

REPORT ON PYRITE DEPOSITS IN PENGUIN DISTRICT, TASMANIALOCATION
& ACCESS:

The area is situated $4\frac{1}{2}$ miles south of the Township of Penguin on the eastern foothills of Dial Range.

Access is gained from Penguin by way of a metalled road for five miles as far as Spinks farm. A pack track then continues south and passes through the area to the west of the deposits. On south side of Dial Creek a subsidiary track deviates easterly from the pack track and follows the Creek valley down to Leven River. A 3'6" gauge steel tram follows the left bank of the river down to the tidal waters, above the Port of Ulverstone.

HISTORY:

Mineral sections were originally acquired in 1898 covering areas in the locality of what afterwards became known as Keddie's Mine and Dial Mine. Several short adits were driven and shallow shafts sunk on the properties in the endeavour to prospect various pyritic bodies for copper and gold shoots. A little prospecting was also undertaken in 1907 and between the years 1922-25.

A report on the district, including descriptions of the above mines, was made by W.H. Twelvetrees, Government Geologist, in 1903 and published under the heading "Report on the Dial Range and Some Other Mineral Districts on the North-West Coast of Tasmania.

At present time an area of 200 acres is held under Extended Prospecting Claim by A.T. Davies on behalf of Phosphate Co-operative Co. of Australia. This Company has carried out a limited amount of surface work on a pyritic lode at Keddie's Mine, and driven a short adit in an adjacent locality in prospecting for pyrite deposits.

TOPOGRAPHY:

Topographical features are represented by rugged foot hills of Dial Range rising steeply for approximately 300 feet from the West bank of Leven River.

Drainage is effected by means of Dial Creek in the North and Stanton Creek on South side of the area, both flowing easterly to join Leven River.

GEOLOGY:

The rocks in the vicinity of the mines consist of quartzites, quartz breccias and purple slates of Cambro-Ordovician age. The strata strike north and south and dip to the east at 50° to 60° . On the north-east side of the belt the sedimentary rocks are in contact with an intrusive mass of felspar porphyry and augite porphrite of Devonian age. Good exposures of the igneous rocks occur in tram cuttings along the bank of Leven River.

THE PYRITE
DEPOSITS:

Erratic bodies of iron pyrites are dispersed through the area in the form of replacements of Cambro-Ordovician quartzites, quartz breccias and slates. They occur at distances ranging from six to 30 chains from the intrusive boundary of the Devonian porphyries, and evidently represent deposits of the contact replacement type.

(a) KEDDIE'S MINE

Abandoned mineral section 9088/M, 8 acres.

The workings of this mine are located in the north-west angle of the section on the fall to Dial Creek, as shown on the accompanying plan.

A pyritic body outcrops on south side of the pack track near west boundary of the section where it is exposed to a limited extent by an open-cut (8 feet deep) over a width of 13 feet.

It consist principally of a partial replacement of quartzite and quartz breccia strata by fine grained pyrite. Vein-lets of pyrite also occur along minute joint planes. Oxidation has taken place near surface and extends at intervals down vettical planes to a depth of six feet. Defined walls are absent, and the deposit merges at the boundaries into unmineralised rock.

The samples taken across face of open-cut No. 1 on east side, and No. 2 on West Side, were assayed with the following results:-

Sample No.	Regd. No.	Width of Sample	Constituents			
			Gold	Silver	Sulphur	Copper
1	243	5'	Trace	21grs. per ton	24.5%	Nil
2	244	4' 7"	Trace	Trace	16.6%	Nil

At 20 feet to the north-west and 10 feet south-west of the open-cut, shallow workings, now partly caved, show pyrite and hydrated oxide of iron over a width of several feet. A bearing taken through the centre of these workings indicates that the lode strikes at approximately E 50° S.

From south bank of Dial Creek, at 86 feet below open cut, an adit driven south in quartzites intersected the pyrite body in a distance of 150 feet. Short drives were extended 20 feet south-east and 10 feet north-west along southern side of the lode. In the adit the latter varies in width from four to six feet and assumes similar characteristics to the exposure in open cut at surface.

