REPORT

WALKER MINING COMPANY

Plumas County

California

John F. Cowan
August 21, 1915.

Report on

THE WALKER COPPER MINE.

Located in

PLUMAS COUNTY, CALIFORNIA.

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Salt Lake City, August 21, 1915.

Report on

THE WALKER COPPER MINE.

LOCATION

This mine is situated in Plumas County, California, about 20 miles northwest of the town of Portola. This town is on the Western Pacific, the Reno & Loyalton and the Sierra Valley Railroads. There is a railroad owned and operated by the Feather River Lumber Company which extends four miles toward the mine. I am reliably informed that this Lumber Company next spring will extend this road 3-1/2 miles farther toward the lower end of Grizzley Valley. From this point to the mill would be exactly 12 miles.

PROPERTY:

The property consists of 34 claims, 10 of which are patented. The others are held by location. Most of these claims are covered with a heavy growth of the very finest kind of pine and fir timber; enough to last the mine for all time.

FORMATION:

The formation in which the veins occur, is a diorite. The diorite has been fissured by an upheaval to the east, as evidenced by the large lava flow which extends over a large area.

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VEINS

There is only one vein developed to any extent, and that is the one occurring on the Bullion Claim. This vein outcrops very strong and can be traced to the northwest for the length of three claims. Its strike is North, 25 West, and dips 65 degrees to the East. Both walls are diorite. Along the footwall there is a belt of decomposed diorite in which occurs some garnet with low copper values. This belt may be commercial ore at a greater depth.

DEVELOPMENT

The development on the mine consists of a shaft 125 feet deep, one tunnel 250 feet long, and one 300 feet long. At a point 65 feet down the shaft, a cross-cut was made to the hangwall of the vein, a distance of 20 feet. A drift was run north for 75 feet. Forty feet north of the shaft, a cross-cut was made back to the footwall, a distance of 50 feet. This crosscut showed a well defined vein of 50 feet in thickness. The first 9 feet next to the hangwall averages 6.5 per cent copper and $3.00 in gold and silver. The other 41 feet assays from 1½ to 2 per cent copper and $1.50 in gold and silver.

From the bottom of the shaft the vein was cross-cut for a distance of 35 feet. The cross-cut was not extended to the footwall, the face being in ore of 3% value at the present time. The ore for a distance of 15 feet from the hangingwall averaged 5½ per cent copper and $3.00 in gold and silver. The other part of the vein goes from 2½ to 3 per cent copper and $2.00 in gold and silver. The bottom of the shaft, which is near the footwall, is in very good ore at the present time.

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The vein has improved greatly from the 65 to the 125 level. Undoubtedly in the next 100 feet, the entire vein will be a good grade ore. A tunnel has been run in the footwall near the surface, paralleling the vein for a distance of 200 feet. This tunnel shows a large body of decomposed diorite, carrying a good percentage of garnet with small copper, gold and silver values. The tunnel has not reached sufficient depth to get into the sulphide ore, and this garnet material is probably a capping of a large body of sulphides which will be found at a greater depth.

TREATMENT

The ore of this mine is admirably adapted for treatment by the flotation process. A test on a 100 lb. sample was made by the Mineral Separation Co. of San Francisco, and a saving was effected of 93 per cent of all values. An offer was made by this company to erect a plant guaranteeing a saving of better than 90 per cent on all the ores of the mine.

A thorough test has lately been made by the General Engineering Company of Salt Lake City, by which they obtained an extraction of 97% of all values. The concentrates made from this test averaged 20% copper and $8.00 in gold and silver. Those made by the Mineral Separation Co. were somewhat higher, averaging 22 to 24% copper. The variation in the grade of the copper is explained by the difference in character of the ore treated in the two tests.

The ore next to the hangingwall for an average distance of 12 ft. will average in value 5½ to 6% copper, just as it is broken down. It will take 3½ to 4 tons of this ore to make one ton of concentrates

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while the lower grade part of the vein will take 10 to 15 tons of ore to one ton of concentrates.

A conservative estimate of the value of this ore as treated by the flotation process would be as follows:

Cost of mining 3½ tons @ 3.00	$10.50
" " tramming 3½ " @ .25	.87
" " milling 3½ " @ .50	1.75
" " hauling 1 ton of Concentrates to R. R.	5.00
" " freight & treatment	10.00
Total cost of 1 ton of concentrates...	28.12
Value of 1 ton of concentrates of 20% copper with copper at 17¢ per lb., New York quotation	68.00
Gold and silver values	10.00
	78.00
Less deduction of 2½¢ on 400# copper	7.00
Net value	71.00
Cost of product'n	28.12
Net per ton.....	$42.88

Or $12.25 per ton of crude ore.

The ore in the 3 foot streak on the hangingwall side of the vein averages one ton of concentrates to every 3½ tons of ore. That obtained from the lower grade part of the vein would be one ton of concentrates from 10 to 15 tons of ore.

The facilities for working the property are good, except in the matter of transportation. A good wagonroad is already built to the Railroad Company, over which freight can be hauled for $5.00 per ton. A railroad could be constructed to the property at a distance of 16 miles, starting from the end of the railroad which belongs to the Lumber Company situated at Portola.

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AVAILABLE ORE

The ore actually in sight above the 125 foot level is 10,000 tons, but the ordinary method of calculating ore is to allow fifty feet beyond each exposure. By this method there is in the mine a block of ground 175 feet long by 175 feet deep and 12 feet thick, making a total of 30,625 cubic feet. Allowing 12 cubic feet to the ton, this will yield 35,680 tons of ore. At the present price of copper (i.e. 17¢ per pound) this ore will net $12.00 per ton, or a total net profit of over $300,000. With a 15¢ copper market it will net $8.00 per ton or $200,000. This estimate is for a 100 ton plant and with a wagon haul to the railroad.

This deposit of copper will without a doubt go to the deep. It is so big and strong and every part of the vein is so thoroughly mineralized that there is no doubt whatever of its continuing to the deep. The outcrop is continuous for over a mile in length, and while we have no way of determining definitely the length of the ore shoot from surface indications, it is safe to say that it will continue for a long distance. With a large equipment and rail transportation the entire vein of 50 feet in width can be worked at a good profit.

The grade of the ore in the footwall side where the low grade ore occurs is improving with depth. The shaft is now in that part of the vein and it averages about 3% copper. The same ore on the 65 foot level averages only 1½ to 2%. The indications are that with another 100 feet of depth, the entire vein of 50 feet can be worked at a good profit even with a small mill.

CONCLUSION:

The main thing that recommends this mine is the large vein, the high values and the easy treatment of the ore. It will prove a winner if given good management and good equipment.

Respectfully submitted,

(signed) Jno. F. Cowan

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