

1955/24

B

C.3

B

COMMONWEALTH OF AUSTRALIA  
DEPARTMENT OF NATIONAL DEVELOPMENT  
BUREAU OF MINERAL RESOURCES,  
GEOLOGY AND GEOPHYSICS

RECORDS 1955, N<sup>o</sup>. 24

MAGNETIC SURVEY OF THE  
HAMPSHIRE  
MAGNETITE DEPOSIT,  
TASMANIA

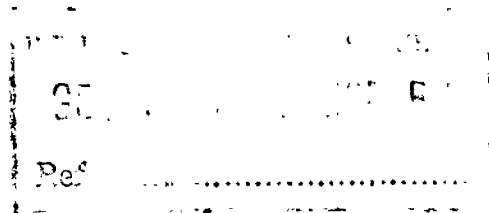


by

K. H. TATE

1955/24

B



COMMONWEALTH OF AUSTRALIA  
DEPARTMENT OF NATIONAL DEVELOPMENT  
BUREAU OF MINERAL RESOURCES,  
GEOLOGY AND GEOPHYSICS

RECORDS 1955, N<sup>o</sup>. 24

MAGNETIC SURVEY OF THE  
HAMPSHIRE  
MAGNETITE DEPOSIT,  
TASMANIA

*by*

*K. H. TATE*

## C O N T E N T S

	<u>Page</u>
ABSTRACT	(iii)
1. INTRODUCTION	1
2. FIELD WORK	1
3. DISCUSSION OF RESULTS	1
4. CONCLUSIONS	1
5. REFERENCE	2

## ILLUSTRATIONS

- Plate 1.        Locality Map and Geophysical Traverses.  
Plate 2.        Vertical Magnetic Force Profiles.
-

### ABSTRACT

At the request of the Tasmanian Department of Mines a test magnetic survey was made on the Hampshire iron-ore leases of Mineral Suppliers Ltd. Two short magnetic traverses resulted in the recording of large magnetic anomalies associated with the ore deposit. The full extent of the deposit was not determined. It is considered that a more detailed magnetic survey would define the boundaries of the deposit.

## 1. INTRODUCTION

The Hampshire magnetite deposit is about six miles south-east of the village of Hampshire, Tasmania, which is about 20 miles south-west of Burnie on the Burnie-Zeehan railway line (Inset, Plate 1). Very little prospecting or development has been done on the deposit. A request was received by the Bureau of Mineral Resources from the Department of Mines, Tasmania, asking for a geophysical test survey to be made to determine the depth and extent of the deposit, and to ascertain whether more detailed geophysical work is warranted. A test magnetic survey was accordingly made in April, 1954, by K. H. Tate, a geophysicist of the Bureau, in the vicinity of an open-cut from which samples of magnetite had been recovered for testing (Hughes, 1952).

The magnetic survey was made along two traverses, 550 and 600 feet long, which had been prepared by the Department of Mines, Tasmania. The location of the traverses is shown in Plate 1, which is based on Surface Plan No. 1313-36, prepared by the Department of Mines, Tasmania.

The services of one field assistant were provided by Mineral Supplies Ltd., the company which owns the leases over the deposit.

## 2. FIELD WORK

Readings were taken at 25-foot intervals along each traverse, using a Watts Vertical Force Variometer (No. 57139) adjusted to a sensitivity of approximately 68 gammas per scale division. Auxiliary magnets, which had been previously calibrated, were used, where magnetic field changes were large. However, the magnetic intensity was beyond the range of the instrument at several places on traverse A. The results are shown on Plate 2 in the form of profiles along each traverse.

## 3. DISCUSSION OF RESULTS

The profiles are consistent with the presence of a deposit of highly magnetic material, which is generally polarised in a direction not greatly different from that of the earth's magnetic field. The information obtained is not sufficient to enable any estimate to be made of the vertical extent of the body, or its extension in a north-south direction. However, the results clearly show that similar bodies could be located with certainty by magnetic methods, even at great depth. It is likely that a more extensive survey would enable the extent and aspect of the present body to be determined with considerable accuracy.

The profiles extend across a small sedimentary roof pendant and on to the granite outcrop both east and west of the sediments. Over the granite the magnetic readings were fairly constant.

