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TWIN "J" MINES

DUNCAN, B. C.

PAST HISTORY

The Twin "J" Mine, situated a few miles from Duncan on Vancouver Island, comprises three old mines, the Tye, Lenora and Richard III. These mines were worked between 1903 and 1907 when they were closed because of the exhaustion of the then known ore bodies. The same ore bodies extended without a break through the three mines. There were two parallel bodies one to two hundred feet apart similar in size and shape but differing in composition and tenor. The principal producer, known as the south ore body, had a total length of 2,800 feet, a mean width of 20 feet and depth of 150 feet. ⁽¹⁾ It supplied the bulk of the ore taken from the old mines. The Tye company extracted 166,000 tons which yielded 14,715,336 pounds of copper, 415,446 ounces of silver and 26,000 ounces of gold. The Lenora company extracted 80,000 tons and the Richard III, 4,000 tons. The grade of the Lenora ⁽²⁾ ore is estimated to have been 4.77% copper; 3.28 ounces of silver; and 0.188 ounces of gold per ton.

The north ore body contains less copper and gold but carries over 5% zinc which is the metal specially sought at this time and is the main reason for the present operation.

Before abandoning their mine the Tye company made an extended though fruitless effort to find other ore bodies. The shaft was greatly deepened and much drifting and some diamond drilling were done. Some zones of mineralization were found in the deeper levels but nothing approaching commercial ore. These

(1) Weed, H.W., Notes on Tye Copper Mine, Eng. & Min. Journ., Jan. 25, 1908, pp. 200

(2) Rep. on Mining & Metallurgical Industries of Canada, 1907-08, Dept. Mines, Mines Branch, pp. 171

attempts were hampered by the fact that this company owned only one of the three claims across which the ore bodies extended and it now appears probably that the attempted was further hampered by faulty geological theories.

PRESENT STATUS.

In recent years several attempts have been made to revive these old mines and finally the Twin "J" Mines Limited, with some government assistance have succeeded. At present an efficient operation is being carried on in which 135 tons of ore, mainly from the north ore body is mined and milled daily. The old ore bodies and their immediate vicinity have been thoroughly explored and while a considerable tonnage of ore has been developed the possibilities in and near the old ore bodies are now pretty well exhausted and the company is facing an early shutdown.

The operation has now become a salvage operation and expenses have accordingly been cut to the limit. This has resulted in the almost complete neglect of geological mapping. There are at present no geological plans or sections of the underground workings. This lack has rendered more than ordinarily difficult the appraisal of immediate as well as future possibilities.

However, judging from the thorough manner in which recent mining and exploration have been carried on it seems quite unlikely that any more ore remains to be found in or near the present workings. Nevertheless, a complete set of geological plans and sections might point to some well obscured ore remnants.

FUTURE POSSIBILITIES.

The future life of the mine, if any, would depend on the finding of other ore bodies of dimensions and grade comparable to those of the old south ore body. Ore of the grade of the north ore body would hardly be commercial under any conditions likely to obtain in the post-war period. Unless an oriental or European market

were found the zinc concentrate would not be worth the cost of producing it. The south ore body however produced metals which at present prices would be worth about \$3,000,000, of which one-half would be net profit. Such a prize is worth a gamble and there is some reason to hope that such ore bodies may be found.

Almost never is a well mineralized area exhausted by the first period of operation, particularly when this period ended in the early years of this century and more particularly still when the deposit occurs in an unusual and complicated structure such as the one in question. A large number, if not a majority of the present successful operations in western America are revivals of old mines or mining camps.

The old mine offer to the ore seeker some important advantages over the raw, newly discovered prospect. In the first place the old mine is known to be in a well mineralized region, a region in which requisite attributes to ore formation are already demonstrated. The geology of old mines can be studied in detail in three dimensions and the factors controlling ore localization can often be determined and used in further exploration. Accessibility is easy and in the case of the Tye mine it is fully equipped.

Owing to lack of geological records it is not easy to point out specific evidence bearing on the future possibilities of the Tye mine. However, from the brief examination made by the writer, it seems highly probable that the old synclinal theory on which the Tye company based their plans for exploration is not valid. It also appears highly probable that drag folds such as those in which the old ore bodies were enclosed will recur at more or less regular intervals to the south and at increasing depths. This theory could be proven from a complete study of the old workings.

RECOMMENDATIONS.

For the following reasons I would strongly recommend that before the present operations cease a complete set of detailed geological plans and sections be made of all the underground workings. A set of assay plans including drill holes should also be made. This work will cost little and can be done by the present staff in four or five weeks time. If this record is not made now it will be forever lost as the workings will very soon become inaccessible. The work might indicate the presence of some small remnants of ore which have been missed and point to some promising areas within easy reach of the present workings. The study of these records will assist in the appraisal of the immediate and future possibilities of the property. If any extensive exploration is attempted these geological records will form a basis on which to plan the methods and direction of exploration.

The decision as to whether or not an extensive exploration should be attempted can best be made when the above geological investigation has been completed.

Signed, V. Dolmage.

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