

-REPORT ON-

THE LEDGE MINING MILLING CO.

RED MOUNTAIN, COLORADO.

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For The Year 1901.

MINE MANAGER'S REPORT PAGE 324

STATE BUREAU OF MINES

STATE OF COLORADO

THE LEDGE MINING & MILLING CO.

RED MOUNTAIN, COLORADO, OCT. 1, 1901

SITUATION

The property, known as the "Silver Ledge" Mine is located nine miles north of Silverton, Colorado, on the line of the Silverton Railroad, which is connecting line of the Rio Grande Railroad, and is accessible at all seasons of the year

PROPERTY

The property consists of seven patented claims and two unpatented ones. Their relative position being shown by Plate No. 1. Several of the claims having been taken for the timber rights.

TIMBER

There is an abundance of timber on the property which is delivered at shaft house in required lengths at two cents per running foot.

WATER

There is an abundance of water for power seven months in the year; and by the expenditure of Two Thousand Dollars (\$2,000.00) water power could be assured for the remaining five winter months. And the water rights are perfectly secured.

SHIPPING FACILITIES

The loading switch is one-half mile from the mill by wagon road. A spur can be built from track to mill for about Seven Hundred Dollars (700.00). Durango, the smelter point is fifty-eight miles distant.

FORMATION

Extending North and South the entire length of the property is a Porphyry formation or dyke from one hundred to three hundred feet in width, with a Diorite formation on the East and West, Represented by the irregular lines shown on Plat No. 1. Running nearly parallel through this dyke, are four mineral fissure veins which have been explored by surface workings through three thousand feet of the dyke, and are shown to be continuous to a depth of four hundred feet by the development of Shaft No. 1.

Plat No. 2 illustrates the relative position of these veins for eight hundred feet of the dyke as well as surface developments.

Two of these veins have come together forming an immense ore chute. Most of the development has been done on vein No. 2, the main shaft and drifts following this lead.

The ore in the vein is found in chimneys or ore chutes, fifteen to twenty feet apart, following the vein or gauge streak and being thirty to fifty feet in length and from four to twenty feet wide, and known to be continuous from surface to the depth of four hundred feet, the lowest workings.

Running at right angles to the length of the formation, (See Plate No. 2), is an immense ore chimney sixty feet wide and two hundred feet long which has been explored to the depth of fifty feet. This entire chimney is milling ore which can be mined and delivered in the mill for seventy-five cents per ton.

ORE

The Matrix is a Tale or a Silicate of Magnesia, containing (Lead) Galena, (Iron and Copper) Pyritic and (Zinc) Blende. The Iron and Lead carrying both Gold and Silver values in the following proportions: Lead, ten per cent. Silver, eight ounces, and Gold, one-tenth ounces per ton.

While these values represent the average mill ore without cobbing or sorting, ore of much higher value has been encountered, but is so erratic in occurrence, that, as a factor in the profits, it cannot at the present stage of development be considered. However, the history of this section and especially this formation, will warrant the expectation of large bodies of high grade ore.

There is now blocked out in the mine one hundred thousand tons of mill ore, with a value of Nine Dollars (\$9.00) per ton.

DEVELOPMENT

Reference to Plates No. 3 and 4 will show the development, the amount of stoping and the ore reserves now blocked out. This is self explanatory, so will not embody the details in this report.

PLANT

The mine is equipped with a thirty horse Kennedy & Pierce friction hoist; a Snow Pump, capacity fifty gallons per minute (two and one-half hours pumping in twenty-four hours keeps the mine dry); and eight inch Starvevent Blower. The mine is well piped and the air perfectly pure. Mine equipment is adequate for handling seventy-five tons of ore per twenty-four hours, besides the necessary timber and waste.

CONCENTRATING MILL

Situated seventy-five feet south of shaft house, having a covered trackway from shaft to ore bins. Building is on a hill-side of forty-five degrees, one hundred fifteen feet long, twenty-six feet wide, forty-five feet high and four storeys.

