

TR5-26-29

STORMSDOWN MINE, ZEEHAN (R. FIELDHOUSE AND D. DUNKLEY)

by A. H. Blissett

INTRODUCTION

Lease 31M/54 covers the north-western part of Queen Hill and lies north-east of the old Zeehan Queen Mine. About 1938, the area was worked by Zeehan Tin Development N.L., but the complex nature of the structures on the lease does not appear to have been fully appreciated.

COUNTRY ROCK

The ore-bodies are contained in dark shales, siltstones and quartzites, with associated spilites. The age of the rocks is uncertain, but they are probably of Lower Cambrian, or Upper Precambrian age, and have been highly folded and sheared.

ORE-BODIES

Mineralisation is in the form of irregular masses and veins of pyrites containing very fine grained tin, sometimes associated with a fine quartz gangue. Stannite occurs on Queen Hill, but it is probable that much of the tin occurs in the form of fine cassiterite intimately associated with the pyrites. No mineralogical studies have been made to date.

STRUCTURAL CONTROLS

One of the chief factors is the intense folding of the laminated shales and siltstones, as illustrated in the south end of the opencut, where the pyritic orebody splits round the top of a small isoclinally folded pitching anticline. The axial plane trends 360° (magnetic) while the eastern limb dips at 80° to 65° (magnetic). In the north end of the opencut, the single orebody strikes to 335° with an easterly dip of 75° i.e. in a similar direction to the sediments. Thin veins of pyrite in this direction indicate that shearing occurred along the strike of the shales before mineralisation.

Again, the lode on No. 1 Adit, has been influenced by the strike of the shales and siltstone at the eastern end of the lode where the sediments strike to 325° (magnetic) with a north-easterly dip of 50° E.

A well marked shear plane was examined in the lode in No. 1 Adit. The shear has a strike of 260° and dips at 15° to the north, apparently shifting the upper part of the orebody which, however, is still present.

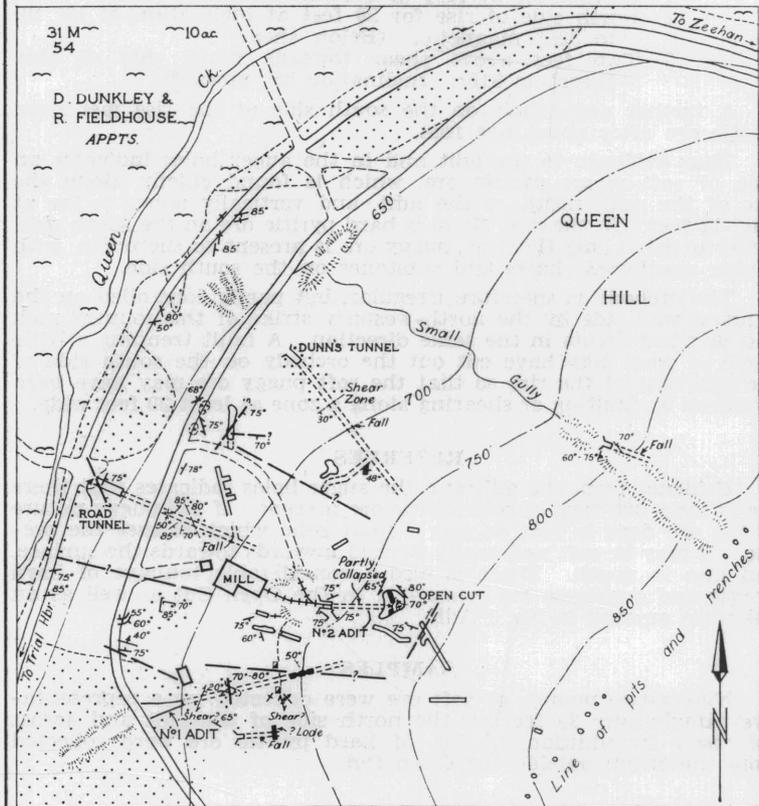
Although the contact between the spilite and the sediments may be sometimes sheared, most of the mineralisation appears to be within the sediments.

No. 1 ADIT

The lease holders propose to start work on soft puggy pyritic ore in No. 1 Adit. The orebody is first met approximately 145 feet along the adit from the portal, near the bottom of an old shaft, on the north side of the adit. The ore is pyritic and fairly hard for 10 feet, then becomes soft and puggy for approximately 29 feet.

