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REPORT ON THE SURFACE GEOLOGICAL

MAPPING OF LEASE 109 M/67

TASMANIA

(Consolidated lease)

by

MICROFILMED

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JANUARY, 1970.

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1. ABSTRACT

This is a brief report covering the results of the geological mapping over lease 109 M/67, an area of approximately 320 acres, situated in the Gipps Creek area.

The mapping program commenced on the 1st December, 1969 and concluded on 21st January, 1970.

2. PURPOSE

1) To obtain a detailed geological map over lease 109 M/67. using a scale of 1" : 100'.

2) Conduct a radiometric survey over the mapped area.

3. INTRODUCTION

The lease was mapped along North-South traverse lines at 200' intervals. The first (OW) commenced on the south-east corner of the lease and extended north for 3600'. Each additional traverse line was designated 2W, 4W, 6W,.....36W.

Record of the geology was taken at 100' intervals along the N-S traverse lines, using a chain and prismatic compass.

Outcrop locations and past workings were plotted from observations noted in the field.

All bearings and dips were taken by a Brunton Compass, and were adjusted to refer to true north.

3.1 ACCESS

Access to the lease was obtained via the Gipps Creek Road which joins the Avoca - Storeys Creek Road, six miles South of Storeys Creek. The south-east corner of the lease is approximately 2.1 miles from the Avoca - Storeys Creek Road along the Gipps Creek Road.

3.2 LEASE TERMS AND OPTION AGREEMENTS

See Memorandum of Agreement made 1st December, 1969 between D.E.M. Hayes and H.H. Sutcliffe and Aberfoyle Limited of Rossarden.

3.3 PAST MINING HISTORY

The lease is extensively covered with trenches, pits and shafts, all of which have been plotted onto the map. The two main mines in the lease are the Great Republic Mine and the North Republic Mine. Details of these mines and others, can be found in Technical Reports of the Tasmanian Mines Dept., and Bulletin 46 of the Tasmania Mines Dept. (see References)

4. GEOLOGY

4.1 DEVONIAN GRANITES { Fig. 1(a), 1(b), 2(a), 2(b) }

The granites are mainly confined to the western side of the Gipps Creek Fault, except for an area in the north-east where the Permian sediments have been eroded off.

Jointing in the granite outcrops is common with Strikes ranging from 220°-250° and 320°- 350°. Most of the dips range from 70°- 90°.

Basically, there are four main types of granite over the lease.

4.1.1 Porphyritic Granite - this is usually recognized by its extremely large felspar Crystals randomly orientated in a medium grained groundmass.

4.1.2 Biotite granite or porphyritic granite with biotite - these granites have a large amount of biotite present in their structures. Porphyritic granite with biotite also commonly has large felspar crystals present also. Hence the name, 'porphyritic granite' with biotite.

4.1.3 Tourmaline granite or porphyritic granite with tourmaline - tourmaline granite consists of small, slender tourmaline crystals randomly orientated in the groundmass. The porphyritic granite with tourmaline consists of a granular granite, often containing large felspar phenocrysts, with tourmaline randomly orientated throughout the groundmass.

4.1.4 Pinitic granite - this is a fairly granular granite with the characteristic mineral pinite present in the rock structure. It was mainly found with dumps associated with old workings.

4.1.5 Porphyry - The porphyry is a fairly light green to grey coloured rock with small felspar crystals randomly orientated in a medium to fine grained ground-mass.

4.2 PERMIAN

Permian sediments were deposited on the down-warped side (eastern) of the Gipps Creek Fault. They consist of conglomerates with occasional mudstones and sandstones.

4.3 RECENT

Recent alluvium has accumulated in the northern sector of the lease with swampy marshes occupying a low central region along the fault.

4.4 MINERALISATION

Observation indicates that mineralisation in the form of tin and wolfram does occur in the area, as shown by the extensive mine workings and diggings throughout the lease. The trenches strike between 220° - 250° and 320° - 350° . It is interesting to note that these strikes correspond to the strikes found in the granite jointing. However no mineralised outcrops were found on the lease, as the area has been thoroughly prospected over the last century.

4.5 FAULTING

The Gipps Creek Fault is the only fault crossing the lease. It has a strike of approximately 320° and divides the lease roughly in half. Breccia with iron staining and quartz veining is common along the length of the fault covering the lease.

