

REPORT ON AMBER CREEK MINELocation and Access

The mine is situated three miles to the south east of the township of Gladstone in north eastern Tasmania.

Access is gained by the road from Gladstone to Ogilvie's bridge on the Ringarooma River. A cart track connects the mine with this bridge. Gladstone is connected by good motor road 16 miles in length, with Herrick. Herrick is connected by railway and road with the rail and road systems of the State.

Leases etc.

The mine is located upon the following leases:-

Consolidated Lease	No. 7612/M	53 acres
Lease	9125/M	5 acres

charted in the name of Michael J. Groves. At the present time an extended prospecting claim of 320 acres is held in the same name.

Two water-rights (1691/W) of 5 sluiceways and 1 acre dam site, and 1694/W of 1 sluiceway are also held by M. J. Groves.

Topography

The mine is situated on the northern edge of a small plateau on the eastern side of Peacock Creek. From the edge of this plateau the surface falls steeply to the Ringarooma River, 30 chains to the north. The plateau is at an elevation of 250 feet above the river.

The general drainage is to the north either by small streams such as Peacock and Amber Creeks entering the Ringarooma, or by the Mussel Roe River and its tributaries such as Old Chum Creek.

Geology

The bedrock of the country within the vicinity of the mine consists of the typical granite of the north-eastern districts. It is not however so noticeably porphyritic as in some districts. In the bottom of the workings near the huts, the granite is slightly porphyritic. In the bottom of the workings at the western end of the lease the granite is a peculiar soft, even grained variety, suggestive of alteration by mineralising agencies.

The mine workings show that the granite is overlain by 50 to 60 feet of sedimentary beds. These consist of gravels, grits, sands, and clays, which represent deposits along the course of a former stream, or in other words a deep lead.

The small creeks and gullies descending from the plateau have very narrow tracts of recent gravels etc. along them.

Mine Workings.Eastern End of Leases

At the eastern end of the leases, an old working covers about 2 acres. The granite bottom is at an altitude of 160 feet above the Ringarooma River. Owing to the falling in of the faces, the bottom 20 feet are not available for inspection. It was stated by Mr. Groves that the wash and tin ore were similar to those in the face being worked (see below). A prospect from 20 feet above the bottom gave a small amount of cassiterite. It is stated by Mr. Groves that the lower 15 feet of wash contains good values of tin ore, and that the overburden of 45 to 50 feet would pay for its removal. There is said to be a defined gutter in the bottom and that the deposits could be worked out on the high reefs to a width of four chains.

The old workings are stained brown and yellow due to oxidation of pyrite or marcasite. Some of the grits are cemented with the sulphide, but it is stated that most of the pyrite comes from the bottom.

Present Workings

At the time of the writer's visit a face was being worked immediately to the south of the south-east corner of section 9125/M. A tail race was brought in from the north west through section 9125/M. The race out through the high reef on the north-western side of the lead where there was 20 to 25 feet of quartz grit and finer sandy material. The bottom layer on the reef is stained dark brown and in some places this band extends horizontally into the deposits above the gutter of the lead. As the deeper part of the lead was approached about 10 feet of pug was intersected, but it is stated that this is being replaced by angular drift. Brownish quartz grit overlies the drift which is getting deeper on the south side of the workings.

The quartz grit is overlain by similar grit with however some clay in it, and bands of iron stained material. Near the surface, the beds are fine sandy ones. The total depth of the face is 50 feet. The lowest 8 feet are stated to be the richest but the beds are tin-bearing up to the first brownish bands. Samples of the bottom wash shown to the writer consisted of small water worn pebbles in clayey material and contained abundant coarse rounded pieces of dark cassiterite. Judging by the samples the wash would contain up to 40 lbs. per cubic yard and it is stated by Mr. Groves that the bottom 8 feet of wash would average 20 lbs. per cubic yard. This of course could not be officially verified without a considerable amount of prospecting.

The tin ore is chiefly dark in colour but a small amount of light grey cassiterite is also present. It is stated that there is no pleonaste, ilmenite, or zircon present the only mineral associated with the cassiterite being the pyrite the occurrence of which has been referred to above.

The bottom of the working is not more than 200 feet above the river, so that the lead falls from the west to the east. Its course would appear to be due east through the consolidated lease.

South Western Part of Lease

Going south-south-west from the above working, the ground is stated to have been prospected by bore holes. Within a few chains of the southern boundary, it is stated that a bore-hole was sunk to a depth of 60 feet without being bottomed and that it proved payable ground.

Another situated about 6 chains to the north-west of latter is said to have been 45 feet deep and proved payable ground.

To the west of the latter bore hole a start was made to bring in a tail race from the west to prospect and pick up the lead. A length of two chains was sluiced out and then the working abandoned on account of lack of water pressure. The granite bottom was 220 feet above the river and rising to the east, so that the high reef of the lead was not reached. The coarse drifts which were sluiced are stated to have yielded fine cassiterite, apparently different from the ore in the lead.

North-western part of Leases

A working, covering about one acre, occurs near the north-western corner of the consolidated lease. The surface of the ground slopes to the north, but the granite bottom is generally level with perhaps a slight fall to the south-east. The bottom is at an altitude of 210 feet above the Ringarooma River. The wash and cassiterite are similar to those in the present face but this working cannot be part of the main lead. It probably represents the deposits on the north-western high reef or possibly a tributary lead.

Water Supply

This mine is unfortunately placed as regards water supply. The present water-rights have their intakes on Amber Creek, which practically only gives a supply after rain. Water could be brought in by gravitation from Old Camr Creek, Little Mussel Roe and Great Mussel Roe Rivers, but the available water in these is practically all used in the Mount Cameron Water-race.

The Amber Creek branch of the latter is at a level about 10 feet below the bottom in the eastern end of the workings. If supplies were therefore available in this race, the water would have to be pumped from it.

Probably the best and most permanent supply of water could be obtained from the Ringarooma River. The water would have to be pumped to a height of 200 to 250 feet and then be given the desired pressure with a nozzle pump. While this might be considered more costly than a gravitation scheme it would give a good, uniform and permanent supply.

Economic Geology

The above workings, bore-holes etc. prove the existence of a deep lead with a depth of 50 to 60 feet. This lead appears to enter the south western part of the leases. It trends north-east towards 9125/M and then turns to the east through the remainder of the consolidated lease.

To the east of this lease, the surface is occupied by granite. The continuation of the lead cannot be followed as it has been removed by denudation from the valley of the present Ringarooma River.

There is room for prospecting and tracing the lead in a south westerly direction from the south western part of the lease.

In the consolidated lease there is a length of 20 chains of lead between the workings. There is probably a further 20 or 30 chains existing in the south western part. If the prospecting on the extended prospecting area is successful, a further length of lead will be added to the above.

The lead is tin-bearing, being richest in the bottom layers. It would appear from statements made by those working it, that the bottom layers are very rich and that in some cases the upper layers would even pay for their removal.

#### Conclusions and Recommendations

From the above descriptions it is evident that a deep lead traverses the property. Its eastern limit is definitely established, but there are opportunities for a considerable extension in a south-westerly direction.

The lead is tin bearing and according to statements it would be very payable to work with a proper water supply.

The property is well worthy of investigation with the object of working it on a larger scale than it is at present being worked by the lessee.

The investigation should include the preliminary work of

- (a) Testing the worked faces
- (b) Testing the south-westerly extension
- (c) Considering the question of a supply of water from the Ringarooma river.

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