

EXPLORATION LICENCE NO. 263

NORTHERN TERRITORY

ANNUAL REPORT

YEAR ENDING 31 DECEMBER 1972

SUBMITTED BY

QUEENSLAND MINES LIMITED

OPEN FILE

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INTRODUCTION

The 1972 year has involved a major reassessment of all known data, pertaining to this Licence area, which was collected in past years.

The systematic assembly and interpretation of this data has enabled data gaps to be defined and has provided a feeling for the depth of exploration coverage achieved in the past.

Evaluation of this Licence presents some difficulties. The Kombolgie Formation obscures the older underlying metasedimentary rocks which are regarded as being the most favourable rocks for the occurrence of uranium mineralisation. At this point in time it is not known if in fact the rocks below the Kombolgie are comparable to those in which orebodies have been found. Further, exploration of the area is rendered more difficult because of the nature of the terrain insofar as access is only possible on foot or with helicopter support.

Because of the Kombolgie cover it is not possible to make direct comparisons of the geology of this area with other known mineralised areas and therefore selection of favourable areas on the criteria established elsewhere is not possible. A different approach and set of exploration techniques has to be developed to explore this area.

TENEMENT

EL 263 was granted for a period of approximately 9 months from 17 March 1972 to 31 December 1972, and previously formed part of AP 2221 which expired in 1971.

The Licence comprises an area of approximately 1100 sq. km.

OBJECTS OF EXPLORATION

The objects of the 1972 exploration programme were to

- (1) Reappraise and reinterpret the results of the previous exploration work carried out.
- (2) Represent the data that was judged to be reliable in a form which could be readily utilised and convert data to metric units and scales.
- (3) Identify the gaps in the data previously collected.
- (4) Redesign the exploration work to fill the necessary gaps and test those areas judged as being favourable for ore occurrence.
- (5) Execute the redesigned programme.

WORK COMPLETED

A complete reappraisal of existing data relating to this Licence was undertaken during 1972.

New geological maps were compiled on standard sized sheets and metric scales. The geology appearing on these maps was essentially interpreted from aerial photograph studies. In compiling the geology maps it was apparent that the regional geology was inadequately known. In an effort to obtain more detailed and more reliable geological base maps a contractor was engaged to provide aerial colour photograph coverage of the entire area. This colour photography together with existing maps and geophysical information is presently being used by consultants in Denver U.S.A. to produce new geological base maps of the area. The new maps will be provided on a scale of 1:25,000.

Although the Company had airborne magnetometer coverage of the area undertaken in 1970, this information was only available in the form of raw data and was of little use in that form. A contractor, Hunting Geology and Geophysics Ltd, was engaged during 1972 to reduce the data and produce the results in contour form. Contour maps are presented as overlays to the geological maps.

The initial qualitative interpretation of the analogue radiometric data suggested that most anomalies related to volcanic members of the Kombolgie Formation, and were therefore of low priority. Detailed interpretation of all data was therefore not considered justified, and only selected anomalies have been digitised. Plotting and contouring of this data will be undertaken on receipt of the 1:25,000 geological base maps.

EXPENDITURE STATEMENT

In the year ending 31 December 1972, the exploration expenditure within EL 263 was \$12,795.

SUMMARY OF PRESENT EXPLORATION SITUATION

EL 263 comprising some 1100 sq. km. is entirely covered by Kombolgie sandstone which totally obscures the underlying rocks.

Photogeological interpretation undertaken in 1972 indicated a few areas where interbedded volcanic rocks probably occur. The current photogeological interpretation being carried out in Denver U.S.A. will provide more detailed and reliable geological maps to assist with the evaluation of this area.

Studies undertaken of the airborne radiometric data which show some minor anomalies to be present, do not suggest that these anomalies are significant. However, until the new geological maps are available the full significance of the anomalies cannot be assessed.

Aeromagnetic contour maps of the entire area are available.

No geochemical surveying has been undertaken or is planned.