## 4. CONCLUSIONS

The measured magnetic effects are caused by a ferromagnetic body limited in extent in an east-west direction. The geophysical results confirm the view held by Hughes (geologist), that the deposit is composed of rich but small iron ore lenses. There may be other

small deposits near the one surveyed in this test. A detailed magnetic survey would provide the best and simplest means of discovering any other iron ore lenses that may exist in the vicinity and determining their size.

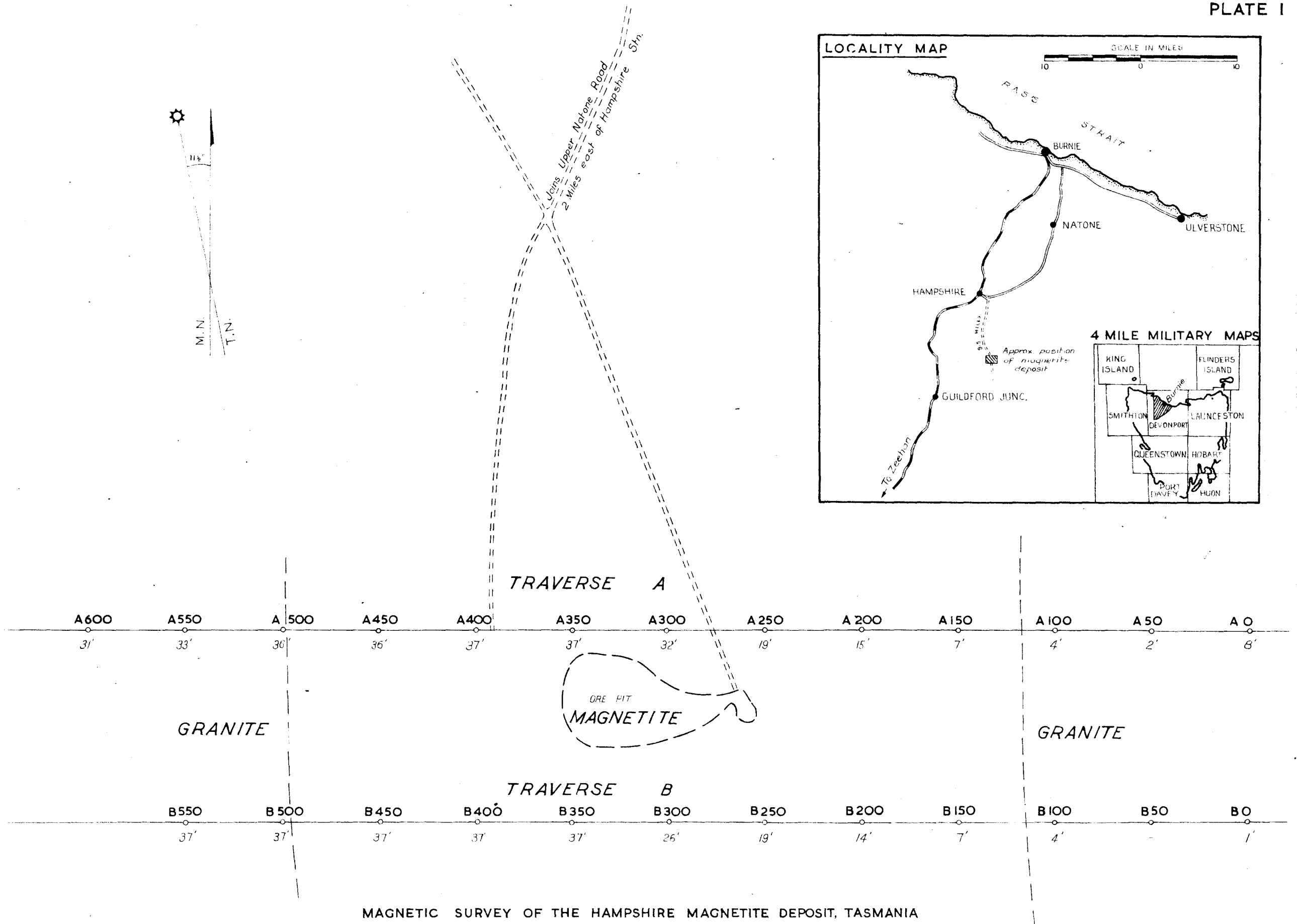
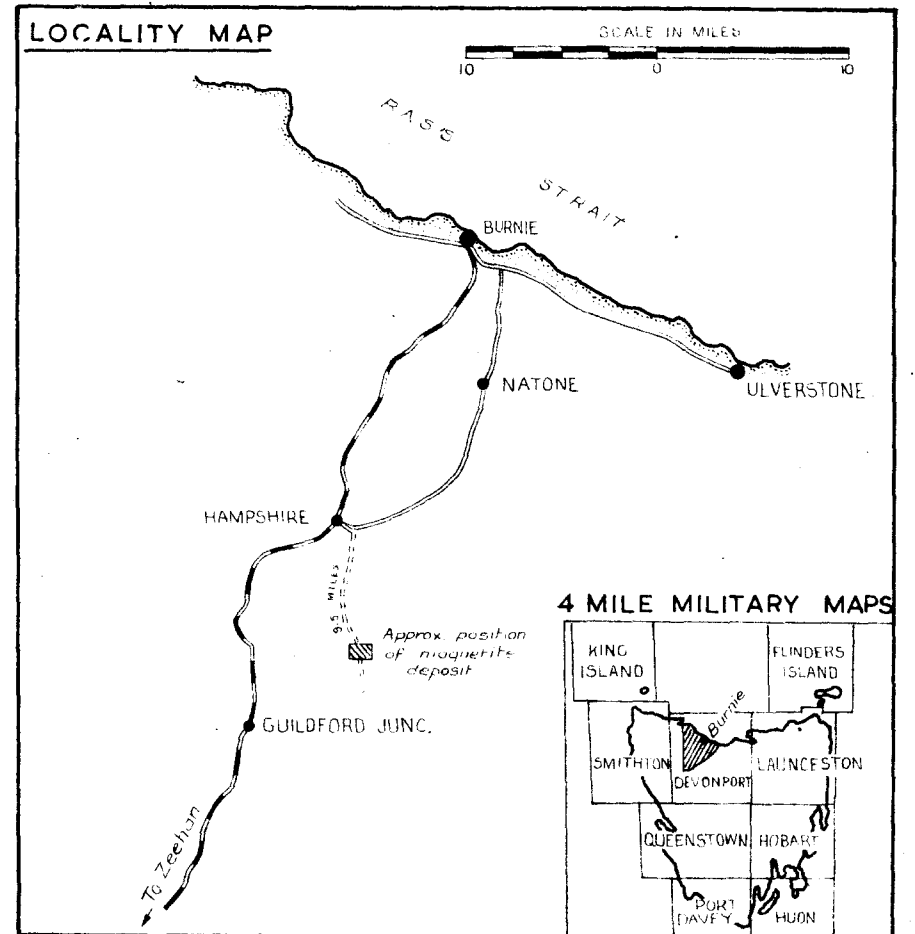
It is considered that further detailed magnetic surveys would be warranted if it is desired to prove the extent of the Hampshire deposit.

