CONTENTS ENVELOPE 2369 E.L. NO. 101

TENEMENT: Exploration Licence 101

TENEMENT HOLDER: Mareloo Pty. Ltd.

13.2.74

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MARELOO PTY. LTD.

19 Gladstone Road,
Brighton. S.A. 5048.

The Director,
S.A. Department of Mines,
P.O. Box 38,
Rundle Street,
ADELAIDE. 5001

Re: Quarterly Statement E.L. 101 - Giant's Head Area, South Australia.

Dear Sir,

Please find enclosed a report entitled "Report on Preliminary Geological, Magnetic & Geochemical Work carried out in Giant's Head Area, South Australia (E.L. 101)" by R. B. Wilson, which is submitted as an Appendix to this Quarterly Statement.

Expenditure to date on E.L. 101 totals $560.00.

Yours faithfully,

B. Burslem
Manager
MARELOO PTY. LTD.

Director of Mines

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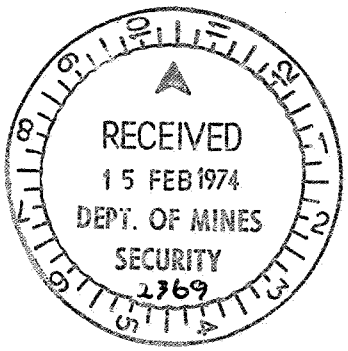
Report on Preliminary Geological, Magnetic and Geochemical Work - GIANT'S HEAD AREA, SOUTH AUSTRALIA E.L. 101



by

R. B. Wilson

005

C O N T E N T S

Accompanying Map

Sketch-map Vicinity of Giant's Head Water Bore showing Magnetometer Traverses, Sketch-Geology, and Location of Geochemical Soil-samples. Scale 1" to 100 feet.

APPENDICES

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I. INTRODUCTION

Attention was drawn to this area by the mention of a chalcopyrite-hematite association within host calc-silicate rocks (of diapiric origin) surrounding the soda-leucogranite intrusives of presumed Ordovician age, in the Giant's Head - Tourmaline Hill area. (Coats R.P. & Blisset A.H. 1971 - "Regional and Economic Geology of the Mount Painter Province" p. 200). Giant's Head is located some 2½ miles south of Umberatana Homestead,and toward the northwestern corner of the Wooltana 1-mile map-sheets.

A further clue to possible mineralization in the area came from a reported intersection of a narrow zone of massive sulphides in a water-bore near Giant's Head.

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II. GEOLOGY

The Giant's Head diapir is a northeast-trending structure up to ½ mile or so in width at its southwestern extremity but narrowing rapidly to the northeast. It consists of brecciated and metamorphosed calc-silicate rocks of probable Wywyana Formation affinities and probably is contiguous with the Tourmaline Hill diapiric structure, further to the Northeast.

A feature of this and several other small diapiric structures in the general vicinity, is the presence of intrusive rocks, which are varieties of soda-rich leucogranite.

Mawson & Dallwitz ("The Soda-rich Leucogranite Cupolas of Umberatana" 1945 Trans. Roy. Soc. S.A. 69 (1)) suggested the soda-leucogranite bodies to be high level apophyses or cupolas of an extensive subsurface granitic batholith. Intrusion of the granites and introduction of soda, chlorine boron etc., as a late phase, resulted in metamorphism and metasomatism of the country rocks.

On present knowledge, such intrusives would probably be correlated with the Mudnawatana Granite of Ordovician age ("Younger Granite Suite"). However, Coats (1971) suggests these soda-leucogranite intrusives to be of early Willouran age and to have been later dismembered during diapirism.

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The Giant's Head diapir intrudes a complex south-westerly-plunging anticlinal dragfold, with Burra Group sediments (Skillogalee Dolomite and overlying un-named sequence) on its eastern margin and Umberatana Group sediments to the south and west. The Bolla-Bollana Formation and overlying highly pyritic Tindelpina Shale, are sharply truncated by the southwestern contact of the diapir.