It is inferred that the rocks beneath the Kombolgie sandstone in this Licence area are metasediments of the South Alligator Group and are probably of younger age than the Myra Falls Metamorphics which occur to the north.

FUTURE EXPLORATION

This Licence is entirely covered by Kombolgie sandstone and more recent rocks. It is suspected that the rocks beneath the sandstone cover will be metasediments of the South Alligator Group.

The criteria defining favourable areas on the basis of geology developed from the Nabarlek area therefore does not apply, and further, no direct comparison is possible because of the thick cover of sandstone.

The work carried out to date has not assisted greatly with evaluation of this Licence. The new geology maps which will be available shortly are not expected to provide much if any assistance as to what may lie below the Kombolgie.

On receipt of the new geological maps and integration of this data with existing information, it will be decided what ground inspection work will be carried out if any.

At the present time it is thought that the only effective way of obtaining knowledge of the buried rocks is to drill a few wildcat or stratigraphic holes through the Kombolgie. Before deciding on this step a greater knowledge of the nature and extent of alteration patterns that appear to be present with uranium mineralisation is desirable. These studies are currently being carried out elsewhere by the Company for this purpose. The reasoning being that wildcat holes are highly unlikely to cut mineralisation but may intersect an alteration zone which presents a far larger target area if it can be defined geochemically.

PROPOSED EXPENDITURE

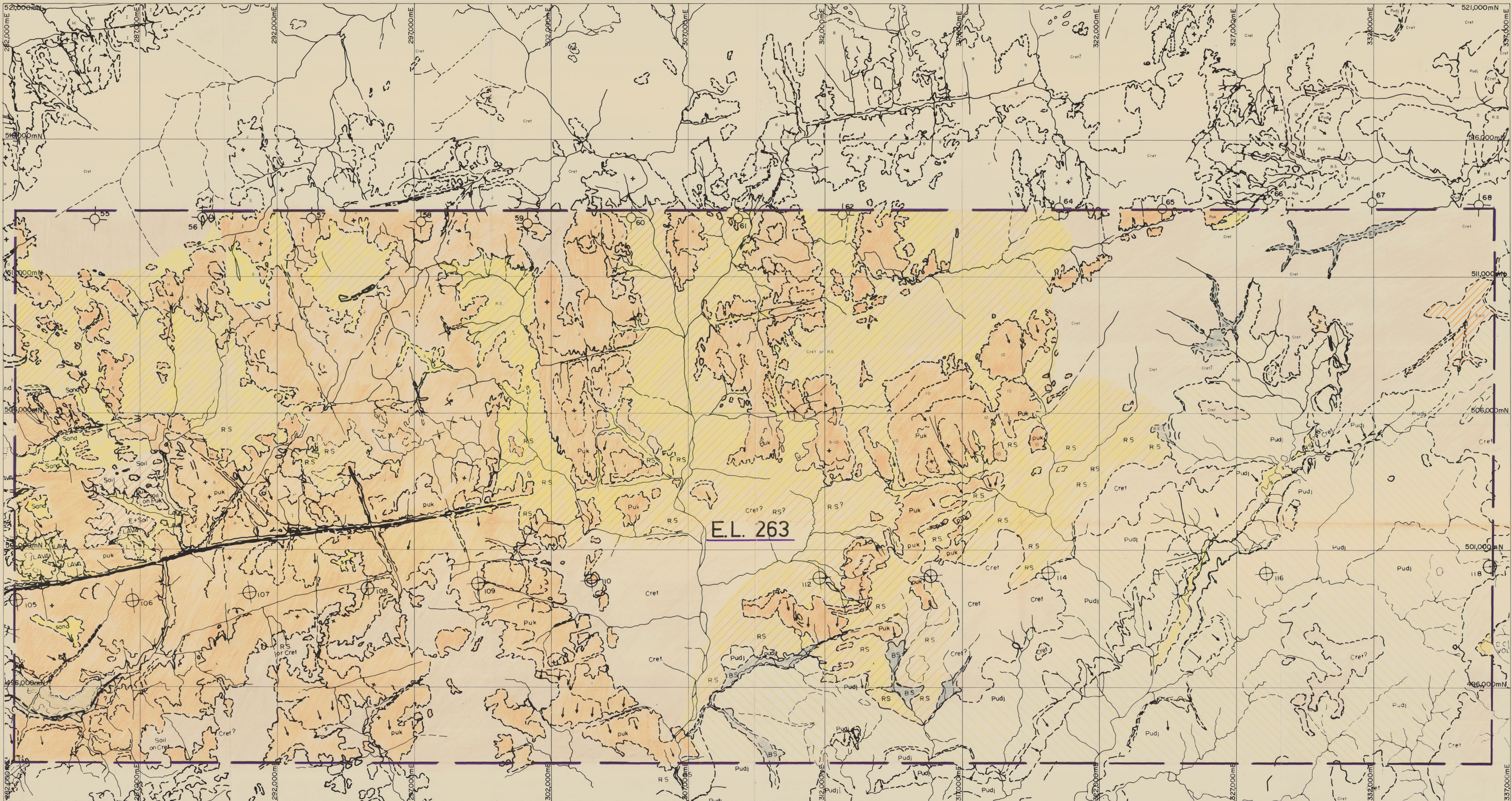
It is proposed to spend \$5,000 on exploration within EL 263 during the year ending 31 December 1973.