The faulting occurred in Post-Devonian and Pre-Permian times, uplifting the western side with respect to the east.

In the south-eastern part of the lease, the fault clearly divides the sediments from the granite.

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5. SCINTILLOMETER SURVEY { Figs. 3(a), 3(b) }

A geophysical survey was carried out over the lease using a Scintillometer. Readings were taken at 50' intervals along the N-S traverse lines 400' apart i.e. along traverse lines OW, 4W, 8W,.....36W.

Normal background reading for the sediments ranged from 20 - 30 cps, while for the granites, the background reading varied. In the granites east of the fault, they ranged from 30-40 cps, while for those west of the fault the readings were from 50-70 cps.

This difference in readings between the two granites was probably due to the fact that the granites east of the fault were partially covered with sediments, which have a blanketing effect on the scintillometer readings, while those west of the fault have only a light soil cover in places where they don't outcrop.

The scintillometer readings over the whole lease were plotted and a contour map was produced. A pattern developed indicating that the readings over the area surrounding the Great Republic Mine were relatively higher than any other area on the lease. This area was subsequently resurveyed with the scintillometer using N-S traverse lines 100' apart.

High readings were found in two positions. The clump on a mine shaft of the Great Republic Mine (19W 950N) gave a reading up to 580 cps. Further investigation found that ? torbernite was present in an altered pinitic granite. This granite had considerable talc and chlorite present.

A similar rock, also containing ? torbernite, was found in a pit (15W 1140N). This granite gave a reading up to 680 cps.

The contour pattern also indicated that the granite outcrops containing tourmaline gave a relatively lower reading than the granites with no tourmaline

6. CONCLUSION

Although no mineralisation was found outcropping, the extensive mine workings and mining history indicates that considerable amounts of tin and wolfram were extracted

from the area.

7. RECOMMENDATIONS

1) The Mining history of the area indicates mineralisation does occur at depth. Whether or not the mineralisation is of economic value is beyond the scope of this report. We can only say that if further investigation is warranted, it could take the form of a diamond drilling program centred around the area between the North Republic Mine and the Great Republic Mine in order to test continuity of tin/WO₃ mineralization between the two areas.

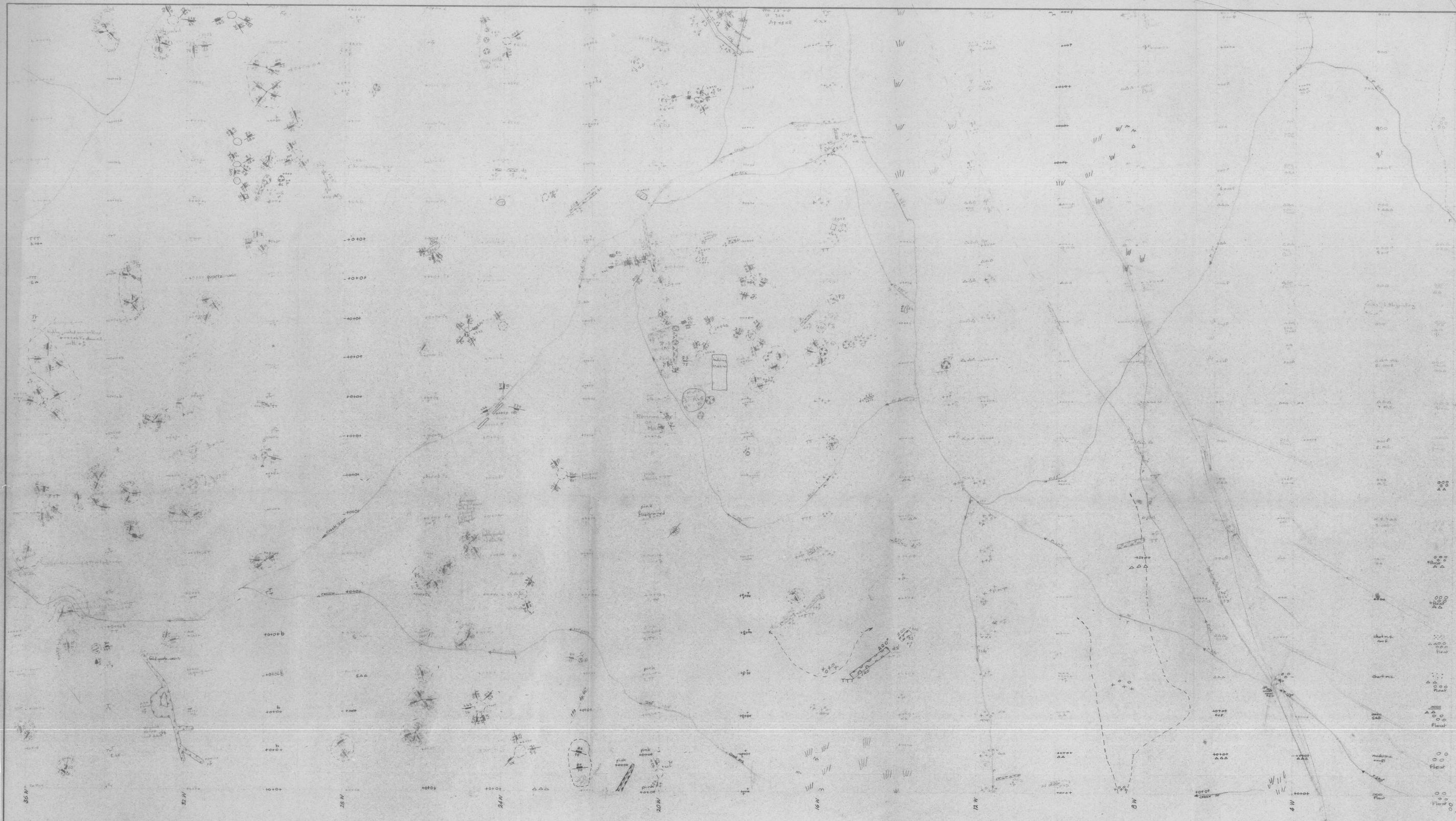
2) Test at depth the old workings at the Great Republic Mine for concentrations of radioactive materials and cassiterite.

