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# EM AND MAGNETIC SURVEY

# UPPER FORTH RIVER. EL15/65

# TASMANIA

BY

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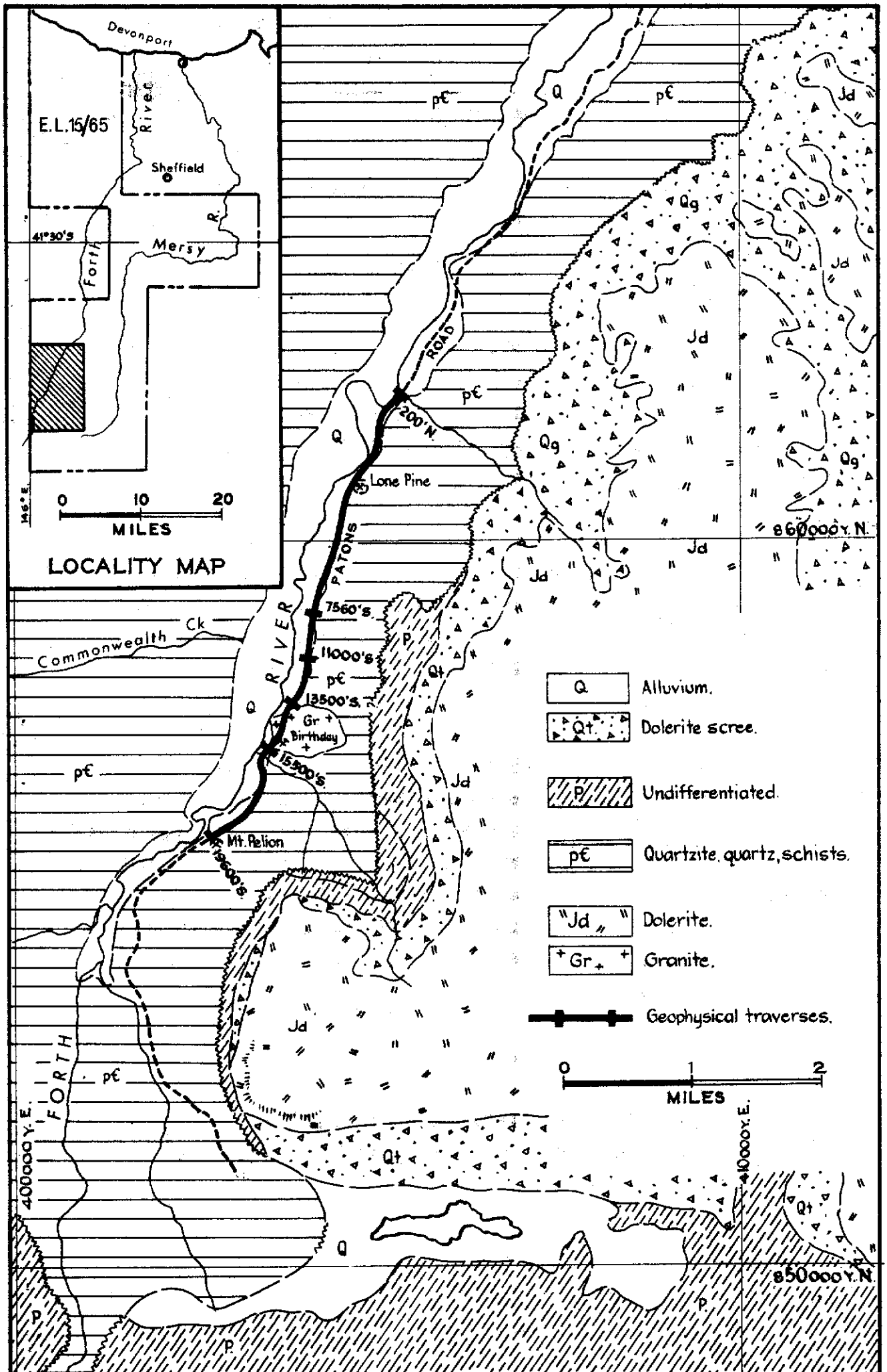


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| Centre Melbourne | THE BROKEN HILL PROPRIETARY CO. LTD. | Project No. T.Sh.10 |
| Date 2·7·68 | E.L.13/65 SHEFFIELD, TASMANIA. LOCATION OF GEOPHYSICAL TRAVERSES UPPER FORTH RIVER AREA | Drawing No. A4/1064 |

5 cm

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## INTRODUCTION

The area investigated is in the southwest corner of EL15/65 and is situated on Paton Road near the Forth River, fifteen miles south of the Lemonthyme power station as shown on Fig 1.