EL 263 - APPENDIX I

LIST OF MAPS AND ENCLOSURES

LIST OF MAPS IN APPENDIX II

| <u>Enclosure No.</u> | <u>Title</u> | <u>Scale</u> | <u>Sheet</u> |
|----------------------|-----------------------------|--------------|-----------------|
| 1 ✓ | Regional Geology | 1:50,000 | Katherine River |
| 2 ✓ | Airborne Radiometric Survey | 1:50,000 | Katherine River |
| 3 ✓ | Airborne Magnetic Survey | 1:50,000 | Katherine River |



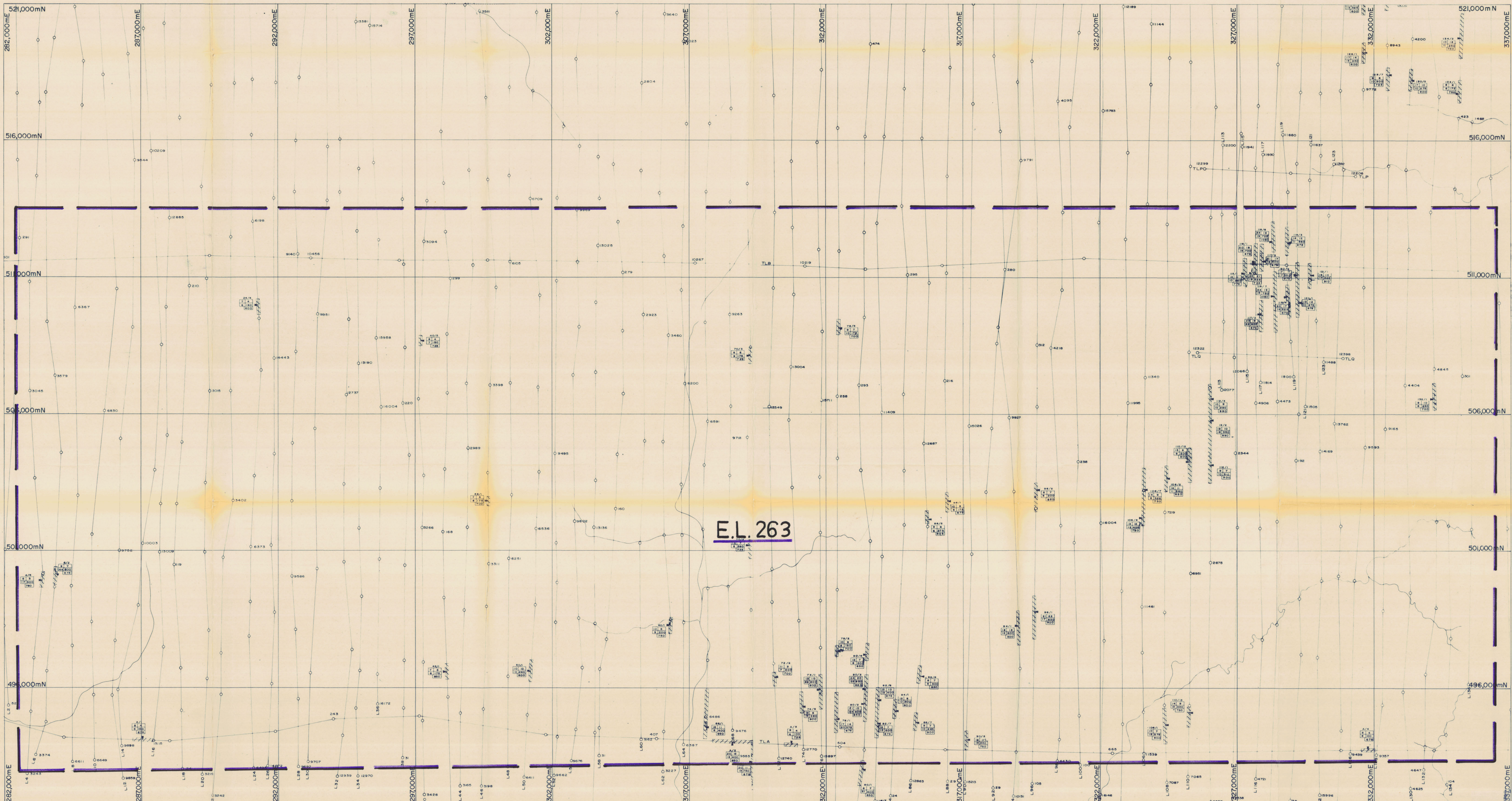