On south side of the track, about three chains west of the mineral section a little pyrite is showing on the dump near collar of a collapsed shaft. This suggests the presence of a minor occurrence of pyrite in the vicinity.

(b) DIAL MINE:

Abandoned mineral section 8823/M, 40 acres.

Dial Mine is located 30 chains sout -south-east of Keddies Mine, where old workings occur in the eastern part of the section.

An old adit driven northerly from Stanton Creek is now collapsed at entrance and inaccessible, as also is a shaft immediately south of the caved ground. From the shaft west to the creek a cutting in feruginous quartzite 15 feet in height, shows little pyrite at intervals over a distance of 15 feet.

Twelvetrees (see Report in 1901) reported that the adit was driven from the creek for about 70 feet on a lode formation consisting of fractured rock, the fragments of which were replaced by and the interstices filled with pyrite. Some copper pyrites, gold and silver is associated with the pyrite. The ore body was passed beyond a shaft a short distance in from portal. The shaft was sunk to a depth of 13 feet below adit level, where the lode was exposed over 6 or 7 feet of loosely aggregated pyrite. Results of a sample taken by Twelvetrees showed Copper 1.6%, Silver 15 dwt. per ton, and a trace of gold.

About two chains farther south another adit was driven for approximately 170 feet from a small east flowing branch creek in a direction slightly east of south. On west side of adit at a few feet from portal a winze is showing which is said to have been sunk to a depth of 18 feet on copper ore. Past the winze on the same side pyrite occurs in an irregular manner as a replacement of weathered quartzites and slates over a width of about two feet. Pyrite is also visible along the greater length of this adit, but no continuous body appears to exist. The adit is now inaccessible towards the face. Twelvetrees reports the existence of a west cross-cut which proved the pyrite belt at that point to be about 30 inches wide.

On the hill about 4 chains south of this adit and 200 feet higher a gossan outcrop is exposed over a length of 30 feet and width of about 10 feet. The outcrop consists of limonitic quartzite standing several feet above the general level of the surface. Several cuts have been put in on the eastern fall which only reveal broken limonite and quartzite. The southern adit was apparently sited to test a possible sulphide zone below the above occurrence, but was not extended for the full distance.

(c) REVELL'S MINE:

Abandoned Mineral Section 8376/M, 40 acres.

This mine is situated 30 chains west of Keddie's Mine near south boundary of the section. The rocks in the vicinity consist of purple slates, quartzites and quartz-breccias. An adit driven on a bearing of 135° is reported to be 70 feet in length. This is now inaccessible, but the tip at entrance shows massive fine grained pyrite associated with quartz contained in pieces of quartzite and quartz breccia. No lode outcrops are visible in the vicinity.

(d) DAVIES ADIT:

While prospecting for pyrite deposits in 1939, A.T. Davies supervised the driving of an adit from the west bank of Leven River at approximately 1/4 mile south-east of Dial Creek mouth. This was driven on a bearing of 240° for 63 feet in solid felspar porphyry. The only mineralisation revealed consists of several minute pyrite veins disposed along the joint planes of the rock.

CONCLUSIONS:

Several sporadic deposits of pyrite occur in the Penguin district in the form of contact replacement bodies. The pyrite is present as irregular replacement of quartzites and quartz-breccias and boundaries of mineralisation are gradational with the rocks intruded. There appears to be no continuity between the different occurrences, and considered solely from the view point of pyrite ore bodies the deposits as disclosed on the area are too small and erratic for economic exploitation.

It is doubtful whether more important bodies exist in the locality since deposits of the contact replacement type are recognised as being highly irregular in form and distribution.

Pyritic deposits are noted for surface indications in the form of conspicuous oxidised cappings and small exposures of this description occur in the vicinity of the workings described. However, the area has been prospected to a considerable extent in the past, and if large deposits had existed it is reasonable to conclude that they would have been located.

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HOBART.

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