

REPORT
upon
SHEEP MOUNTAIN TUNNEL
by
JOE L. JAHAN
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The project comprises the following patented properties: Diadem, Iron Clad, Black Hawk, Sparr, Atlanta, Michigan, Lost Horse, Tiger, Old Solitary, America, O. B. S., Cashier, Clark No. 2, Clark No. 3, Crystal City, Crystal City No. 2, Crystal City No. 3, and Lost Horse Millsite; 142 acres.

LOCATION:

The property is located at the old town of Crystal, Gunnison County, Colorado, six miles southeast of Marble, the terminus of the San Juan and Crystal River Railroad.

ACCESSIBILITY:

There is a good truck road from Marble to Crystal, which can be made very much better with a small expenditure of money. This road connects with the main automobile highway to Glenwood Springs.

HISTORY:

Crystal is located in the Rock Creek Mining District of Gunnison County, Colorado. It was discovered and developed about forty years ago. The mines were worked chiefly for the silver values, but some gold, lead and copper were also taken out.

The whole drainage basin of the Crystal River was explored, many mines located and a small amount of development work done. A few of them were worked profitably at the surface, where the oxidized ores occurred. Roads and trails were built and the camps of Gothic, Elko, Scofield, Crystal and Marble were established. They discovered considerable complex ores, and under the then known methods of treating ores, they could not be successfully handled in the smelters at that time. The development that was carried to any depth developed considerable mineralization, and with the modern preferential flotation practice, the ores are now workable and can be handled profitably. Very few of the early day production records can be procured, but from those procured it is evident that the operations in the late '80's and '90's were quite profitable from the oxidized zone.

IMPROVEMENTS:

A concentrating mill with crushing capacity of 150 tons;

- 1 - 9 x 15 Blake Crusher;
- 2 - sets of rolls, 15 x 27 and 14 x 20;
- Screens and elevators;
- Trommels;
- Elevator buckets;
- Shaftings, pulleys;
- 1 - 2 cylinder 14 x 24 Ingersol Rand air compressor;
- 1 - 36 inch Leffel Turbine water wheel, 30 inch pen stock, which develops 133 h.p., which drives the compressor and runs the mill;
- 7 - Wilfley tables;
- Track and old cars and air line.

DEVELOPMENT:

The Sheep Mountain property is developed by a tunnel which starts 70 feet from the Crystal River and upon the county road. This tunnel is 5' x 7' in the clear, runs nearly north for 500 feet, cross-cutting the country rock, and then turns northwest, following a black shale bedding plane for a distance of 2500 feet. A crosscut has been driven south and a lateral run west upon a lime contact bed for 200 feet, which is known as the Lucky Boy contact.

In the main tunnel six upraises have been made for a short distance in this black shale, one for considerable distance, which can be completed for an air shaft. The tunnel can develop ore for 1200 feet below the surface.

GEOLOGICAL STRUCTURE:

The mountains of the district are of sedimentary origin chiefly, with here and there igneous intrusions. These igneous intrusions have caused upheavals. When the beds settled to their permanent position they faulted. Some of these faults have a very small displacement; some of them are quite large; but the amount of displacement in the faults which make ore is very slight.

According to the geological field map by Mr. John W. Vanderwilt of the U. S. Geological Survey, Treasury Mountain is the center of the main upheaval, and this mountain is mostly porphyry. The sedimentary beds lying around the edge of this main upheaval are the Pennsylvania series up to Cretaceous. There is some difference of opinion as to the age of the beds lying between the Dakota Sand of Cretaceous age and the marble beds which are of Pennsylvania age. Mr. Vanderwilt has identified these beds as Permian, but they are composed mostly of limes, shales and quartzite, which are not common in the Permian beds in that vicinity. I think they are Morrison or La Plata limes, and are probably both.

ORE OCCURRENCES:

The ores in this district occur as replacements in the lime strata, usually at the top of the lime strata and at the contact of the overlying heavy black shale members.

The ores in the Black Queen Mine all occur chiefly at the contact of the top of the lime and the bottom of the shale members.