GEOLOGICAL SKETCH MAP
STORMSDOWN MINE

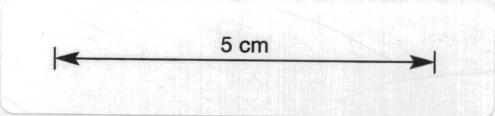
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QUATERNARY		
RECENT ALLUVIUM		
LOWER CAMBRIAN ?		
SHALES, QUARTZITES, SILTSTONES		
SPLITITE		
STRIKE & DIP OF BEDS 30°		TRENCHES
JOINTS SHOWING DIP 70°		ADITS
SHEARS SHOWING DIP 80°		FAULTS
FORMLINES		LODES
DUMPS, OLD TRAM EMBANKMENTS		TRAM
NOTE UNDERGROUND STRUCTURES INDICATED BY FINER PRINT		

A. H. BLISSETT
REG. GEOLOGIST
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FIGURE 5.



Ten feet east of the old shaft, a rise has been cut about 10 feet from the floor and about 12 feet long, in soft puggy ore. Auger holes have been drilled near the roof of the rise—

- (1) In roof for 20 feet at inclination of 80° N.W.
- (2) North side of rise for 20 feet at inclination of 10° up to 325° magnetic. (Below shear).
- (3) Two feet above shear towards north side of rise. Direction 310°. Inclination 35° upwards.

A further auger hole on the south side of the rise met hard pyritic ore after about one foot.

Thus evidence in the adit and in the auger holes indicates an area of soft puggy pyritic ore, which is found chiefly along the line of the adit, north of the adit, and vertically above it for at least 18 feet. In the rise, there is hard pyritic ore on the south side, while further along the adit, puggy ore is present to the north, with barren weathered shales and siltstones on the south side.

The orebody is therefore irregular, but partly controlled on the hanging wall side by the north-westerly strike of the country rock and by shear joints in the same direction. A fault trending a little north of west may have cut out the orebody on the south side of the adit east of the rise so that the soft puggy ore may have been produced by faulting or shearing along a zone at least 20 feet wide.

RESERVES

Evidence from the adit and the auger holes indicates that there are at least 300 tons of soft pyritic ore present. If the puggy nature of the ore does in fact occupy a fault zone which crosses the orebody, it may be soft and easily worked upwards towards the surface, and also in depth. There is also a considerable tonnage of hard pyritic and quartzose ore remaining in the Open Cut as well as an unknown amount in No. 1 Adit.

SAMPLES

Ninety-two pounds of soft ore were collected, as a representative sample over 39 feet on the north side of the adit and across the rise. In addition, 15 lbs. of hard pyritic ore were collected from the dump outside the Open Cut.

CONCLUSIONS

1. On Queen Hill, pyrite mineralisation with fine grained tin occurs in the form of irregular masses and veins, influenced by close folding in the country rocks and by shear or joint planes trending north-west, and dipping steeply to the north-east. There is some evidence of later faults or shears which have displaced the orebodies. The soft pyritic ore in No. 1 Adit may occupy a fault zone.

2. Surface outcrops are poorly exposed. At present there is insufficient evidence to decide if the orebody in the opencut is the same as that in No. 1 Adit. The area is highly faulted, and so it is difficult to correlate one lode with another.

3. At least 300 tons of soft puggy ore are present. Further exploration in No. 1 Adit may indicate a useful addition to reserves. In addition, there is a considerable tonnage of hard pyritic ore in the Open Cut and also in No. 1 Adit.

RECOMMENDATIONS

1. The nature of the soft ore, and the indicated reserves encourages development depending on the grade of ore revealed by the samples. It would be advisable to start operations on a relatively small scale until future development and exploration are carried out.

2. If operations are started, other adits might profitably be re-examined, in particularly Dunn's Tunnel, which is now blocked about 120 feet from the portal. In 1938, some driving was done on a lode beyond the fall, but there is no information about values.

Appendix

by W. St.C. Manson

It was assumed that the five bags totalling 92 lbs. of soft puggy ore was one sample and the assays have thus been undertaken on this as one sample, and the one bag of pyritic ore from the dump as the other sample.

Assays are as follows:—

	Per Cent Total Tin
Reg. No. 83.—Soft puggy ore	4.13
Reg. No. 84.—Pyritic ore	0.58

This ore is known to be particularly fine and difficult to concentrate, and recoveries by vanning on the puggy ore ranged from 30 to 50 per cent dependent upon grade of concentrate.

The pyritic sample was still more difficult to concentrate, and vanning recoveries ranged from 16 to 40 per cent.