OPEN FILE

EXPLORATION LICENCE NO. 2368 - TANAMI DOWNS

THE GRANITES  1 : 250 000  SHEET : SF 52 - 3

NORTH FLINDERS MINES LIMITED

ANNUAL REPORT FOR THE PERIOD 23/11/84 TO 22/1/85

by T.J. IRELAND
15/1/86

NORTHERN TERRITORY GEOLOGICAL SURVEY

C86/106A
CONTENTS :

Summary
Introduction
Work Done
Results
Conclusions

ILLUSTRATIONS :

Location
Airphoto Coverage
TEM Survey Location
Photointerpretation series (back envelope)

APPENDICES :

1. Hunting Geology & Geophysics (Australia) Pty. Ltd.
   re The Granites Region, Northern Territory.
2. McSkimming Geophysics Pty. Ltd.
   Sirotex Profiles, The Granites.

MAPS:

MAP-1 - Photo geomorphology & lithology. Scale 1:100 000
MAP-2 - Landsat Structure. Scale 1:100 000
MAP-3 - Landsat - geomorphic interpretation. Scale 1:100 000
MAP-4 - Photo Structure. Scale 1:100 000
MAP-5 - Aeromagnetic interpretation Scale 1:100 000
SUMMARY:

Airborne reconnaissance was commenced by the completion of an aerial photographic survey of the most prospective areas of the Licence. Regional geological and geomorphological features were investigated by photointerpretation, Landsat interpretation and evaluation of regional magnetics.

Exploration targets were identified.

An orientation TEM survey conducted over The Granites revealed the presence of conductors.

INTRODUCTION:

EL 2368 Tanami Downs is located some 600 km NW of Alice Springs, in the central part of The Granites 1:250 000 sheet (Location Map). It was granted in November 1983.

Exploration is directed principally towards gold, but also to the assessment of potential for other metals.

WORK DONE:

Regional aerial photointerpretation, and Landsat imagery interpretation of the whole EL was undertaken by Hunting Geology & Geophysics (Australia) Pty. Ltd., in conjunction with a geological evaluation of regional magnetic contours.

The objectives of these studies were:

- extend existing regional geological mapping if possible by photointerpretation
- identify (outcrop) areas, best suited to ground geological investigation, for detailed aerial photography
- evaluate lineament and magnetic patterns.

Interpretation was performed on 1:80 000 RC 10 photography, Landsat images at 1:100 000, and aeromagnetic contours at 1:250 000 scale. Presentation is at 1:100 000 scale.

New colour aerial photography was flown over the southern and eastern portion of the EL at the scale 1:80 000, and over selected parts of this area, at 1:25 000 (photo-coverage location plan).

An orientation SIROTEM survey was conducted over The Granites gold deposits. Traverse locations are illustrated on the plan.

The objectives of the survey were:

- identify the TEM response of The Granites mineralisation, to assist in the eventual follow up of reconnaissance anomalies, before disturbance of both the surface and the subsurface by mine development activities is sufficient to distort the geophysical response.
PROSPECT
1. IVY
2. QUORN
3. WEST SHOE
4. SHOE
5. WEST BULLARITCHIE
6. BULLARITCHIE
7. MOONGARRIE
8. TWIN HILLS
9. BUNKERS HILL
10. CHAPMANS HILL

LEGEND
MLS8 MINERAL LEASE
70G GOLD MINING LEASE

THE GRANITES
SHOWING TEM SURVEY LOCATION

NORTH FLINDERS MINES LIMITED
The survey was conducted by McSkimming Geophysics Pty. Ltd., using a medium power SIROTEM 11S Survey System.

RESULTS :

The photointerpretation was useful in nomination of areas for detailed photography.

Exploration targets identified by the interpretation of various geophysical and photographic imagery are described in the Hunting report, attached as appendix 1, and presented in the suite of 1:100 000 scale plans folded inside the back envelope.

The SIROTEM profiles, attached as appendix 2, show a persistent zone of low resistivity in the vicinity of The Granites mineralisation. Further work is required to precisely identify its source.
APPENDIX 1:

HUNTING GEOLOGY AND GEOPHYSICS (AUSTRALIA) PTY. LTD.

re THE GRANITES REGION, NORTHERN TERRITORY
5th September 1985

Mr. T.J. Ireland,
Senior Geologist,
North Flinders Mines Ltd.,
25 Greenhill Road,
WAYVILLE S.A. 5034.

Dear Trevor,

RE: THE GRANITES REGION, NORTHERN TERRITORY

A. Introduction

The study covers an area of 825 km² with the Granites goldfield in the east of the area.

The objectives of the study were to produce photo-structural and photo-geomorphic interpretations; an aeromagnetic interpretation and a Landsat interpretation of geomorphology and structure to assist in mineral exploration.