E.L. 263

QUEENSLAND MINES LTD.

REGIONAL GEOLOGY
'KATHERINE RIVER' SHEET
PRELIMINARY SHEET ONLY
E.L. 263 N.T.

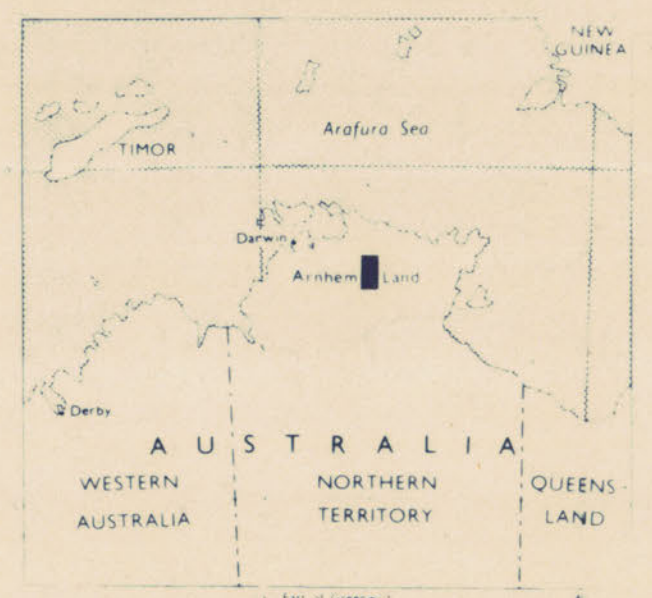
1:50,000 (Regional Metric Grid)

ENCLOSURE NO. 1



E.L. 263

LOCATION DIAGRAM



1:50,000 SHEET INDEX

| | |
|----|----|
| 8 | 9 |
| 10 | 11 |
| 12 | |
| 13 | |
| 14 | |
| 15 | |

TOTAL COUNT ANOMALY MAP

THE KATHERINE AREA, NORTHERN TERRITORY,
for
QUEENSLAND MINES LIMITED

SCALE 1:50,000 APPROX.



