

NOTES ON THE LAFFER TIN MINE.

CONSOLIDATED LEASE , No. 10378/M 113 ac., 10381/M 8 ac.,
10380/M 7 ac., 10379/M, 5 ac., 90P/M 5 ac.

SITUATION AND ACCESS

This property is situated in the Weldborough mineral district and lies about a mile to the west of the township of Weldborough. The latter is on the main road to St. Helens and is eight miles from the terminous of the North Eastern Railway at Herrick.

TOPOGRAPHICAL FEATURES.

The area occupied by the leases is on the western slope of a high ridge or saddle forming the divide between Main Creek Valley to the west and the Weld River to the east, these being tributary streams to the Ringarooma River; the valley of the latter lies about 5 miles to the north.

To the south for some miles distant there is a considerable extent of elevated country which has a fairly high average rainfall.

The Laffer Mine is therefore favourably situated with respect to water supply, which can be conveyed by gravitation to the most elevated points on the leases, thus affording moderately high pressure for sluicing purposes.

The area is partly cleared of timber, light scrub covers the greater portion of it.

ECONOMIC GEOLOGY

The country rock is composed of tin granite which extends in all directions over a large expanse of country. It is traversed by a tabular tin-bearing greisen formation striking almost due north; the granite rock contiguous to this is much softened by weathering, rendering it to a condition whereby it can be treated by ordinary sluicing methods for the recovery of any tin it contains.

The greisen formation has an average width of about 20 feet and, where exposed along its course, has no marked variation in width. It has no apparent dip.

It is divided into a series of veins by parallel joint planes; the veins vary in thickness from two or three inches to a foot or more. Transverse joint planes both vertical and horizontal intersecting these parallel to the strike have the effect of dividing the whole formation into more or less rectangular pieces of stone of varying sizes. In places along it the respective greisen bands are separated by the unaltered granite rock, these latter sometimes representing in the aggregate a considerable proportion of the whole.

The joint planes often represent a division in the stone formed by a veinlet of tin oxide and when broken apart, which is a general condition of the formation, particles of tin are released and become associated with the soft portions of the country rock in the course of denudation.

It is owing to this action, in addition to the small quantity of tin disseminated through the granite, that makes it an economic sluicing proposition.

The greisen is fairly hard stone, the tin oxide occurs disseminated irregularly through it, occasionally enrichments in segregated form occur. The deepest point exposed is not more than 30 ft. below the surface.

The formation has been traced for a considerable distance through the leases in unbroken continuity.

MINING

The tin bearing formation is very favourably situated for the adoption of cheap mining methods.

The jointed condition of the stone would reduce the cost of breaking it out to a comparatively very low rate. Large quantities of it could be quarried out. The wall rock on either side being removed to a depth of 30 feet or more greatly simplifies the work of mining.

Some thousands of tons of stone have been removed during sluicing operations, the greater quantity of which is stacked on the workings and is available for treatment.

These heaps being derived from the main body of stone should be a fairly true representation of the average value of that particular part of the formation it was removed from during sluicing operations.

For a number of years past a steady output of tin has been derived from the treatment of the soft granite rock in the vicinity of the greisen formations by sluicing. A head pressure of 200 feet or more is available from the Company's water-race which is cut right on to the property; a comparatively short pipe line is needed for conveying the water from the race to the working faces.

The full extent of ground available for sluicing is not known, it being governed by the condition of the rock and the depth to which the softness extends. From general observation the area suitable for sluicing is large. The tin content is not known, the average quantity it contains should be equal to that already treated, which is said to have returned a satisfactory margin of profit during past years.

The following is a list of the assay results of a number of indicator samples taken by the writer. The samples were assayed at the Geological Survey Laboratory, Launceston:-

LOCALITY	Width in Feet	Per Cent Metallic Tin
1. South Face, greisen and granite	25	0.95
2. 20 ft. North of No. 1	20	0.28
3. 1 ch. " " " 2	20	0.13
4. 7 ch. " " " 3	15	0.3
5. West Dump from sluicing		0.15
6. Southern end from outcrop and loose stone		0.20

The above samples taken over various points along the course of the formation prove that the stone carries appreciable quantities of tin. That of the south face taken over a width of 25 feet is of well payable grade and further sampling on that part of the formation is warranted in order that some idea of the probable quantity of that grade of material is available.

It is only by systematic and close sampling of the formation at regularly spaced points across the outcrop that a close approximation of the average value of the stone can be made.

MILLING

The stone is of excellent character for crushing and concentration, no heavy associated mineral is present with the tin oxide to prevent a high grade concentrate being obtained.

At this stage of development it is unnecessary to refer to the type or capacity of a plant that would best serve the needs of the mine.

WATER-RIGHTS

The Company hold water-rights Nos. 2174/W, 2 sluiceways; 2172/W, 6 sluiceway heads; 2296/W, 10 sluiceway heads; also 3 dam sites aggregating 10 acres.

J. B. Scott
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