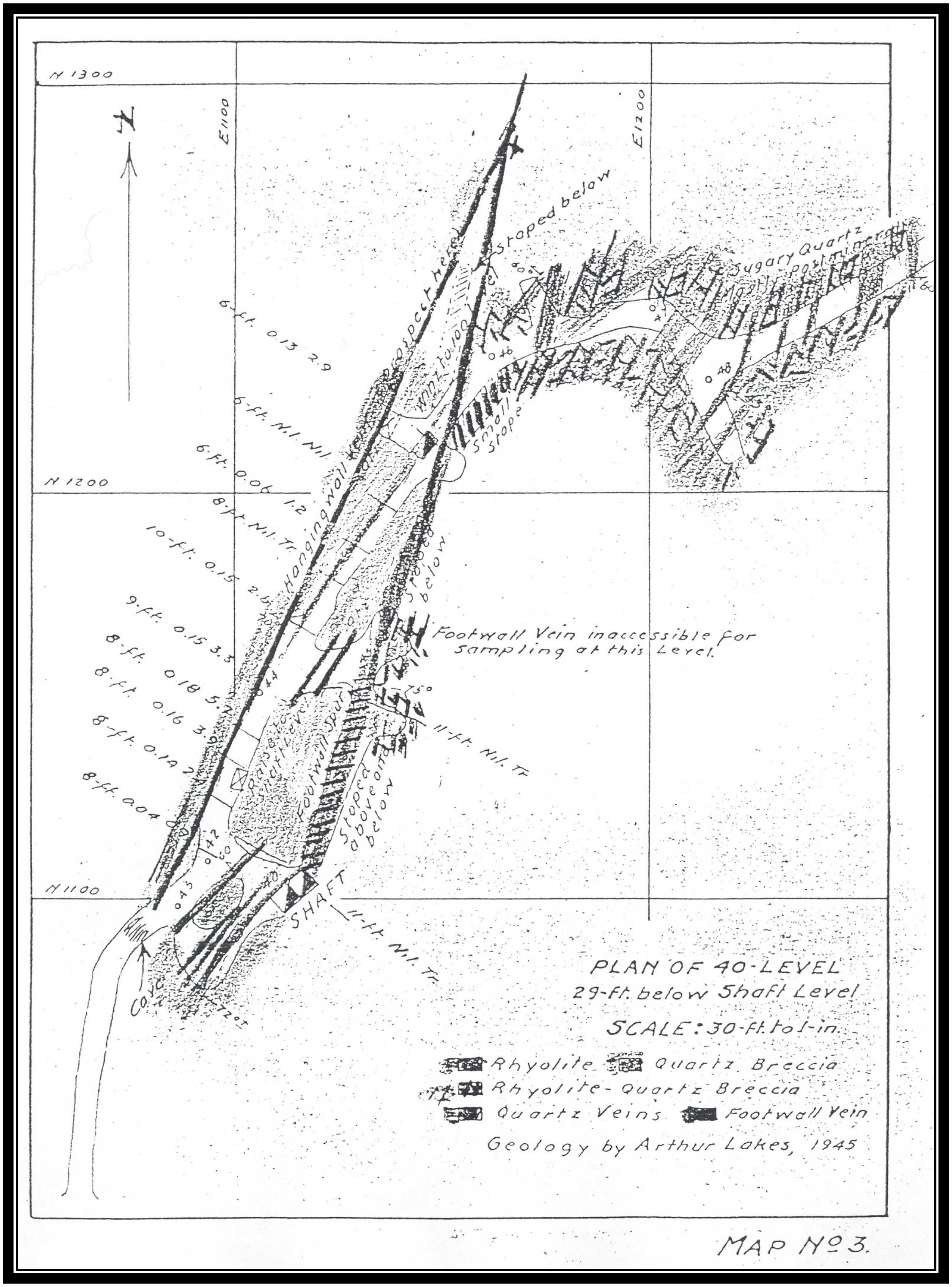

Figure 14. Map of the 40 level, 29 feet below the Shaft level (Lakes, 1945). Speckled background is an artifact of the black-and-white copy of the original map.