HUNTING GEOLOGY AND GEOPHYSICS LTD.

LEGEND

- Mean flying height A.M.G.L. 400 feet
- Mean flight line spacing 1/2 mile
- Mean line spacing 1/4 mile
- Flight line and tie line L47, TLA
- Points plotted from 35mm photography O 667
- Half width of total count anomaly
- Position of peak
- Radiometric anomaly reference number
- Peak minus local background (C.P.S.) for channels 1, 2, 3, 4
- Total count background channel 1

Flown APRIL - JUNE 1970; compiled JUNE - JULY 1970.

QUEENSLAND MINES LTD.

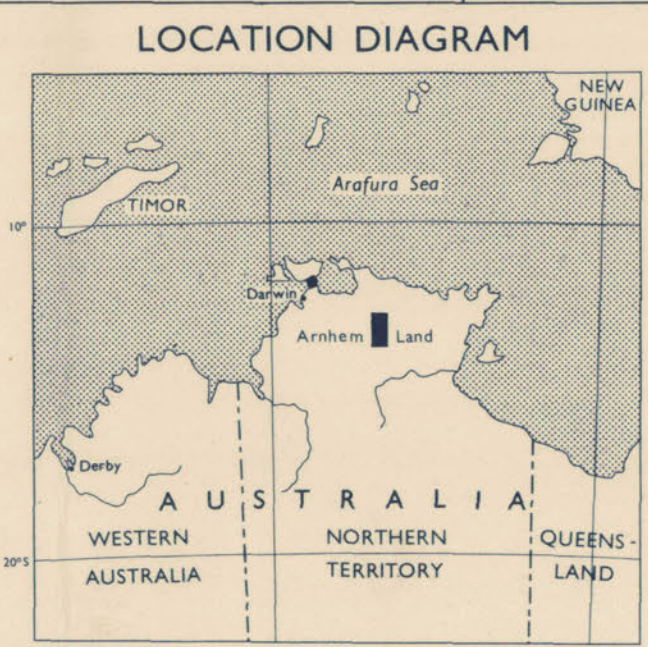
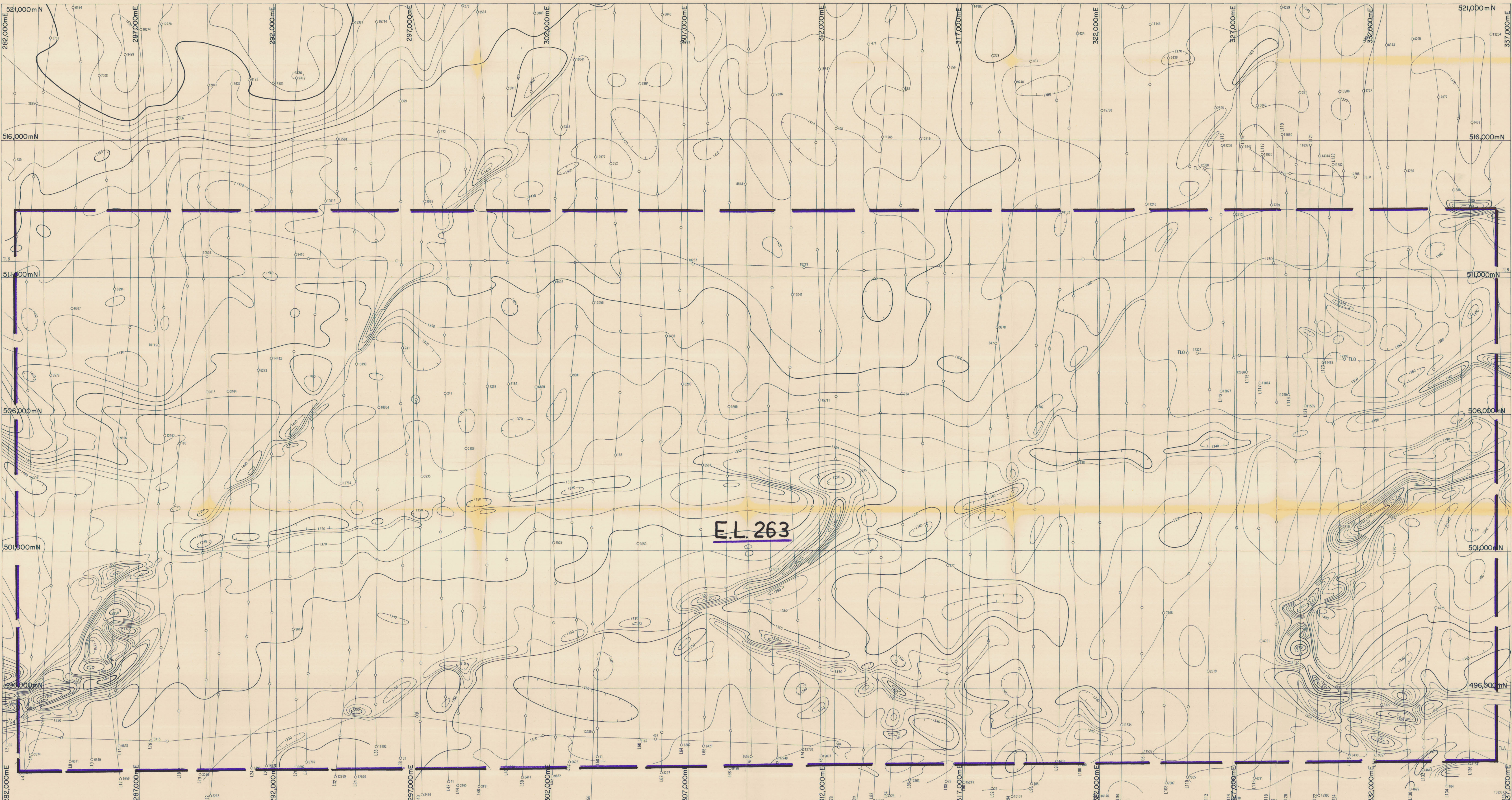
AIRBORNE RADIOMETRIC SURVEY
'KATHERINE RIVER' SHEET