8. REFERENCES

- | | |
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21/1/1970



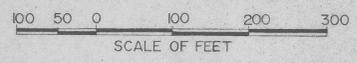
GIPPS CREEK PROSPECT
GEOLOGICAL PLAN

FACT

Fig 1 b

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SHEET 1
SHEET 2 ✓



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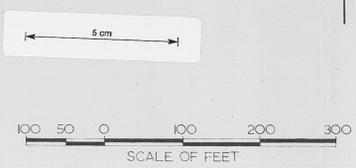
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B

A



LEGEND	
DEVONIAN	
porphyritic granite with biotite	inferred rock boundary
biotite granite +o+o+b	mine shaft
porphyritic granite with tourmaline	pit (depth 6 ft)
tourmaline granite +o+o+T TTT	trench
porphyritic granite +o+o+	outcrop
feldspar porphyry xxx	semi-outcrop
PERMIAN	
conglomerate & mudstone oooo	fault
RECENT	
alluvium ~ ~ ~	inferred fault
swamp * * *	road
creek	joints — vertical joints
	quartz vein



GIPPS CREEK PROSPECT

GEOLOGICAL PLAN

INTERPRETATION

Fig. 2a

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SHEET 1

SHEET 2

GEOLOGY

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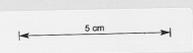
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LEGEND	
DEVONIAN	inferred rock boundary
porphyritic granite with biotite	mine shaft
biotite granite	pit (depth 6 ft)
porphyritic granite with tourmaline	trench
tourmaline granite	outcrop
porphyritic granite	semi-outcrop
plutonic granite	fault
feldspar porphyry	inferred fault
PERMIAN	road
conglomerate & mudstone	joint
RECENT	vertical joint
alluvium	quartz vein
swamp	
creek	
H.J.	P.J.



GIPPS CREEK PROSPECT
 GEOLOGICAL PLAN
 INTERPRETATION

Fig. 2 b

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SHEET 1
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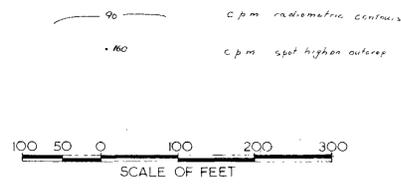
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GIPPS CREEK PROSPECT
SCINTILLOMETER SURVEY

Fig. 3 a



SHEET 1
SHEET 2

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APPROVED				
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