

THE COMRADES GOLD MINE - LEFROYIntroduction

On the 14th instant a hurried visit of inspection was made to the Comrades Gold Mine at the invitation of the Syndicate engaged in its operation. This Syndicate has recently re-opened some of the old workings and repaired them and has performed new exploratory work also. The early operators ceased work here many years ago at the time of the decline of the Lefroy Field.

At the time of visit none of the shaft openings was accessible owing to the rise in water level, consequently attention was directed to outcrops. Since then, a copy of the excellent report of Austin Allom, written in 1899, and the plan and sections of the underground workings prepared by C.B. Watchorn have been made available. The description in that report of the ore-body at the two levels of the main workings conveys a clear impression of its nature and value. In some degree the conclusions arrived at, and embodied in this report, are based on the information contained therein.

THE ORE-BODY AND ITS DEVELOPMENT

The vein, 6 to 12 inches wide, coursing 70 degrees, and dipping south-ward at a high angle, has been exposed in four shafts over a distance of 184 feet and its extension has been found over 200 feet farther eastward in trenching across the line of strike. It is doubtful, however, whether the vein is continuous throughout that length. North-easterly trending faults dipping north-eastward displace the vein and define the extent and pitch of each gold-bearing shoot. The material consists essentially of blush quartz with blebs of the accessory sulphidic minerals, pyrite, arsenopyrite, and galena. Almost the whole amount of gold is contained in the quartz but little free gold can be detected. A comparatively small proportion is contained in pyrite and arsenopyrite.

The best exposure is in main shaft which is of dimensions 6 feet by 3 feet and 96 feet deep. Levels are opened at 31 feet and at 85 feet. At the 31 foot level the vein is opened 85 feet eastward and 24 feet westward. From the 31 foot level at a point 20 feet east of shaft a rise connects with surface and a winze connects with the 85 foot level. Thirty-four tons of vein material stoped above the 31 foot level on the east side yielded 42 ounces of gold. Batches of very rich stone were cut but these invariably gave place to poor material. No rich stone was found east of the slide or fault, and westward of the shaft, the gold bearing stone petered out in 20 feet, leaving veinlets of barren quartz only, to mark the course of the vein.

The sinking the winze the rich stone soon gave place to almost barren quartz, and at the 85 foot level the stone was narrow, erratic and barren. At the fault the stone is displaced 14 feet to the south where a crosscut meets the vein again. Continuing the drive eastward the operators exposed another shoot of ore. This in appearance is very similar to the rich stone of the upper level but is poor. Here the quartz is likewise flecked with pyrite, chalcopyrite and arsenopyrite, and galena, but the sulphides only contain gold. One sample of the concentrated sulphidic ores contained gold in the proportion of 1 ounce, 12 dwt. 16 gr per ton.

The last bulk parcel of stone from the upper level yielded gold at 24 dwt. per ton.

Baker's shaft, 32 feet deep, is 124 feet east of main shaft. In this, rich patches of stone, (4 oz. to 11 oz. of gold per ton) were found, but a sample of stone on the dump at the pit-head yielded only 8 dwt. of gold per ton. Allom's shaft, cut the vein at 60 feet. The value of the stone at this point is not known as very little of it can be found on the dump.

FUTURE OPERATIONS.

It is proposed to sink the main shaft to a depth of 200 feet. For this purpose a 10 horse-power boiler and steam winch is to be erected. It is considered that the mine can be drained by bailing.

The mine water is to be used in the boiler, owing to the difficulty in getting natural supplied. This water contains free sulphuric acid which will have a strong corroding effect on the boiler tubes and plates.

GENERAL REVIEW.

It will be seen from the foregoing that the early operators were unsuccessful, and that the ore in the lower level of main shaft opened by them, is almost barren. Since that time another short shoot of ore has been opened in Baker's shaft, but its extent and actual value has not been determined. Apparently the stone in Allom's shaft is poor, otherwise the work of exploration there would not have been stopped. The vein is narrow, the bold bearing shoots of ore are short, the vein is displaced by faults, and the stone below 50 feet level is very poor: these facts do not lend much encouragement to further exploration. Moreover, on the evidence at hand there is no reason to expect richer gold bearing stone at depth, nor is there anything to suggest that the size and extent will improve as development is advanced. The average value of the richest sections of the short ore shoots is £5 per ton a low figure taking into consideration the cost of mining and treatment, and one that will not allow of successful operation. This business of the Syndicate appears to be economically unsound. Whether further exploration is justifiable is a moot case.

A. McIntosh Reid,

GOVERNMENT GEOLOGIST.

Hobart.
18th February, 1926.