ANNUAL REPORT ON EXPLORATION LICENCE NO. 703

Compiled By

B.H. Duck

CREEK, N.T.  

OCTOBER, 1976
ANNUAL REPORT ON EXPLORATION LICENCE NO. 703

CONTENTS

1. INTRODUCTION 1
2. TENURE 2
3. REGIONAL GEOLOGY 3
4. REGIONAL GEOPHYSICS 4
5. PROSPECT EVALUATION 5 & 6
6. EXPENDITURE 7
7. BIBLIOGRAPHY 8

TABLES

Table 1 Regional Stratigraphy of Exploration Licence No. 703.
Table 2 Exploration Activities on Navigator Prospects.

APPENDICES

Appendix 1 Description of Exploration Licence No. 703.

LIST OF FIGURES

Figure 1 Location Plan of Exploration Licence No. 703
Figure 2 Location of Prospects within Exploration Licence No. 703.
Figure 3 Residual Magnetic Intensity Contour Plan of Exploration Licence No. 703.
1. INTRODUCTION

Exploration Licence No. 703 held by Australian Ores & Minerals Limited was granted on the 7th November, 1972 for a period of twelve months. It was renewed for a further twelve month period on the 7th November, 1973, and the area held under Licence was not reduced.

Under section 38E sub-section (11) of the Northern Territory Mining Ordinance 1939 - 1972 further renewals took place in 1974 and 1975, each time the size of the area was reduced.

The Exploration Licence covers an area of 37.9 sq. kms (14.6 sq. miles) and its north eastern corner is situated 83.5 kms on a true bearing of 242° from Tennant Creek. (See fig. 1.)

Access to the Exploration Licence is via a bitumen road from Tennant Creek to the Warrego Mine, along the Wiso Bore Road to a formed dirt track to the Rover Camp of Geopeko Limited. A graded track south and west from this camp provides access through the southern regions of the area.

This report is the fourth statutory Annual Report to be presented, and outlines the activities related to the prospect for the 1975-76 year.

A low level aeromagnetic survey was conducted over the Exploration Licence in 1973 by Geometrics International Incorporated on behalf of Australian Ores and Minerals Limited.

Since that time ground magnetic surveys and diamond drilling have been carried out.
2. **TENURE**

Nine fifteen hectare Mineral Leases are located within Exploration Licence No. 703. The leases is Australian Ores & Minerals Limited, and the leases have all been granted subject to survey.

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>ML 416F</td>
<td>Navigator 12 No. 1.</td>
</tr>
<tr>
<td>ML 417F</td>
<td>Navigator 12 No. 2.</td>
</tr>
<tr>
<td>ML 418F</td>
<td>Navigator 14 No. 1.</td>
</tr>
<tr>
<td>ML 419F</td>
<td>Navigator 14 No. 2.</td>
</tr>
<tr>
<td>ML 420F</td>
<td>Navigator 14 No. 3.</td>
</tr>
<tr>
<td>ML 421F</td>
<td>Navigator 14 No. 4.</td>
</tr>
<tr>
<td>ML 422F</td>
<td>Navigator 14 No. 5.</td>
</tr>
<tr>
<td>ML 423F</td>
<td>Navigator 14 No. 6.</td>
</tr>
<tr>
<td>ML 424F</td>
<td>Navigator 14 No. 7.</td>
</tr>
</tbody>
</table>
3. REGIONAL GEOLOGY

The Exploration Licence is devoid of outcrop, however, diamond drilling within the area licenced and the surrounding areas, has established the stratigraphic succession shown in Table 1.

The Cambrian is known to extend in all directions from the area - thinning, to the east and north east, whilst thickening to the west. The extent of the underlying Warramunga Group is postulated to be continuous over the area covered by the licence.

The Cambrian sequence is flat, whereas the Lower Proterozoic, Warramunga Group appears to be inclined steeply, although not consistent.