Mineralisation in the area consists of wolfram and tin which was mined by open cut from quartz veins associated with a granite intrusion. The geology for Fig 1 is taken from the Du Cane one mile sheet and includes Precambrian quartzite intruded by Devonian granite.

The aim of the survey was to determine, by EM and magnetic methods, any extension of the known mineralisation. An unfortunate feature of the survey which limits its usefulness was the short length of the traverses which were restricted by the Forth River on the west and the steep valley slopes on the east.

The survey, including five days travelling and road clearing was made by P. Hillsdon assisted by W. Cherrie and P. Crawley from 6th May to 14th May. Traverses were made along four miles of Paton Road which runs approximately northsouth and along six cross traverses of total length 0.72 miles running eastwest. Station spacing was 100 feet. The traverses were levelled by J. Williamson. The location of traverses are shown on Fig 1.

The instruments used were:

Jalander magnetometer serial No.7300
ABEM EM Gun with 100 feet staff separation.

## RESULTS

The magnetic and EM profiles are plotted on Fig 2. On the EM profiles there are only minor variations which do not indicate mineralised zones. There are minor anomalies at the granite-quartzite contacts at 13600S and 15200S on the Patons Road traverse. The absence of minor irregularities, which are indicative of natural noise, on the profiles along the cross traverses suggested a possible fault in the EM Gun. However, no malfunction was found.

There is little variation in the magnetic profiles since the quartzite and granite contain only minor amounts of magnetite. The granite contains less magnetite than the quartzite and also the magnetite is more uniformly distributed through the granite than through the quartzite. This is illustrated by the magnetic profile over the Birthday Granite (13600S to 15200S). It is not as well illustrated at the Lone Pine Granite which outcrops for 100 feet at 5000S.

From Oakleigh Creek to the south, the increasing magnetic gradient is caused by a change in basement magnetism rather than a change in the magnetic properties of the quartzite.

Also the more uniform character of the profile between 18,400S and 20,000S suggests a granite body at a shallow depth beneath the quartzite. This interpretation is supported by the presence of quartz veining at 19600S.

An anomaly of 200 gammas was recorded at the abandoned open cut at 19,600S. No comparable anomaly was recorded on the other traverses.

The aeromagnetic anomaly 127 from a survey by AMEG in 1965 situated east of 4,000S between Lone Pine Granite and Birthday Granite was not located due to the rugged terrain and dense timber.

## CONCLUSIONS AND RECOMMENDATION

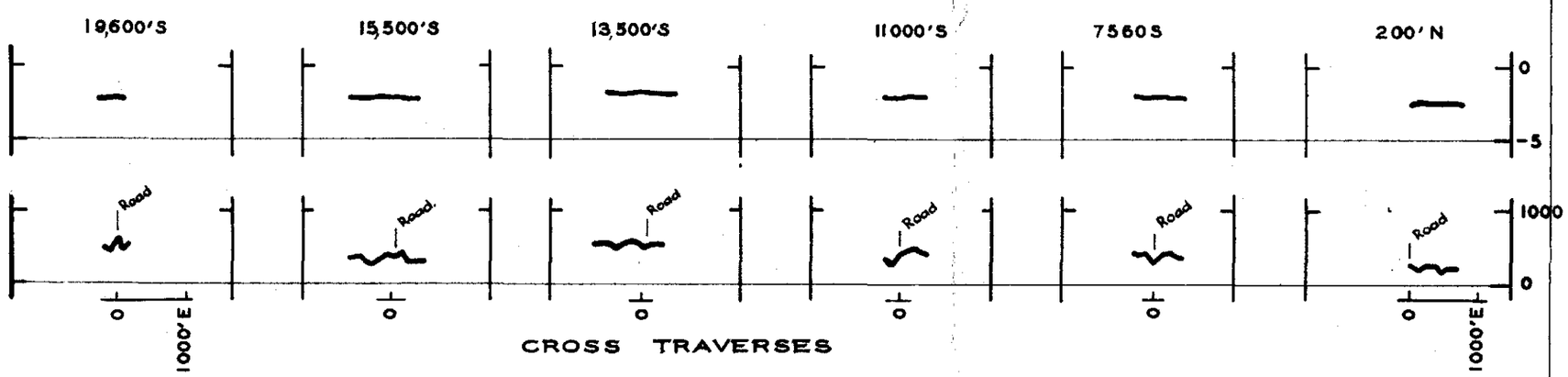
The magnetic and EM results did not show any extensions to the known mineralisation in the Upper Forth River.

The magnetic results could be explained by the magnetic properties of the rock types in the area.