#### 5. REFERENCE

Hughes, T.D., 1952

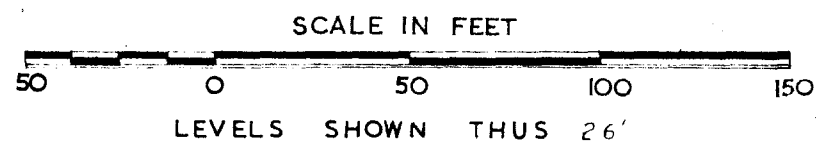
Iron Ore at Hampshire, Rep. Dept.  
of Mines, Tas.

Melbourne,  
May, 1955.

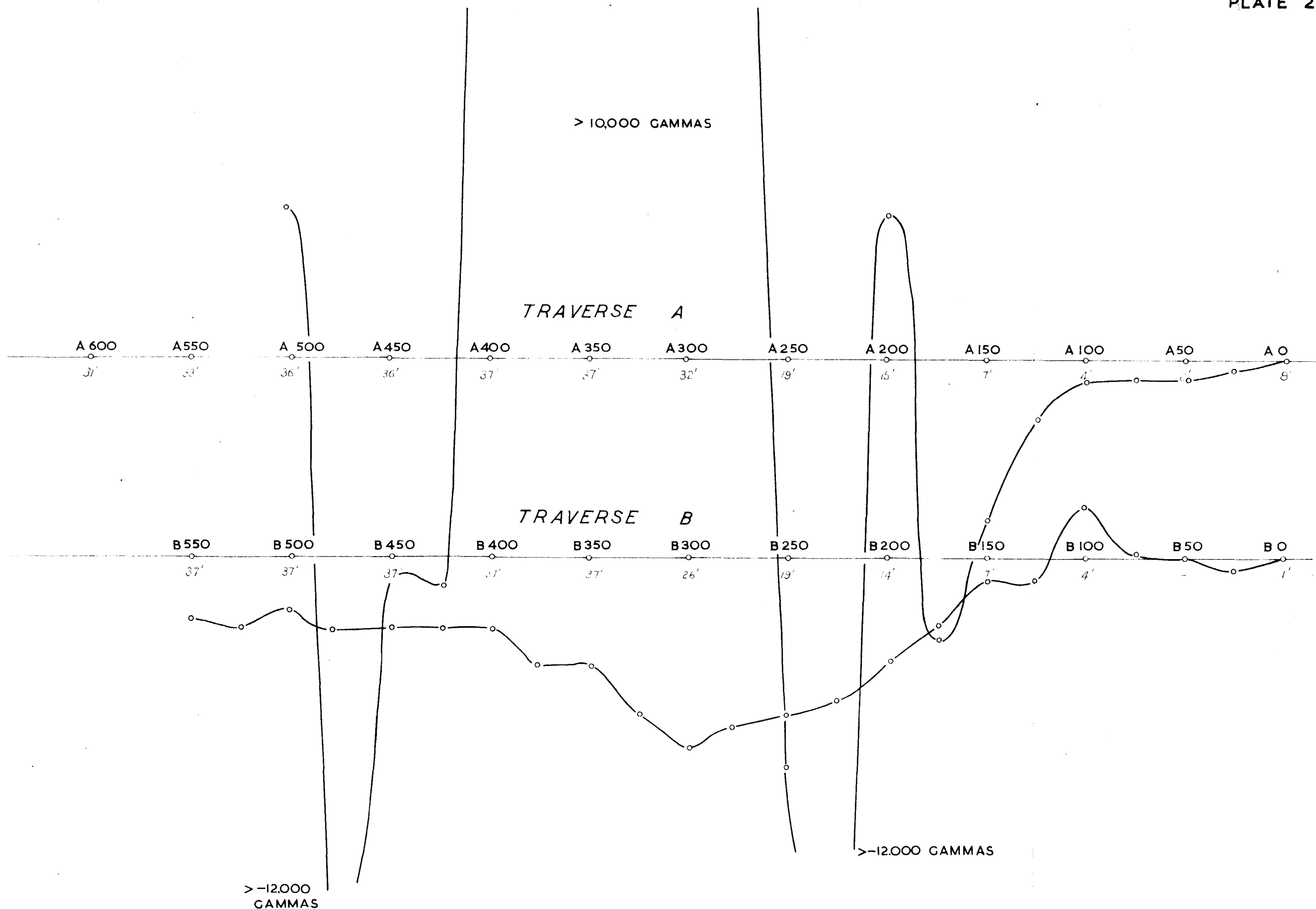


MAGNETIC SURVEY OF THE HAMPSHIRE MAGNETITE DEPOSIT, TASMANIA

GEOPHYSICAL TRAVERSES AND TOPOGRAPHY

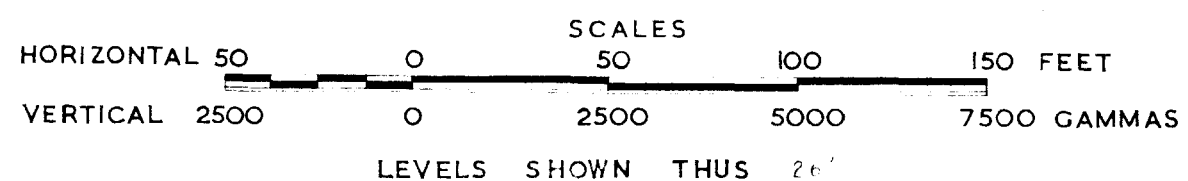


GEOPHYSICIST



MAGNETIC SURVEY OF THE HAMPSHIRE MAGNETITE DEPOSIT, TASMANIA

VERTICAL MAGNETIC FORCE PROFILES



GEOPHYSICIST