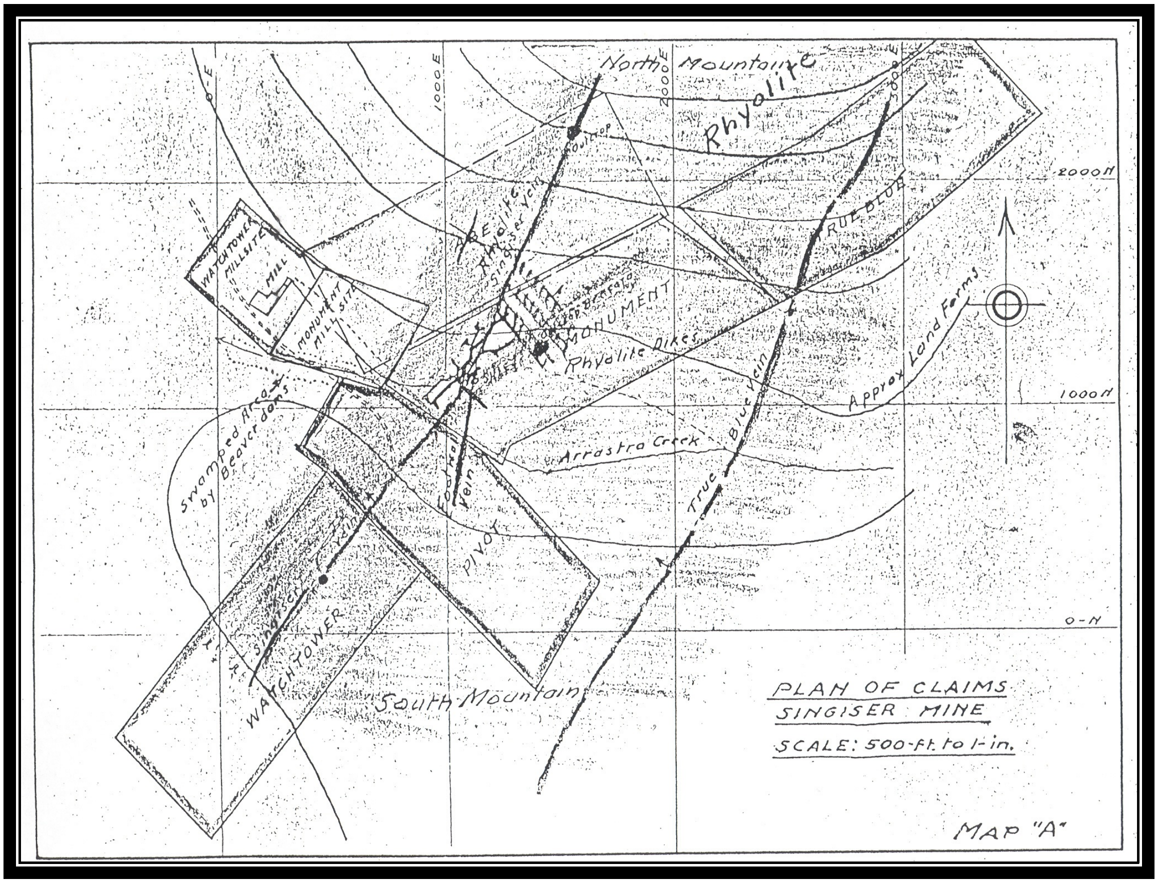

Figure 15. Map of the Singheiser Mine (Lakes, 1945). Note the position of the Pivot claim, between the Watch Tower and Monument claims. Compare this map with Figure 12. Speckled background is an artifact of the black-and-white copy of the original map.

outstanding shares of stock. During 1957, "interests from Salt Lake City, Utah" examined the property, but had not concluded a deal by the end of the year. However, in 1959, the company reported to the Idaho Mines Inspector that the controlling stock interest was held in Salt Lake City, and in 1962, it noted the controlling stock interest was owned by John M. U'Ren of Salt Lake City. The property was still idle. A small amount of production was reported from the property in the mid-1970s.

A 1982 memo records the results of a brief examination of the site made by a Bunker Hill Mining Company geologist. A thorough mapping and sampling program was recommended (Wallace, 1982). It is doubtful that this work was ever started. In 1984 Tenneco Minerals conducted a drilling program at or near the Singheiser Mine. The company, now CanAm Gold, purchased the mine in 1986 (1986 IGS). CanAm merged with Echo Bay Mines in 1987.

Total production from the mine for the periods before 1910 and during the mid-1970s totaled 2,798 tons of ore. This material yielded 317 ounces of gold, 8,415 ounces of silver, and 2,543 pounds of copper. No records were found of production from before 1900.

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[7]The title of this report is somewhat misleading. Platts was an independent consultant hired by the company to examine the mine and submit a written report of his findings.