It is considered that the diorite body of Navigator 12 and the feldspar porphyroid of Navigator 14 are both Proterozoic intrusives, and cannot be related to any potential economic mineralisation.

<table>
<thead>
<tr>
<th>Table 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>REGIONAL STRATIGRAPHY OF EXPLORATION LICENCE NO. 703</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Era</th>
<th>Period</th>
<th>Rock Unit</th>
<th>Lithology of sub-unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cainozoic</td>
<td>Quaternary</td>
<td>Surficial Deposits</td>
<td>Sand, silt and lateritic soil profile.</td>
<td></td>
</tr>
<tr>
<td>Palaeozoic</td>
<td>Middle Cambrian</td>
<td>Merrina Beds</td>
<td>Sandstone, siltstone, dolomite, with minor grit and conglomerate</td>
<td></td>
</tr>
<tr>
<td>~~~Unconformity varies from 168m to 210m vertical depth~~~</td>
<td>Lower Proterozoic</td>
<td>Warramunga Group</td>
<td>Shale, siltstone with minor fine greywacke, dolomite and chert. Contains acid and intermediate intrusives, and possible tuff.</td>
<td></td>
</tr>
</tbody>
</table>
4. REGIONAL GEOPHYSICS

A low level aeromagnetic survey of the Exploration Licence was carried out by Geometrics International Incorporated on behalf of Australian Ores and Minerals Limited, in May - June, 1973.

Data from the above survey and other low level aeromagnetic surveys in adjacent areas suggests the area embracing Exploration Licence No.703 lies on the southern side of a broad east-west trending syncline (or anticline).

Major faulting of this structure is apparent from the aeromagnetic survey results.

Recent re-interpretation indicates that the magnetic anomalies seen on the 1973 low level survey have a definite common characteristic.
5. PROSPECT EVALUATION

5.1 Prospect Location

<table>
<thead>
<tr>
<th>Navigator</th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
</table>
| 12        | 20° 02' 45" | 133° 25' 12"
| 13        | 20° 02' 03" | 133° 27' 03"
| 14 Anomaly 1 | 20° 00' 33" | 133° 28' 07"
| 14 Anomaly 2 | 20° 00' 12" | 133° 28' 23"
| 14 Anomaly 3 | 20° 00' 17" | 133° 27' 45"
| 15        | 20° 01' 55" | 133° 28' 39"
| 16        | 20° 01' 05" | 133° 27' 35"
| 17        | 20° 00' 13" | 133° 26' 02"

5.2 Summary of Previous Activities

Within the Exploration Licence five magnetic anomalies have been located on the ground. These were designated Navigators 12, 13, 14, 15, 16 and 17.

The following table summarises the activities carried out over these prospects.

**TABLE 2**

<table>
<thead>
<tr>
<th>EXPLORATION ACTIVITIES ON NAVIGATOR PROSPECTS</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>grid schedules prepared</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>(X)</td>
<td>(X)</td>
<td></td>
</tr>
<tr>
<td>gridded</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>leased</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ground magnetics</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>drill target derived</td>
<td>X</td>
<td></td>
<td>(X)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>drilled</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thus marked (X) indicate work that was done during the 1975-1976 year just ended.

For details of previous work, refer to previous reports as listed in the bibliography.

5.3 Summary of Activities for the Year Ending 7th November, 1976

As shown above, grid schedules were prepared for Navigator 15 and 16, and a drill target was derived for the Navigator 13 prospect. None of this work was implemented.
The drilling of Navigator 12 and 14 revealed that the cause of the anomalies of those prospects was magnetic basic rocks and not discrete magnetite bodies.

Detailed geophysical analysis of the magnetic data for the area, indicated that there is a definite group characteristic suggesting a common origin for all the anomalies. As two of the anomalies have been shown to be intrusive basic bodies, this interpretation concludes that economic mineralisation of the type being investigated in this region, will not be found within the limits of Exploration Licence No. 703.
6. **EXPENDITURE**

The total expenditure on Exploration Licence No. 703 for the twelve month period from November 8th, 1975 to November 7th, 1976, was $4,755.95.