The ore is not handled after it is dumped into the crusher at the top of the mill, everything throughout being automatic.

Machinery consists of a Gates Gyrotory Crusher, two sets Gates Rolls, three Revolving Screws, for Three Compartment Harts Jigs, two Elevators, ten Eight Hundred and Fifty pound Gates Stamps, two Wilfley Tables, one Twenty-four inch Pelton Motor, One Five foot, Pelton Motor. Pipe line for small motor is sixteen hundred feet long with three hundred forty feet of pressure. The five foot motor is supplied by a flume four feet by four feet and six

hundred feet long, and a pipe line ninety feet long, giving a pressure of seventy feet. One fifty horse power Chandler & Taylor Engine for power when water supply is short, one Eighty horse and one Forty horse power Tubler Boilers.

The mill has a capacity of twenty tons crude ore per twenty-four hours. But with the expenditure of Three Thousand Dollars (\$3,000.00), it would have a capacity of sixty tons per day, which amount can be handled at no greater expense than the twenty tons.

CONCENTRATION

v In the vicinity of this property are ten concentrating mills of a capacity varying from fifty to two hundred fifty tons per day, but are in successful operation with ore of no greater values than the ore of the Silver Ledge.

In a concentrating mill, the values of a number of tons, varying with the character of the ore, are concentrated into one ton. The process consists of grinding the ore to a fineness; the particles of mineral being much heavier than the particles of dross, a separation is easily accomplished, by automatic machinery. The dross is thrown off, and the heavy lead and iron, containing the gold and silver values, is saved.

Will illustrate the profits of concentration by the following tables:

Taking four tons crude ore from the "Silver Ledge" mine, assaying ten percent Lead, eight ounces Silver, one-tenth ounces Gold, with a value of about Nine Dollars (\$9.00) per ton, or a total value of Thirty-six Dollars (\$36.00).

WITHOUT CONCENTRATION

Mining 4 tons of ore at \$2.00 per ton.....	\$ 8.00
Freight on 4 tons of ore at \$4.00 per ton.....	16.00
Smelter treatment on 4 tons of ore at \$6.00 per ton.....	24.00
Total cost of 4 tons of ore	\$48.00
Total value of 4 tons of ore.....	36.00
Total loss on 4 tons of ore.....	\$12.00
Or \$3.00 per ton.	

WITH CONCENTRATION

Mining 4 tons of ore at \$2.00 per ton	\$ 8.00
Milling 4 tons of ore at \$.50 per ton.....	2.00
Freight on concentrates therefrom.....	4.00
Smelter treatment on concentrates therefrom	2.00
Total cost of concentrates.....	\$16.00
Value of concentrates from 4 tons of ore, based upon an 80% saving (80% of \$36.00).....	28.80
Total Profit on 4 tons of ore	12.80
Or \$3.20 per ton of crude ore.	

These tables are based upon actual results, and it will be noted that 20% is deducted for loss in concentration, which for ore of this character, is a greater loss than actual experience will demonstrate.

It will be further noted that the smelter charges on crude ore is rated at Six Dollars (\$6.00) per ton, while the concentrate product is at Two Dollars (\$2.00) per ton. This is one of the benefits of concentration for the product is one which the smelters desire for a flux, a great amount of refractory properties having been removed by the process.

Basing the proposition on these figures, one hundred thousand (100,000) tons of ore in sight shows a profit of Three and 20/100 Dollars (\$3.20) per ton or an aggregate of Three Hundred Twenty Thousand Dollars (\$320,000.00) and only four hundred feet in depth and five hundred feet in length of the property included in this tonnage. Surface croppings and prospecting show large bodies of ore unexplored.

The price of mining and milling per ton is based on an output of sixty tons per twenty-four hours. As the tonnage is increased, the expense of mining and milling is decreased per ton. The conditions and situation of the property are such that the tonnage could be increased so that the magnitude of the enterprise would only be limited by the amount of capital invested in machinery, improvements and development.

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