DEPARTMENTAL REPORT ON THE DEVONPORT MINE, BLACK BLUFF.

INTRODUCTION:

In connection with an application for assistance under the Aid to Mining Act, 1929, to construct a road approximately two miles long, from the end of the existing road to the Stormont Bismuth Mine, south of the Lea River, to the Devonport Mine, a brief examination was made of the latter on October 1st last to determine if the prospects were sufficiently encouraging to warrant the expenditure.

LOCATION AND ACCESS:

The mine is held under application for lease under the Mining Act, by G.D. Gardner, who has applied for 80 acres, consisting of ten of the original ten acre sections. It is situated approximately four miles west of Moina, about one mile from the Lea River, and is reached by means of a metalled road and pack-track from Nietta; the metalled road finished seven miles from Nietta at the timber area of F.H. Hines Pty. Ltd., from here the pack-track winds up through a gap in the Black Bluff Range, across the Lea watershed and down the southern slope of an eastern spur of the range, a distance of about five miles to the mine.

GEOLOGY:

The whole of the workings are contained in fine-grained conglomerates and grits of the West Coast Range conglomerate series; these appear in faulted relation to the Tubicolar series of sandstones on the north side of Devonport Creek. Generally, the strike is north with fairly high dip to the east.

The veins are not continuous but consist of a series of short lenses of quartz, formed in an anastomosing system of fractures or crush zone consistent with faulting in a particularly brittle host rock; the major faulting was most probably contemporaneous with the intrusions of Devonian porphyries, which occur some distance to the north of the mine.

The workings consist of an adit and some trenches, The adit has been driven approximately 135 feet in a south-westerly direction; at 100 feet from the portal, a quartz vein has been driven on, approximately, 60 feet in a south westerly direction. Generally it is irregular and ill-defined, and in the face, is only a few inches wide; it strikes approximately 340° and dips east. The dip is steeper than observed anywhere else.

Rough channel samples taken and assayed in Mines Department's Laboratory, Launceston, are indicative of the gold content.

Reg.No. 1059, Sample No. 4 (Taken across the face at south end of drive)

Gold Nil
Silver Nil

Reg. No. 1060, Sample No.5 (taken along the back of the drive about midway between the adit and face.)

Gold	0 oz.	6 dwt.	6 grs.
Silver	0 oz.	2 dwt.	5 grs.

Three trenches were examined; these are south of and at least 80 feet above the adit and approximately three chains apart.

The most southern one examined is approximately one chain long, bearing north 65° east; the average width is three feet while the depth would be five feet, although the vertical section exposed is nearer 20 feet. Two veins are exposed about 10 feet apart; the western vein is composed of a few inches of quartz, with silicification of a brecciated fine-grained conglomerate and quartzite, while the other one, particularly on the southern side of the cut is quite gossanous. The strike of the veins appears to conform to the general strike of the country while the dip is flatter than the dip of the bedding planes. Both are ill-defined and difficult to trace.

The following assays indicate the gold content:

Reg. No.1056 - Sample No.1 (south wall main cut)

Gold	0 oz.	12 dwt.	9 grs.
Silver	0 oz.	1 dwt.	23 grs.

Note: This sample contained large proportion of gossanous material.

Reg. No.1057 - Sample No. 2 (north wall main cut)

Gold	0 oz.	7 dwt.	7 grs.
Silver	0 oz.	1 dwt.	13 grs.

Another trench has been cut about 3 chains north of the main cut, but is very shallow and does not show the structure clearly; it exposes a gossanous formation with a little quartz.

An assay of material from this cut gave the following result:-

Gold	0 oz.	1 dwt.	0 grs.
	0 oz.	0 dwt.	18 grs.

Several other shallow cuts exist, but they were no sampled as the assumption of continuity of such a wide distribution of exposures was not consistent with the nature of the deposit.

In view of the gossanous nature of portion of the deposit, some extraction tests by amalgamation and cyanidation were conducted by the Government Chemist and Assayer, Launceston. The results of the tests are given herewith:-

Reg. No. 1056/39. "No.1 Sth. Wall, Main Cut"

Extraction Test by Amalgamation and Cyanidation

Assay values - Gold 12 dwt. 9 grs.
Silver 1 dwt. 23 grs./ton.

AMALGAMATION: The sample was ground to minus 80 mesh and amalgamated.

Amalgamated Tailing assay - Gold 15 grs./ton.
Indicated Extraction 11dwt. 18 grs. (94.9%)

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CYANIDATION of Amalgamated Tailings:

Agitation 20 hours
Lime added 10 lbs./ton.
Solid: Solution ratio 1:2.
Barren Solution 0.1% KCN.

Gold Extraction 9.5 grains (63.3%) or 3.2% calculated on original Head Assay.

Lime Consumption 7.9 lbs/ton.
KCN " 0.64 " "

Head Assay 15 grains.

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		Per Cent
Extraction by Amalgamation	11 dwt. 18 grs.	94.9
" " Cyanidation	0 " 9.5 "	3.2
	Total:	98.1

CONCLUSIONS:

Owing to the crushing of an extremely brittle host rock, resulting in a system of fractures rather than main fissures, the quartz is most erratically distributed in a series of short lenses rather than in veins in the strict sense.

That the high assay values, obtained previously, have been due to surface enrichment which cannot be expected to continue in depth, is indicated by sample No. 1 which contained a fair proportion of gossanous material and returned double the assay value compared with the other samples. The diminution of gold content in depth is substantiated by the assays of samples taken from the adit.

As the limited number of exposures represent only shallow cross-sections, widely separated, there is no justification for assuming that potential reserves are sufficient to warrant the erection of a battery and in view of the nature of the deposit, the prospects are not sufficiently encouraging to warrant further prospecting; therefore no recommendation for assistance can be made.

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20th October, 1939.