

USBM

I. C. 5902

0260 0002

W.O. VANDERBURG 1936

(267)

Item 2

Aldrich (Iron Hat) District

The Aldrich or Iron Hat district is on the east slope of the Tobin Range 22 miles southwest of Valmy, a station on the Southern Pacific Railroad.

Several carloads of lead-silver ore averaging \$38.90 per ton were shipped by the Iron Hat Corporation in 1910. A few years ago eight unpatented claims were acquired by the Consolidated Mines Corporation of America. This company drove a crosscut tunnel about 1,800 feet long which exposed two veins at depth. About 800 feet of drifts were extended on the two veins, but only 1 car of ore was produced; it is reported to have averaged \$32 per ton (42 ounces of silver at 32 cents per ounce, remainder lead at 3 cents per pound). All mining machinery has been removed from the property.

The formation is limestone, and the veins are of the replacement type. Values are in lead and silver. Veins average about 3 feet in width and dip 60°.

0260 0002

Antelope (Cedar) District

(267)

The Antelope or Cedar district is in the Antelope Range 18 miles west of Imlay, Nev., by automobile road. Mining activity was begun in this area in 1905. The Nevada Superior Mines Co. shipped ore to smelters from 1906 to 1911, when the company erected a 75-ton gravity-concentration mill that operated until 1913. The adjoining property, the Antelope Spring Mining Co., built a 25-ton gravity-concentration plant in 1915 that was enlarged to a 50-ton flotation plant in 1917. The Majuba Copper mine located by A. J. McCauley in 1907 was sold to the Mason Valley Mines Co. in 1914. During the war the Mason Valley Mines Co. shipped 4,000 tons of 12-percent copper ore to its smelter in Mason Valley and did considerable development work. In 1920 the Last Chance property was acquired by a group from Fresno, Calif., that organized the Majuba-Fresno Silver Mines Co. In 1935 the property was taken over by Detroit interests. In March 1936 this company and the Nevada Superior Mines Co. were the only active properties in the district.

The Last Chance property comprises a group of 10 unpatented claims. Development work consists of a tunnel 830 feet long and a shaft 100 feet deep with levels at 40- and 100-foot elevations; total development work comprises 1,600 feet.

The principal rocks exposed on the Last Chance claims are shale and porphyry. Three veins are exposed in the tunnel. The veins average 4 feet in width and dip about 60°. Most of the ore is stained with manganese and iron oxides.

From 1906 to 1928 lessees are reported to have shipped 1,000 tons of ore from this property, averaging 40 ounces of silver per ton and 8 percent lead. A shipment of ore from this property made by A. J. McCauley to the U. S. Smelting, Refining & Mining Co. on July 21, 1928, furnished the following information:

Metal quotations:

Ag - - - per ounce	\$0.58875
Pb - - - per pound	0.248

Settlement assay:

Au - - - oz.	0.0175
Ag - - - do.	74.8
Cu - - - percent1
Insoluble - do.	21.6
Fe - - - do.	24.25
Zn - - - do.	1.9
S - - - do.	1.05
Pb - - - do.	20.0

Value per ton:

Ag	\$41.84
Pb	16.37
	58.21
	4.44
Net value per ton	53.77

Treatment	\$3.74
Insoluble (penalty)	2.16
	5.90
Fe (premium)	1.46
	4.44

Weight:

Wet ore - pounds	16,860
Moisture, 1.4 percent - pounds	236
Dry ore - pounds	16,624
dry tons	8.312

8.312 tons at \$53.77 per ton	446.94
Freight, \$8.50 per ton	\$71.66
Assay	5.00
Handling charge	3.00
	79.66
Net proceeds	367.28

It is reported that there are 5,200 tons of ore on the mine dump that average 17 ounces of silver per ton and 8 percent lead.