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III. RESULTS OF PRELIMINARY EXPLORATION

Two days were spent in the field on:-

(1) Geological reconnaissance - of the southwestern portion of the diapir and neighbouring contacts with the Yudnamutana Sub-Group sediments. No formal mapping was carried-out at this stage of the investigation, partly because of a lack of aerial-photo enlargement of a suitable scale.

(2) Ground Magnetometry - owing to the fairly common association of magnetite with sulphides in the North Flinders area (viz. Yudnamutana - Yerelina area, Mt. Painter area, Mt. McTaggart area etc.), particularly in zones of hydrothermal activity and metasomatism, two trial ground-magnetometer traverses were run in the vicinity of the water-bore near Giant's Head. These were spaced 100 feet east and west respectively from a fence-line trending 340° (m), which was flagged at 100 feet intervals.

Magnetometer readings were taken at 50 feet intervals (See accompanying map).

Both magnetometer traverses showed essentially very uniform values with no notable anomalies.

(3) Geochemistry

A total of 19 soil-samples (6" - 12" Depth) were taken

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from the vicinity of the water-bore and around the margins of a nearby leuco-granite outcrop. Even though the area underlain by diapiric breccia is quite flat and scree-covered, it was hoped that some near-surface expression of any possible sub-surface sulphide occurrence, may be revealed by shallow soil-sampling. No anomalous values were recorded (see attached map).

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IV. CONCLUSIONS & RECOMMENDATIONS

A large proportion of the diapir-area is overlain by a flat and scree-covered surface, making most of the area of interest un-suitable for surface geological prospecting and mapping, although some limited outcrop of brecciated and metamorphosed calc-silicate host-rocks (? Wywyana Formation) occurs along the more deeply-incised creek channels. The soda-rich leucogranite intrusives form prominent hills but there are no visible signs of mineralization within these.

Both ground magnetometry and surface soil geochemistry in the vicinity of the sulphide occurrence in the water-bore, failed to reveal any anomalous trends which might assist further subsurface exploration.

Further magnetometry and/or geochemistry on a wider-scale may define some broader-anomalous trends. Perhaps auger-drilling to bedrock through the surface soils and scree, may be necessary to detect geochemical trends.

On a general comparison-basis with mineralized zones in the Mt. Coffin, Copley and Mt. Lyndhurst areas, some potential target-areas near the contact-zone between basal, pyritic Tindelpina Shale and intrusive diapiric material may be worthy of further investigation, although no outcropping indications of copper are known in the Giant's

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Head area.

R. B. Wilson
Geologist.
January 1974

SYDNEY ADELAIDE : 013 MT. ISA APPENDIX 1

McPhar Geophysics Pty. Ltd.
48-52 MARY STREET
UNLEY, S.A. 5061
P.O. BOX 42
UNLEY, S.A. 5061
PHONE: 72 2133
CABLE: "PHARGEO"
ADELAIDE
TELEX: "PHARGEO"
AA82623

GEOCHEMICAL RESULTS

Samples from: MARALOO PTY. LTD. GIANTS HEAD
Area:
Samples of: SOILS
Preparation:
Batch No.: CH 5190

Sheet No.: 1
Date: 6.9.73

SAMPLES WILL BE DISPOSED OF AFTER TWO MONTHS UNLESS WE ARE OTHERWISE ADVISED

Sample Description	Cu PPM
B1	30
B2	30
B3	25
B4	20
B5	20
B6	25
B7	30
C1	25
C2	25
D1	30
D2	25
E1	25
E2	30
E3	25
E4	20
E5	15
E6	30
E7	20
E8	20

-80 # size analysed.

AL METHODS: Cu by AAS following hot conc. $HClO_4$ leach for 1 hour of 0.25 g sample.

N: Two copies to Maraloo Pty.Ltd. Signed:

This Laboratory is registered by the National Association of Testing Authorities, Australia. The test(s) reported herein have been performed in accordance with its terms of registration. This document shall not be reproduced except in full.


