1924/54-58

7
F4

THE BRISEIS CENTRAL TIN MINING CO. N.L.

(a) Location and Access. The Briseis Central Mine is situated on the South Bank of the Ringarooma River near the junction of Valley Creek between Branxholm and Derby. The leases held by the company at this locality are 8413 M of 20 acres, 7891 M of 25 acres, and 7760 M of 10 acres.

Two other leases - 8237 M of 5 acres and 8226 M of 5 acres are also held at the head of the Cascade River in the vicinity of the dam site.

The main road from Launceston to the North east and East coast districts passes through the property midway between Branxholm and Derby. The Launceston to Herrick railway passes immediately to the north of the mine which is connected by road to Branxholm station (3 miles), Telita, (3 miles) and Derby (3¼ miles).

(b) Previous Reports. No official reports contain descriptions of the mine although it is mentioned in the following:-

Montgomery, A. The Mineral Resources of Tasmania, 1894.

Twelvetrees, W. Preliminary Report on the Deep Zead or Infrn-bacaltic Stanniferous Gravels of the Ringarooma Valley near Derby, 1900.

(c) History. The discovery of tin ore at this locality was not made until several years after the majority on the north-east coast, as the first lease was not applied for until 1882. The property was held by several leases until taken over and worked by the Ringarooma Valley Tin M.C. N.L. This company was formed in 1885 and continued operations until 1892 at intervals and the mine became known as the Ringarooma Valley Mine. The method of working is stated to have been very inefficient and only a small amount of ground was treated. In 1904 the Briseis Extended Tin Mines Co., N.L. was formed to work the deposit and continued operations until 1910. A more modern plant was used and more material treated, but the lower portions of the drifts were not treated over part of the workings. The Briseis Central Tin Mining Co. N.L. was formed in 1918 and hold the property at the present time. No actual mining operations have been performed by this company but sufficient water rights to economically treat the deposits have been obtained, a long length of the main race constructed and preliminary steps taken to construct a large dam. In addition, a large amount of boring has been carried out to test the property.

Geology. The main road from Branxholm to Derby runs practically along the boundary of the granite to the south and the flats of the Ringarooma River to the north. The granite forms the hills which rise steeply to the south and which are part of the elevated granitic country around Weldborough. The flats of the Ringarooma River consist of a shallow depth of recent alluvium containing several feet of shingle. To the north of the river tertiary basalt overlies Lower Tertiary tin-bearing drifts. These latter deposits extend below the alluvial flats of the Ringarooma River and rest on a bedrock of granite.

re	Total depth	Depth of Water	Depth of ground treated	Volume Panned off	By tube displace ment	Tin ore obtained	From volume	From tube displace-ment.
1	15ft.	12	3 ft.	10.c.ft.	20c.ft.	Trace	Trace	Trace
2	28ft.	22	6½ ft.	.40c.ft.	40c.ft.	2.0gr.	A little tin	A little tin
3	20ft.	14	6 ft.	.30" "	40" "	2.5gr.	A little tin	A little tin
4	33ft.	26	7 ft.	.30" "	50" "	3.0gr.	A little tin	A little tin
5	28ft.	22	2 ft.	.10" "	10" "	2.0gr.	A little tin	A little tin
6	35ft.	22	13 ft.	.30" "	90" "	17.5gr.	.2	.1
7	65ft.	32	33 ft.	1.10"	2.20"	20.5gr.	A little tin	A little tin
8	71ft.	42	29 ft.	1.31"	1.67"	242.5gr.	.7	.6
9	77ft.	39	38½ ft.	1.91"	2.23"	618.0gr.	1.2	1.1
10	96ft.	41	43½ ft.	2.38"	2.51"	1002.0gr.	1.5	1.5
11	93ft.	38	47½ ft.	2.26"	2.76"	945.0gr.	1.5	1.5
12	91ft.	39	41 ft.	2.26"	2.36"	387.5gr.	.7	.6
13	76ft.	39	37 ft.	2.30"	3.14"	403.5gr.	.7	.7
14	60ft.	20	15 ft.	.70"	.86"	34.0gr.	.1	.1
15	85ft.	47	38ft.	1.85"	2.18"	425.0gr.	.9	.8
16	103ft.	50	53 ft.	3.00"	3.09"	736.0gr.	.9	.9
17	91ft.	48	43 ft.	1.72"	2.52"	69.0gr.	.2	.1
18	51ft.	33	18 ft.	.17"	1.06"	4.0gr.	Nil	Nil
19	101ft.	38	63 ft.	3.70"	3.64"	630.0gr.	.7	.7
20	104ft.	30	74 ft.	3.30"	4.26"	544.0gr.	.6	.5
21	107ft.	15	92 ft.	4.82"	5.33"	1087.0gr.	.9	.8
22	97ft.	14	83 ft.	4.14"	4.8 "	356.0gr.	.3	.3
23	105ft.	23	83 ft.	4.11"	4.79"	375.0gr.	.4	.3
	1632ft.	706	869 ft.	42.55"	50.88"	7903.0gr.	.7	.6