In March 1936 six men, under the supervision of Thomas Varley of Imlay, were employed in rehabilitating the mine. The cost of equipping the mine when operations were begun was as follows:

Headframe (22 feet high)	\$296.00
Timber	\$107.00
Steel rods, bolts, etc..	19.00
Ore bin	20.00
Labor	150.00
	<u>296.00</u>
Sheave wheel (24 inches) and bearings (used)	18.00
Cable, 300 feet, 5/8 inch diameter	55.00
Compressor and engine (used)	500.00
Drill, steel and bits	320.00
Hoist	80.00
Pneumatic "sponge pump"	250.00
Total	<u>1,519.00</u>

This equipment includes a compressor of 240 cubic feet capacity, belt-connected to a truck engine; a single-drum hoist direct-connected to 6-horsepower gasoline engine; and a combination sinker and Leyner drill. Detachable drill bits with 1-inch hexagonal steel are used in drilling. The bits cost 32 cents each, and three sizes are used - 7/8 inch, 2 inches, and 2 1/8 inches. Bits are sharpened at the Utah Apex mine in Utah for 8 to 10 cents each, depending on quantity.

A flow of water in the shaft averaging 28 gallons per minute is pumped with a pneumatic sponge pump. This type of pump is a recent innovation in mine-drainage equipment. It is a 2 1/2-inch by 6-inch single-stage centrifugal pump, operated by a rotary-air motor equipped with a governor and variable speed control. Air consumption is 100 cubic feet per minute at 70 to 100 pounds pressure, and the maximum lift is 125 feet. The capacity is 100 gallons of water per minute under a total head of 85 feet. At the bottom is a perforated steel screen with 9/16 inch diameter holes, and the pump will handle gravel that will pass through this opening. It will work submerged and will also handle water when the suction end is not completely in water. The over-all length of the pump is 28 inches, and it will pass through an opening 13 by 9 inches in section. The weight of the pump is 85 pounds.

The Majuba Copper mine, comprising three patented claims owned by New York interests, is on the west slope of Majuba Mountain. It is developed by three tunnels; the lowest tunnel is reported to be 2,040 feet in length, the middle tunnel about 500 feet, and the uppermost tunnel about 100 feet, and there are some subsidiary workings. All mining equipment has been removed from the property except the tramway about 1,000 feet long from the middle tunnel to the ore bin. The property was last worked in 1928 by A. J. McCauley of Imlay, who shipped 2 cars of ore averaging 14 percent copper.

The country rock is a tourmalinized rhyolite. The copper minerals in the ore are chalcocite, cuprite, and chrysocolla. Arsenopyrite, tourmaline, and fluorite are present. An interesting feature of the property is the shoot of tin ore that occurs along the fissure containing the copper ore. The cassiterite occurs in tourmalinized rhyolite associated with tourmaline and quartz. Small masses of extremely rich cassiterite ore have been found, but unfortunately not in commercial quantities.

The Nevada Superior Mines Co., E. R. Reitsch, president, 482 North Main Street, Rockford, Ill., owns two claims and a fraction of patented ground 4 miles northwest of the Majuba Copper mine. Development work consists of an inclined shaft 350 feet

deep and an adit 2,000 feet long. Silver-lead ore occurs in limestone near a schist contact. After being idle for many years the property has recently been taken over by E. J. Baker of Lovelock, under bond and lease. Smelter returns from a shipment of ore made by Baker to the International Smelting & Refining Co. on December 17, 1935, furnished the following information:

Metal quotation:

Lead - - - per pound	\$0.045
Silver - - per ounce70

Settlement assay:

Au - - - ounce	0.01
Ag - - - do.	57.24
Cu - - - percent3
Pb - - - do.	33.1
Zn - - - do.	1.9
Insoluble do.	23.4
Fe - - - do.	15.5
S - - - do.	1.1
Lime - - do.2

Metal payments:

Pb - - - 90 percent at \$0.02975	\$17.725
Ag - - - 95 percent at \$0.77 per oz.	41.871
Gross metal payment	59.596
Less treatment	3.60
Net value per ton	55.996

Treatment-charge base.....\$ 2.50

Credit Pb over 30 percent of \$0.1031

2.19

Penalty for insoluble at \$0.102.34

4.53

Premium iron at \$0.0693

Net treatment charge3.60

Net weightpounds 22,220

Less moisture 2.62 percent do.582

Dry weight do. 21,638

tons..... 10.819

10.819 tons at \$55.996 per ton\$605.82

Royalty 10% of \$570.30 ...\$57.03

Freight35.52

92.55

92.55

Net proceeds\$513.27

The Antelope mine near the property of the Nevada Superior Mines Co. has been idle about 25 years.

About 1/2 mile from the Majuba Copper mine is an arsenic deposit owned by N. Adamson, of Reno, that consists of one unpatented claim. It was last worked during the World War by E. S. Chafey, who shipped some ore.