

COMMONWEALTH OF AUSTRALIA

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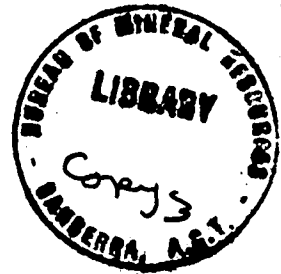
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DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

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RECORD No. 1962/97

BURRA AREA AIRBORNE MAGNETIC AND RADIOMETRIC SURVEY,
SOUTH AUSTRALIA 1960

by

R. Wells

The information contained in this report has been obtained by the Department of National Development, as part of the policy of the Commonwealth Government, to assist in the exploration and development of mineral resources. It may not be published in any form or used in a company prospectus or statement without the permission in writing of the Director, Bureau of Mineral Resources, Geology and Geophysics.

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Plate 1. Map showing survey area and magnetically
disturbed areas (G354-1-1)

SUMMARY

An airborne magnetic and radiometric survey of the Burra and part of the Whyalla 4-mile map areas, South Australia, was made in March 1960.

Survey operations and equipment are described.

Survey results were forwarded to the Department of Mines, South Australia, for reduction and compilation.

1. INTRODUCTION

The airborne magnetic and radiometric survey of the Burra and part of the Whyalla 4-mile map areas (Plate 1) was made at the request of the South Australian Department of Mines. The Bureau of Mineral Resources DC.3 aircraft VH-MIN, based at Whyalla, was used to survey the areas from 29th February to 22nd March 1960. Seventy lines were flown at one-mile intervals on an east-west heading. The lines extended from the eastern edge of the Burra 4-mile map area to Spencer Gulf. Twelve of them were further extended to the western shore of the Gulf. Fifteen tie lines on various headings were also flown (Plate 1). These traverses totalled 8260 miles. The survey was flown at a nominal height of 500 ft above ground level, and navigated visually along pre-determined flight lines drawn on aerial photographs.

Bureau personnel in the survey were R.M. Carter (Party Leader), R. Wells, K.J. Seers, D.F. Upton, F.G. Walker, and R. Jones.

2. EQUIPMENT

Changes in the intensity of the Earth's total magnetic field were continuously recorded by an MFS-4 fluxgate magnetometer at a sensitivity of 50 gammas/in. and displayed on a 'Speedomax' chart recorder.

Two records of radioactivity were obtained, one from a pair of crystal detector heads mounted inboard and the other from a plastic-phosphor detector towed approximately 300 ft below the aircraft. These two systems fed into identical ratemeters, the outputs of which were recorded on two Kelvin & Hughes chart recorders.

An 'Aeropath' 35-mm strip-camera was used to photograph the flight path. The aircraft's air position was recorded by an air position indicator coupled to a 'Recti-riter' chart recorder. The air position co-ordinates were also recorded every 20 seconds by photographing two Veeder counters which displayed the air position in two components at right angles.

The height of the aircraft above ground level was recorded by an STR30B radio altimeter and displayed on a Kelvin & Hughes chart recorder.

All records were correlated by fiducial marks made at intervals of 20 seconds.

A base-station fluxgate magnetometer was operated during survey flights at a sensitivity approximately equal to the airborne magnetometer, to monitor diurnal variation and magnetic storms.

3. RESULTS

One hundred and sixty one magnetic anomalies of magnitude greater than 200 gammas were recorded. Of these, eighty exceed 1000 gammas and seven exceed 3000 gammas. Parts of some

flight lines in the south-western corner of the survey area were re-flown to record the peaks of some of the more intense magnetic anomalies. Areas of magnetic disturbance are represented on Plate 1 by heavy lines linking anomalies of approximately equal magnitude.

No radiometric anomalies were recorded.

By arrangement with the Director of Mines, the results of the survey were forwarded to the Department of Mines, South Australia, for reduction and compilation. Therefore no evaluation of the results of the survey can be made in this Record.