The ore in the Sheep Mountain Tunnel is in the black shales and no effort has been made to crosscut into the lime, which is the foot wall of the strata that the tunnel has been driven upon.

The ore occurs in these lime members in fault zones. These zones of faulting show a very small displacement, but the fault fractures are filled with vein matrix from two inches up to two feet. You will find fifteen or twenty small veins running parallel in a north-westerly direction, which definitely define the width of the ore shoots, with the exception that north-south trending faults tend to increase in richness and width at the point of intersection.

ORE SHOOTS:

The ore shoots in the Sheep Mountain district are all trending northwest. The strike of the north dipping sedimentary beds has been cut in a northwest-southeasterly direction by a series of fault zones. These zones are from 25 to 100 feet in width and there may be numerous ones running parallel for long distances down the north dipping bedding planes, as is evidenced by the ore shoots of the Lead King Basin, which are two and one-half miles north

of the portal of the Sheep Mountain tunnel. Three ore shoots have been developed in the Black Queen in a distance of 500 feet down the dip of this lime member.

From the mineralization in the Sheep Mountain tunnel there are seven or eight different ore shoots. The evidence of faulting has disappeared in the shales, as they are more elastic than the lime bed immediately underneath. The mineralization spoken of by Mr. Bernard Noon in his report of February 11, 1922, is good evidence that the fault zones have been cut. He gives in his report as ore in sight, a body of ore six feet wide, seventy feet high, six hundred feet long, or 252,000 cubic feet, or approximately 25,000 tons of ore that will average \$20.00 per ton in gold, silver, lead, copper and zinc. These figures are based upon the old prices.

ORE POSSIBILITIES:

In view of Mr. Noon's measurements of ore and from the information we have gathered from the work in the Black Queen Mine, the ore possibilities in the Sheep Mountain tunnel are fully twice as much as Mr. Noon figures, because this is confined entirely to the upraises made in the black shale. The writer examined seven other mineralized points in the roof of the Sheep Mountain tunnel.

By crosscutting into the lime where ore shows in the shales in the tunnel, large stopes can be opened and the ore in the lime will be much more valuable than the deposits in the hanging wall shale. From shipments made from the Black Queen mine in September and October two shipments were made from the hanging wall shales. These shipments show values from \$18.00 to \$26.00 based on \$19.00 gold and .37¢ silver. Shipments made from the lime immediately below the shales showed values from \$34.00 to \$50.00.

Upon the surface where these shoots outcrop there is heavy mineralization, as is evidenced in the Lucky Boy claim. Mr. Vanderwilt in his report says that there is 1000 feet of exposure of mineralization upon the Lucky Boy contact.

From samples taken in the Sheep Mountain tunnel assay results gave:

Gold, .01 ozs. to .46 ozs; Silver, 1.70 ozs. to 300. ozs; Copper, 2% to 40%; Lead, 6% to 30%; Zinc, 9% to 27%; Iron, 4% to 21%; Insolubles, 1% to 40%.

A sample taken across the ore for a distance of four feet the results were as follows:

Gold, .01 ozs; Silver, 12. ozs; Lead 8.13%; Zinc, 9.27%; Copper, 28%; Iron, 21.60%; Insolubles, 28%.

RECOMMENDATIONS:

I recommend that the water power plant be put in operation; that new air drills be procured and the tunnel opened up and at all points where ore occurs in the shales, to drive crosscuts to the south into the lime so as to develop the higher grade ores, which, no doubt, will be 30% to 40% commercial shipping ores, and that the rest of the ore be left, to be milled at a later date.

This development can all be accomplished for about \$10,000.00. The old mill could be revamped and selective flotation installed for an additional \$7500.00, which will give a capacity of 75 tons a day.

CONCLUSION:

If the project is put upon an operating basis and developed in

accordance with the suggestion herein outlined, it can be built into a very large mining property comparing favorably with many of the largest operations in this country. It can be made to show an extra good profit upon a small tonnage operation.

Respectfully submitted,

(signed) Joe L. Juhan

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