Ore-Deposit. The tin-bearing deposit which has been worked on this propertyconsists of Lower Tertiary stanniferous drifts. The south-eastern boundary is the main road at the locality where the valley Creek crosses the road. The deposit is 300 to 400 feet wide at the top and trends to the north-west below the river flats. It isshallow at its south-eastern end but deepens to over 100 feet to the north-west. These drifts have been referred to as being portion of the main lead (the Ringarooma) and also as a tributary (the Valley Creek lead) thereof. The geological structure as seen on the surface and revealed by the mining and boring operations proves the latter view to be the correct one. This lead should join the Ringarooma lead at a distance of approximately half a mile from its south-eastern extremity. The leases include a length of about 1750 feet of this lead, the remaining portion (about 690 feet) being situated under the river or on private property north of the river. The depth of the junction of the two leads should be approximately 200 feet below the present river level.

Production. It is generally stated that the Ringarooma Valley Co. produced about 400 tons of tin ore, but according to Montgomery in 1894 (about two years after work ceased) the production was 90.5 tons of tin ore.

The Official statistics show the production of the Briseis Extended Co. to be 428.7 tons obtained during the years 1905 to 1909.

The total production has, therefore been 519.2 tons of tin ore.

Value of the Drift. Approximate estimates of the content of cassiterite in the drifts can be arrived at by two methods. Firstly there is the results obtained by past working and secondly the results from the boring operations carried out. The first is necessarily very approximate as the amount of ground treated is not definitely known. The old workings cover an area of 15 acres and have a maximum depth of 50 feet, and the assumption of an average depth of 40 feet is rather high than otherwise. These figures give a total volume of 968,000 cubic yards. The total production from this amount has been 520 tons, so that the context of tin ore was 1.2 lbs. per cubic yard.

Several boring campaigns have been undertaken in order to test the drifts both in the old workings and to the north of them. The earliest of these was in 1900 and gave results up to 2.48 lbs. per cubic yard, the average being much lower than this. The upper portion of the ground in which these bores were put down, was treated by the Briseis Extended Co. at a later date. In 1920 a further campaign gave results in the old workings ranging from a little tin to 1½ lbs. per cubic yard, but the results were generally lower than those previously obtained. Another campaign was carried out by a different operator in 1921, the results of which are given below. Judging by the records this campaign was very thorough and efficient as far as it went and the results obtained are probably as reliable as boring results can be. The tin content is calculated on the total depth of ground which includes virgin drifts and any overlying tailings in the old workings. The content for virgin drifts will therefore be appreciably higher than the figure given. The figures show a tin content from a little tin up to 1.5 lbs. per cubic yard, the average of the total number being 0.7 lbs. by volume panned off and 0.6 by tube displacement.

F7

Bores 19 to 23 were sited along the gutter, bores 14 to 18 were sited across the gutter and represent a section of the lead, while bores 7 to 13 are in the centre of the gutter and Nos. 1 to 6 is shallow ground possible tailings at the head of the workings. The average value of the ground as shown by the section in Nos. 14 to 18 is 0.65 lbs. per cubic yard by volume parred off and 0.5 lbs. by tube displacement, which results are slightly lower than those quoted above.

