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MICROFILMED

COLES BAY - EXPLORATION LICENCE

D. R. Brown - 23rd September, '71

For GIPPSLAND MINERALS.

M1-498

Rep 5 L. 25/71 Coles Bay
by
D.R. Brown 23/9/71

INTRODUCTION

An application was made by Gippsland Minerals N.L. on the 23rd August, 1971, for an 80 square mile exploration licence covering the Coles Bay area. Following the application, one week was spent engaged in a literature search and brief reconnaissance of the area by the writer. All available literature was gathered from the Tasmanian Mines Department Library, Hobart. The area is considered to be a potential source of alluvial tin.

LOCATION AND ACCESS

The area is situated between the towns of Bicheno and Coles Bay, on Tasmania's central east coast.

The Tasman Highway traverses the northern portion of the exploration licence, and the Tasman Highway - Coles Bay road traverses the exploration licence from North to South.

LEASES

Gippsland Minerals has applied for an Exploration Licence of 80 square miles. Within this area there are 14 mining leases totalling 113 acres, one area of 360 acres exempt from the Mining Act, presumably for ground water and a special prospecting licence of 3.75 square miles held by Consolidated Eastern Tin Pty. Ltd.

GENERAL GEOLOGY

Briefly, the rock types of the area are as follows:

Silurian and Devonian slates, sandstones, etc.

Devonian granitic rocks - chiefly red and grey adamellites.

Permian: sandstones and associated coarse sediments.

Triassic: fine to coarse sediments with associated coal reserves.

Jurassic: Dolerite and similar extrusives, minor sediments

Recent Sediments.

The areas of interest, i.e. those containing alluvial deposits of tin, are recent sands and gravels derived from the granitic rocks. These sands and gravels either overly the granitic rocks or occur on the margins of granitic outcrop,

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 either as broad, ill-defined alluvial fans or as deposits within valleys and stream tiers. They may also occur as bench sand and associated deposits.

LITERATURE SEARCH

The following are summaries and direct quotes from previous reports relating to the area.

"Report on the Coalfields of Llandaff, the Denison and Douglas Rivers, on Deposits of Tin Ore on Schouten Main, and on Outcrops of Quartz near Buckland".

by W. H. Twelvetrees, 1901.

Twelvetrees describes a greisenised zone within the granitic rocks to the west of Bluestone Bay. The zone trends north-westerly, and contain cassiterite in thin greisen veins (up to 18 inches wide) . Although this area is within the S.P.L., it shows the origin of the tin. Twelvetrees also expresses the opinion that there are no large, economical tin lodes or greisens within the area, and that alluvial mining is the only economical proposition within the area.

Twelvetrees also describes dredging operations on Saltwater Creek, as does following literature.

"Preliminary report on tin prospects of the Coles Bay Area" by H. G. W. Keid 1944 - Typed Unpublished reports.

This report deals with the leases held on Saltwater Creek. Keid roughly describes the different tin-bearing horizons within the leases, quote:

"It was claimed by McRae (the leaseholder) that high grade ore exists to the grassroots. Samples taken from the upper levels of sand and wash were washed by prospect dish and the concentrates won were kept. These do not appear to be high grade in tin and definitely contain an appreciable proportion of ilmenite.

A second series of samples was taken from slightly greater depth and from the spoil dumps of old prospecting holes located there. The grade of concentrate was here much improved through still containing ilmenite.

A third series of samples, taken from as near bottom as possible in freshly dug holes, gave a concentrate of high

002 tin grade ore in sufficient quantity to cause the belief that profitable operations could be carried out if the grade was found to be persistent. McRae claimed a maximum depth of 28 feet for the tin bearing alluvium in the lower part of the lease.

In the vicinity of the mining leases, the white granite predominates and there is evidence that the tin is in association with minute quartz and greisen veins occurring in the granite. Though these veins strike in various directions, the more common line of strike is north-west, as do the few larger quartz veins observed in the locality."