GIANTS HEAD
NORTH OF WATER BORE
3/6/73
MAGNETIC NORTH
3/6/73
Granite Knob
Diapiric Breccia
All Flat area c Scree Alluv.
All Flat area c Soils
Coarse gr granite
- EXPLANATION -
·2400 GROUND MAGNETOMETER READINGS.
⊗ LOCATION GEOCHEMICAL SOIL SAMPLES
-/-/-/- FENCE
PROMINENT OUTCROPS SODA - LEUCO GRANITE
Diapiric Breccia - - calc silicates (?Wynyand Fm)
SKETCH-MAP GIANT'S HEAD AREA (WATER BORE)
SHOWING SKETCH GEOLOGY,
GROUND - MAGNETOMETER TRAVERSES
and
LOCATION SOIL SAMPLES.
Scale 1" to 100 Feet.
ENV 2369-1
R.B. Wilson
JAN 1974.

MARELOO PTY. LIMITED

014

19 Gladstone Road,
NORTH BRIGHTON

Director of Mines,
Department of Mines,
P O. Box 38, Rundle Street,
ADELAIDE.

28th May, 1974

Exploration Licence No. 101

Dear Sir,

Following the work carried out on the above Exploration Licence and shown in our January report, no further field work has been undertaken on this particular area during the quarter ended 14th April 1974.

Further work, based on the geologist's report and from information obtained from other areas, will be carried out to comply with the conditions of our licence prior to the expiry date of the licence.

Yours faithfully,
MARELOO PTY. LIMITED

B.J.BURSLEM
Manager

RECEIVED
31 MAY 1974
DEPT. OF MINES
SECURITY
2369

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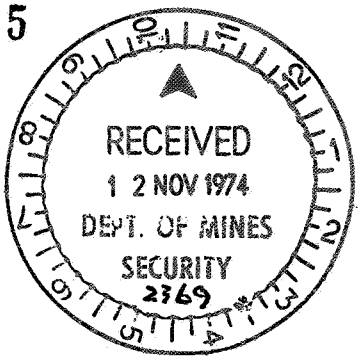

Final Report

October 30, 1974

The Managing Director,
Mareloo Pty. Ltd.,
19 Gladstone Road,
NORTH BRIGHTON. S.A. 5048

Dear Sir,

Further to my "Report on Preliminary Geological, Magnetic and Geochemical Work - Giant's Head Area, South Australia - E.L. 101", earlier in the year, I submit the following points for your consideration:-

(1) The original intersection of about 5 feet of fairly massive sulphides (approximate proportions of +85% pyrite to -15% chalcopyrite) in a vertical water bore at Giant's Head, is reported to have occurred at or near the contact of brecciated diapiric sediments (Wywyana Formation?) and coarse-grained leucocratic granite. The area of interest is flat and extensively scree and soil-covered, the only sporadic outcrops being composed of granite.

(2) Preliminary geological, magnetic and geochemical prospecting in the immediate area of the above-reported bore-intersection failed to provide any magnetic or geochemical trends which might be useful for further prospecting.

(3) The general lack of magnetic character in the area investigated suggested that an extensive bedrock-geochemical survey, using auger-drill methods, would probably be a necessary first step in a programme to explore for further copper mineralization.

In all probability, the mineralization is of vein-type and possibly quite narrow (approximately 5 ft sulphide intersection in the vertical bore-hole, as reported by drillers).

In my opinion, exploration in such an extensively covered area, by relatively high-cost bedrock-geochemical and/or geophysical methods, may not locate narrow vein-type mineralization, and therefore is not warranted, particularly in view of the present economic climate.

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I would therefore recommend that an application for relinquishment of the Exploration Licence No. 101 be submitted to the Minister of Mines as soon as possible.

Yours faithfully,

R. B. Wilson,
Geologist.

RBW:lw