B. Method

Monochrome aerial photography at approximately 1:80,000 scale of the study area was supplied by North Flinders Mines Ltd. Coverage consists of 78 photographs with a 60% forward and 25% lateral overlap. The photographs were generally only of moderate quality with poor contrast.

Directors: T. J. Gurr (Chairman), A. C. Theron (Managing Director), C. R. Nash (Technical Director), P. A. Rankin
Geological data were annotated onto individual overlays and transferred by projection onto a 1:100,000 scale base map constructed from a combination of R.C.9 1:80,000 scale photography, orthophotomaps at 1:100,000 scale and a 2½ times enlargement of parts of the BMR 1:250,000 scale Mount Solitaire and The Granites geology sheets. The orthophotomaps and the enlargement are supplied with study.

An interpretation of the relevant parts of Landsat images 112-074 and 113-074 has been undertaken at 1:100,000 scale.

An interpretation of the aeromagnetics at 1:250,000 scale has also been undertaken and subsequently enlarged to 1:100,000 scale.

The interpretation is presented as clear film overlays.

The study was undertaken in August 1985.

C. Results

The results of the study are embodied in the accompanying 1:100,000 scale maps. The target areas are discussed below and the numbers refer directly to the accompanying photo geomorphology-lithology sheet.

1. This area lies immediately north of Muriel Range, has several major lineaments identified from aeromagnetics and Landsat interpretation, major circular features and the occurrence of both Mount Charles Beds and intrusive granite.

2. This area, centred on Officer Hill, has much the same factors with the occurrence of a basic body associated with the Mount Charles Beds and the development of an area of higher magnetisation within the Mount Charles Beds.
Yours faithfully,
Hunting Geology and Geophysics (Australia) Pty. Ltd.

B.A. McGrail,
Photogeologist.
APPENDIX 2:

McSKIMMING GEOPHYSICS PTY. LTD.

SIROTEM PROFILES, THE GRANITES.
SIROTEM SURVEY

CLIENT...KARL...C.L.N.B.
AREA...540.6
LINE NO...23756

LOOP CONFIG...FT4...INT...RIIP
LOOP DIMENSION...1200

STATION INTERVAL...5.2.5
STACKS...5.12
SFERICS...O.F.F
INST. SERIAL NO...1224

OPERATOR...P. McKeown
DATE...22.9.83

LOOPS DIAGRAMS ETC.

NORTHERN TERRITORY
GEOLOGICAL SURVEY
CR86/106A
SIROTEM SURVEY

CLIENT   NORTH PARABAS
AREA     BULABA RITCHIE
LINE NO  2048 0626
LOOP CONFIG AVG EE EE
LOOP DIMENSION 100.00
STATION INTERVAL 50
STACKS 512
SFERICS OFF
INST. SERIAL NO 122A
OPERATOR A. MEIKING
DATE 25-9-85

LOOP DIAGRAMS ETC.

% CANT GET VALID
READING AT 4500
There is a ventilation
shaft in centre
of loop.
SIROTEM SURVEY

CLIENT: NORTH PAINTERS

AREA: BULLER G HILL

LINE NO: S 0.750 41

LOOP CONFIG: AIR IN LOOP
LOOP DIMENSION: 100.00

STATION INTERVAL: 5.0 m
STACKS: 512
SFERICS: OFF
INST. SERIAL NO: 1224

OPERATOR: P. MAXIMMING
DATE: 28/2/91

LOOP DIAGRAMS ETC.

STATE ON THIS DATA VERY ACR.
CULTURAL INTERFERENCE SEVERE

5100 N, 5100 N
NOT VALID DUE TO GENERATORS IN LOOP
THE GRANITES REGION N.T.

PHOTO GEOMORPHOLOGY AND LITHOLOGY

REFERENCE

QUATERNARY
- Locatable deposits
- Epiregions
- Arid and aquatic soils and sands
- Aeolian sands
- Aeolian sands in depressions

TERTIARY
- Limestones
- Shales

Scale 1:100 000

NORTHERN TERRITORY GEOLOGICAL SURVEY CR86/106A

Hunting Geological and Geophysical Survey Pty. Limited

AEROMAGNETIC INTERPRETATION

THE GRANITES REGION N.T.

REFERENCE

- Magnetic lineament
- Possible fault
- Outcrop/boundary of magnetic horizon
- Triassic
- Boundary of possible magnetic unit
- Unidentified magnetic source
- Probable granite
- Basic intrusive

Scale 1:100 000

LOCATION DIAGRAM

Sheet Index

THE GRANITES

Mount Durack

CR86/106A

Scale 1:100 000

40 km

NORTHERN TERRITORY

GEOLOGICAL SURVEY

Hunting

Hunting Geology and Geophysics Limited a Hunting Company