E.L. 263 N.T.

Scale: 1:50,000 (metric)

Date drawn: 3-7-72 Author: Drafting: R.B.
Date revised: Drawing No: 15

ENCLOSURE 2



| | |
|----|----|
| 8 | 9 |
| 10 | 11 |
| 12 | |
| 13 | |
| 14 | |
| 15 | |

TOTAL MAGNETIC INTENSITY CONTOUR MAP
THE KATHERINE AREA, NORTHERN TERRITORY,
for
QUEENSLAND MINES LIMITED

SCALE 1:50,000 APPROX.



HUNTING GEOLOGY AND GEOPHYSICS LTD.



- LEGEND
- Mean flying height A.G.L. 400 feet
 - Mean flight line spacing 1/2 mile
 - Mean tie line spacing See report
 - Flight and tie line L139 TLB
 - Point plotted from 35 mm photography O 5725
 - Minimum contour interval 10 gamma
 - Magnetic contours 10 50 100
 - Area of low magnetic intensity

COMPILATION NOTE
Survey flown April - June 1970
Compiled August - September 1972

QUEENSLAND MINES LTD.

AIRBORNE MAGNETIC SURVEY
KATHERINE RIVER SHEET

E.L. 263

Scale : 1:50,000 (metric)

| | | |
|------------------------|-------------|-----------|
| Date drawn : Sept. 72 | Author: | Drafting: |
| Date revised : Nov. 72 | Drawing No: | 15 |