The EM profiles did not show any major conducting zones indicating mineralisation. The minor variations are caused by granite-quartzite contacts and surface irregularities.

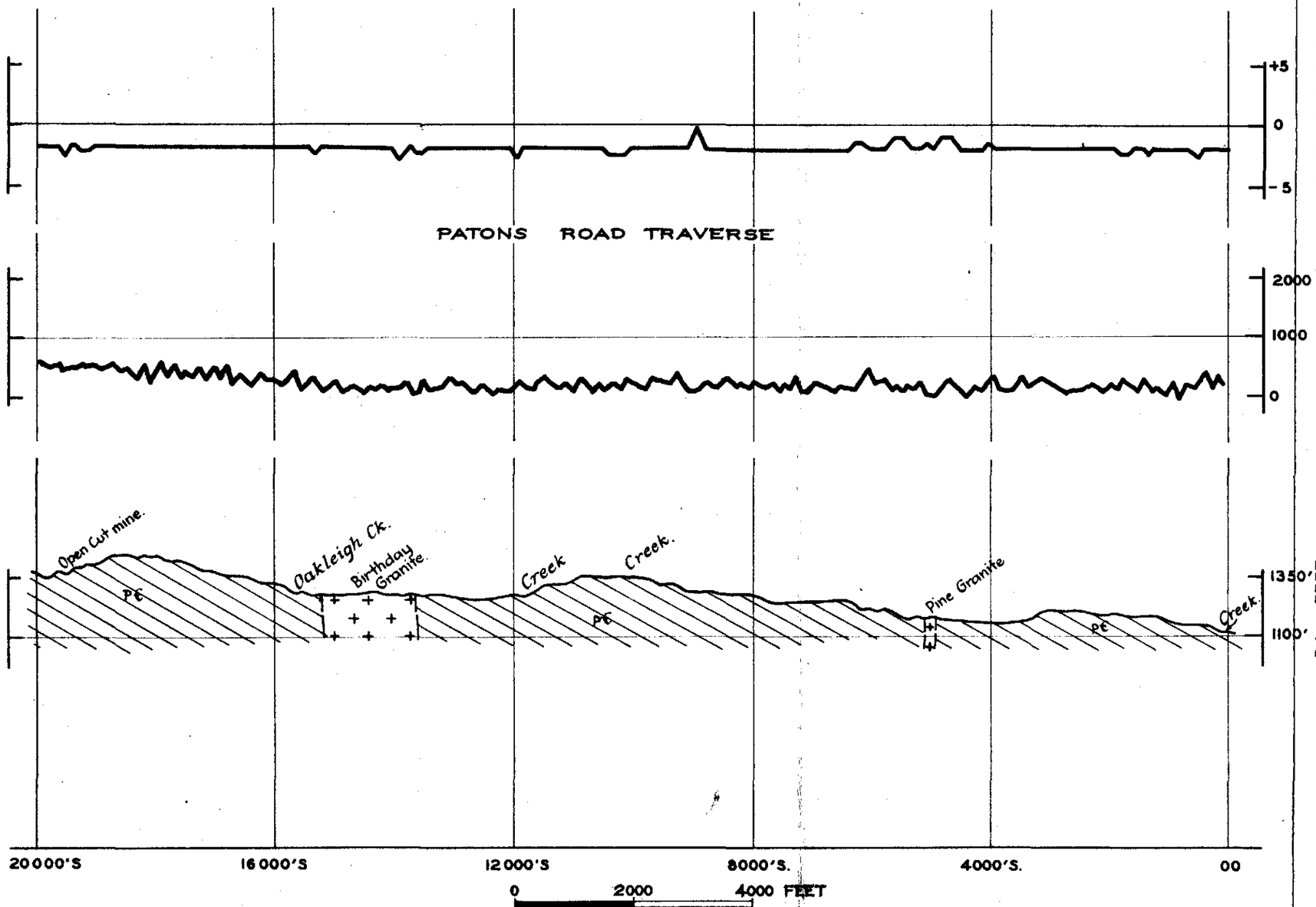
No further geophysical work is recommended in the area.

115007 **FIG.2**




E.M. PROFILES

MAGNETIC PROFILES




E.M. PROFILE

MAGNETIC PROFILE

5 cm

GEOLOGICAL SECTION

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E.L.13 65 SHEFFIELD – TASMANIA
MAGNETIC AND E.M. PROFILES
UPPER FORTH RIVER AREA

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|---|---|---|
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| Date: 2·7·68 | Drawing No: A3-1048 | Project No: T.Sh.11 |
| Drawn: G.B. | | |