The following is a dissection of the expenditure:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diamond Drilling</td>
<td>$ 773.26</td>
</tr>
<tr>
<td>Field Surveying &amp; Drafting</td>
<td>$ 407.92</td>
</tr>
<tr>
<td>Leasing</td>
<td>$ 258.00</td>
</tr>
<tr>
<td>Geological Services</td>
<td>$ 2,123.00</td>
</tr>
<tr>
<td>Geophysical Services</td>
<td>$ 1,984.00</td>
</tr>
<tr>
<td>Unallocated Field Expenses</td>
<td>$ 767.26</td>
</tr>
<tr>
<td>Administration Costs</td>
<td>$ 889.13</td>
</tr>
</tbody>
</table>

**Total** $4,755.95

a) The various sub-divisions above are costed directly, the exception being Unallocated Field Expenses and Administration Costs.

b) Administration costs are proportioned period by period on the basis of man hours worked on the project for the period to the total man hours worked for the period.

c) Unallocated Field Expenses consist of the following field overheads which are spread on the same basis as the Administration Costs.

- Field Messing
- Field Vehicle Operating
- Field Supplies
- Workshop Supplies
- Depreciation - Field Plant.

During the third quarter of the operational year of the licence, evaluation of drilling stocks with corresponding financial equalisation over all areas involving previous drilling, resulted in a credit for this section of the expenditure, as shown above.
7. **BIBLIOGRAPHY**

Geopeko Limited Company Report (Unpubl.)
Tennant Creek, N.T.

Geopeko Limited Company Report (Unpubl.)
Tennant Creek, N.T.

Williams, J.P. 1973 Annual Report on Exploration Licence No. 703
Perth, W.A.
APPENDIX 1

DESCRIPTION OF AREA

All that piece or parcel of land in the Northern Territory of Australia containing an area of 15 square miles more or less, the boundaries of which are described as follows:-

AREA A

Commencing at the intersection of latitude 20 degrees 00 minutes 00 seconds with longitude 133 degrees 25 minutes 00 seconds thence proceeding to the intersection of latitude 20 degrees 00 minutes 00 seconds with longitude 133 degrees 27 minutes 00 seconds thence proceeding to the intersection of latitude 20 degrees 02 minutes 00 seconds with longitude 133 degrees 27 minutes 00 seconds thence proceeding to the intersection of latitude 20 degrees 02 minutes 00 seconds with longitude 133 degrees 26 minutes 00 seconds thence proceeding to the intersection of latitude 20 degrees 04 minutes 00 seconds with longitude 133 degrees 26 minutes 00 seconds thence proceeding to the intersection of latitude 20 degrees 04 minutes 00 seconds with longitude 133 degrees 25 minutes 00 seconds thence proceeding to the intersection of latitude 20 degrees 00 minutes 00 seconds with longitude 133 degrees 25 minutes 00 seconds being the point of commencement.

AREA B

Commencing at the intersection of latitude 20 degrees 00 minutes 00 seconds with longitude 133 degrees 27 minutes 00 seconds thence proceeding to the intersection of latitude 20 degrees 00 minutes 00 seconds with longitude 133 degrees 29 minutes 00 seconds thence proceeding to the intersection of latitude 20 degrees 03 minutes 00 seconds with longitude 133 degrees 29 minutes 00 seconds thence proceeding to the intersection of latitude 20 degrees 03 minutes 00 seconds with longitude 133 degrees 27 minutes 00 seconds thence proceeding to the intersection of latitude 20 degrees 00 minutes 00 seconds with longitude 133 degrees 27 minutes 00 seconds being the point of commencement.
CR 77/11  CONT. ON MICRO. NO. 2

FIGURE 1