INDEX TO 4 MILE MAP AREAS

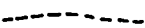
PORT AUGUSTA	ORROROO	OLARY
WHYALLA	BURRA	CHOWILLA
MAITLAND	ADELAIDE	RENMARK

 Area covered by survey

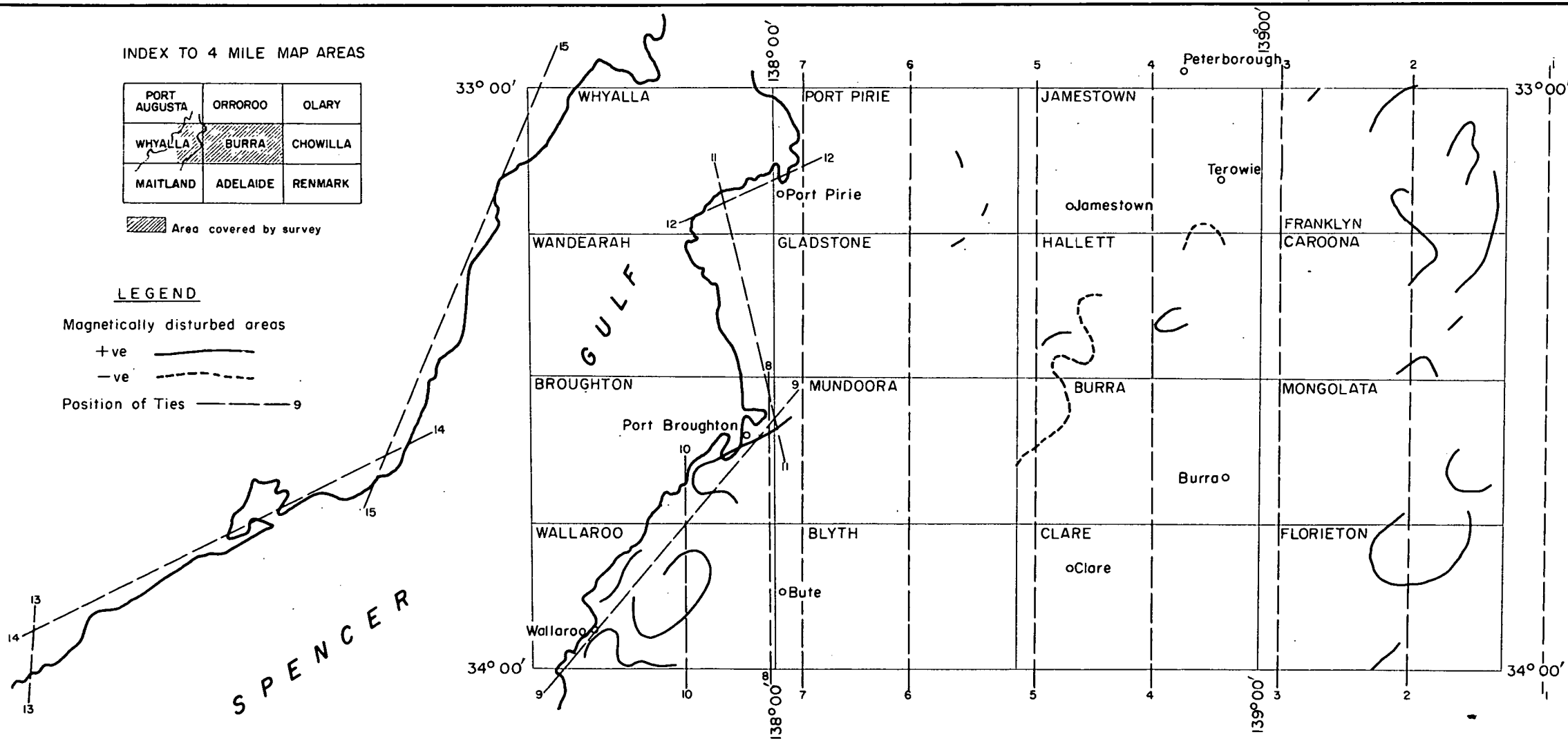
LEGEND

Magnetically disturbed areas

+ve 

-ve 

Position of Ties  9



AIRBORNE MAGNETIC AND RADIOMETRIC SURVEY
S.A. 1960
BURRA AND PART WHYALLA 4 MILE AREAS