These figures are lower than those deduced from the results of past workings. The past workings were carried out in the upper part of the drifts and it is generally found that the tin ore is more concentrated in the lower than the upper part of a lead, so that it would be reasonable to expect the lower drifts to contain more than 1.2 lbs. per cubic yard. That this fact is not reflected in the boring results does not necessarily mean that it is not the case. At the bottom of the drifts, boulders of granite, quartz etc. occur among which concentrations of tin ore are likely to exist, and boring under such conditions is not necessary accurate.

From the above review it is seen that approximate calculations of the results of past workings show a tin ore content of 1.2 lbs. per cubic yard, while boring of remaining portions of the drift indicate a content of 0.5 lbs. per cubic yard, though the latter might reasonably be anticipated to contain a higher content.

Quantity of Ground. As already recorded the property contains about 1750 feet of the Valley Creek lead. At the upper and shallower end 1450 feet have been removed to a depth of 40 feet and a width of between 300 and 400 feet. Below these workings, there exists virgin drifts 60 to 70 feet deep in the gutter and which should increase rapidly in depth to the north-west. To the north-east of these old workings there is about 300 feet of the lead, and the gutter should be about 150 feet below the surface. The quantity of drifts below the old workings should be approximately 600,000 cubic yards and in the north-western part of the lead 300,000 cubic yards. The total quantity is therefore approximately 900,000 cubic yards. It depends upon the course of the Valley Creek lead as to whether a further length of it is situated upon the property or not.

Water Supply and Power. The Company holds the following water rights:-

1883 W	for 34 sluice-heads.
2003 W	including 4 and 6 sluice-heads respectively and 3 dam sites of 1, 2 and 3 respectively.
1873 W	of 89 acres for dam site.

In all there is a total of 44 sluice heads and 95 acres of dam sites.

It is stated that the main dam site is 1300 feet above the mine near the head of the Cascade River. The intake of the race is much lower down the river and delivers the water at the mine with a pressure head of 500 feet.

Facilities for Working. The overburden on the drifts is the alluvium and shingle of the Ringarooma flats, which do not exceed 10 feet in depth. Below this overburden the drifts occur and are tin-bearing throughout so that the actual overburden is not more than 10 feet in thickness.

There is plenty of space available for dumping purposes on the flats of the Ringarooma River adjacent to the mine.

If the water schemes as proposed by the company were carried into effect there should be available sufficient water under suitable pressure to efficiently work the mine.

Conclusions. The Valley Creek lead, a tributary of the Ringarooma lead, crosses the property of the Briseis Central Co. The drifts in it are stanniferous and two attempts have been made in the past to work it although apparently not financially successful. In the first attempt, the material was moved by hand labour and trucked, each haulage line, pump etc. being operated by a separate engine, which operations could not be regarded as efficient. In the second attempt, a more modern and efficient method of dredging and sluicing was used, but the plant was only capable of treating the drifts to a depth of 40 feet. In the first case 90.5 tons and in the second 428.7 tons of tin ore were obtained indicating an approximate content of the drifts of 1.2 lbs. per cubic yard. The boring campaigns of the lower drifts and other parts of the lead have not given an average result as high as this (the best campaign gave an average of 0.5 to 0.7 lbs. per cubic yard) although it is generally found that the lower portions of leads have a higher value than the upper. Greater reliance must however be placed upon the results of actual working and it is probable that the content may be as high as 1.2 lbs. per cubic yard and it should certainly be between 0.5 and 1.2 lbs. per cubic yard, but the actual content can, of course only be proved by working.

There appears to be sufficient tin ore present and sufficient drifts available to justify working the deposit provided the mine can be equiped at low capital cost. The conditions as regards overburden and disposal of tailings are very favourable and should the water schemes be completed, there should be enough water at a suitable pressure to economically work the deposit. The success or otherwise of the mine will of course depend on the content of tin ore found in the Valley Creek lead and the cost of working.

Beyond the Valley Creek lead after it passes below the Ringarooma River the future is dependant upon the course of this lead and the content of tin ore in the Ringarooma lead after the junction of the former. No definite expression of opinion can be given upon this matter and it can only be decided by boring or by working should the latter prove successful along the Valley Creek lead.

P.B. Nye

GOVERNMENT GEOLOGIST.

Hobart, 16th September, 1924.