Samples taken during Keid's visit were as follows:-

	<u>Est. Val.</u> <u>Crude Conc.</u> <u>oz. per c.y.</u>	<u>% Tin</u> <u>met.</u>	<u>Corrected</u> <u>Value 70%</u> <u>oz. per c.y.</u>
(1) Sample of surface material (3 prospect dishes)	13.3	9.8	1.8
(2) Samples from spoil dumps old prospect holes (2 dishes)	42.0	34.3	20.5
(3) From slope of ridge Ground 2 feet deep (1 dish)	30.45	60.9	26.5
(4) Samples of shallow ground at bottom eastern workings Middleton Creek	65.0	70.1	65.0
(5) Fresh dug holes. Sample from bottom and near bottom various positions (5 dishes)	84.0	70.2	84.0

Following Keid's visit 168 boreholes totalling 1,463 feet were drilled. The boring is described in a report titled: "Boring Reports at Coles Bay" by H.G.W. Keid, 1944!- Typed unpublished reports. *Results*

In this report Keid describes the boring and discusses the results. In describing the boring, Keid says - quote - "The Coles Bay area is composed essentially of granite and the wash encountered in boring was, in all cases, granitic in nature. The surface soil-cover varies to about 18 inches in depth to give place to a band of clay of variable thickness. Underlying the clay the wash occurs varying to a maximum of 5 feet in depth. In the southern portion of the area, there is little or no soil or clay and

the wash there is covered for the most part by an occurrence of sea sand. In most cases the bottom was decomposed granite, only an occasional bore bottoming on boulders".

Keid concluded that 6.8 acres are considered profitable to mine. The grade of ore, based on an assay result of 70% for the concentrates, ranges from 8.14 oz. to .9 oz. per cubic yard. The quantity of material available is 98,100 cubic yards with a tin oxide content of 23.5 tons.

"Report on Probable Tin Area - Coles Bay - Bicheno"
by H.G.W. Keid, 1954:- Typed unpublished reports.

"In the northern section of the area under review (within Gippsland Minerals N.L. exploration licence) a little mining has been carried out near Lilla Villa holding about three miles by road south from Bicheno. The workings are situated about a quarter of a mile to the east from the main highway. The depth of the ground treated was not more than two feet and the area treated was sufficient to yield not more than 100 cubic yards. The wash was treated by cradling and both the wash and the water were carried to the site of cradling. The wash, however, was high grade in tin, for reports state that from the area treated six bags of tin were won. The resultant heap of tailings would not contain more than 40 cubic yards and it is doubtful whether more than 60 yards were treated. A sample from the tailings heap, taken at random, was washed and the concentrate weighed. The result was equivalent to eight pounds per cubic yard.

"Near the 5 mile peg from Coles Bay on the western side of the road and on the edge of Moulting Lagoon some mining has been carried out. An old motor engine remains on the site and it appears that the engine was used for pumping water under pressure to the working face. The area treated is small despite the fact that local reports assent that boring by Johns Brothers proved deep high grade ground towards the Lagoon".

Near the junction of the Coles Bay Road with the main highway about eight miles from Bicheno, a road trends more or less easterly to the east coast at Coolum. On the Western section of this road from the Apsley River eastwards dolerites occur and the road encircles on its northern side a comparatively high Dolerite Hill. Leaving the Dolerites one

*Cowlands or
Butler Point!*

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traverses for upwards of a mile a series of sands and gravels, in places waterworn, on a gradually rising road until Granites are met near the coast. In a corresponding position and to the south of this area sandstones occur and there is a doubt as to whether this deposit has resulted from the weathering of the granites or is the faulted continuation of the more southern sandstones. In the more southern section of these gravels a prospect hole was sunk to prove the grade of ore there, at a depth of five feet bottom had not been met neither had any tin been revealed. It is considered, however, that should boring take place in the district this area should be tested."

From the above report it appears that there have been small, supposedly rich alluvial tin mines within the area. It has been reported that these mines closed down due to a lack of readily available water rather than a lack of tin ore.

RECONNAISSANCE FIELD TRIP

Most of the area can be traversed by a four wheel drive vehicle. However, unfortunately, during the writer's visit the area was in flood, and off road travel was difficult, to say the least. Numerous areas within the actual Coles Bay and Moulting Lagoon environs present the correct geological and physiographic conditions for the occurrence of alluvial tin deposits.

The workings on Saltwater Creek are small and run in a haphazard manner. However, they do prove the existance of alluvial tin within the area.

The Lilla Villa area could not be visited due to flooding of the Apsley River.

CONCLUSIONS

Alluvial tin (cassiterite) has previously been found in small quantities within the Coles Bay - Bicheno area. The geological and physiographic conditions favour the development of large alluvial deposits around Moulting Lagoon and elsewhere on and near the tin-bearing granite.

The next phase of exploration should be the preparation of a geological and physiographic map of the area from aerial photographs and field reconnaissance, to be followed by

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manual or mechanical scout boring of selected areas.



D. R. BROWN

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