EXPLORATION LICENCE 5447

NEAR FINNIS RIVER N.T.


OPEN FILE

For HOWDAH Pty. Ltd.
by
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GEONORTH,
Darwin N.T.

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1. INTRODUCTION

Exploration Licence 5447 includes an area of approximately 174 square kilometres, near Finniss River homestead, located some 50 kilometres southwest of Darwin (Figure 1).

The Licence was granted to Howdah Pty. Ltd. for a six year term commencing 6th October 1988, with annual 50% reductions required after the second year. An expenditure covenant of $12,000 applied during the first year.

The area of the Licence lies across the boundary of 1:100,000 scale map sheets Bynoe (5072) and Fog Bay (4972). The country is low lying and consists of alluvial plains, and paludal estuarine plains, along the Finniss River and its tributaries in the south, and gently undulating soil-covered terrain overlying mainly granite in the north. Outcrop of bedrock formations is very scarce.

Vegetation consists of sub-tropical woodlands and grasslands. Cattle raising has been the main land usage around Finniss River. Access to the area is provided by tracks and roads associated with Finniss River station and recent freehold subdivision in the district. Many tracks are usable only in the dry season.

2. GEOLOGY

The area has been mapped by the Northern Territory Geological Survey at 1:100,000 scale, and their work is published in the 1:100,000 Geological Map Series and Explanatory Notes Bynoe (5072) 1985 and Fog Bay (4972) 1986.

In terms of its regional geological setting the EL lies to the west of the Pine Creek Geosyncline, in a belt of relatively high grade metamorphic rocks and granitoid rocks known as the Litchfield Province. This Province is at the northern end of a major transcontinental zone of faulting and deformation extending southwest to the Halls Creek Mobile Belt.
Within the Licence area exposures are very few, and the bedrock geology is largely interpreted from drillholes and aeromagnetic data.

Apart from the various superficial deposits rocks known to occur in the area include the Mesozoic Bathurst Island Formation, the Proterozoic Welltree Metamorphics (including Sweets Member), and the Two Sisters Granite.

The Bathurst Island Formation underlies much of the northwestern portion of the Licence area and consists of a thin section (>10m) of sub-horizontal Lower Cretaceous marine claystone, sandstone and basal conglomerate, resting unconformably on the Proterozoics.

The Two Sisters Granite forms basement in the east-central part of the area, being part of a regional batholith of granite, adamellite, granodiorite and minor porphyritic granite. Pegmatites are common and sometimes contain tourmaline and garnet. Radiometric age dating shows the granites to be Early Proterozoic from 1870 to 1800 Ma.

Welltree Metamorphics consisting of quartzofeldspathic schist and gneiss underlie the east of the area. In the west is an unnamed series of gneisses, amphibolites and minor quartzite and carbonate. Sweets Member occurs centrally as relatively small inliers in the granites and Welltree Metamorphics indicated by magnetic anomalies. It consists of gneiss, amphibolite, graphitic gneiss, marble and calc-silicates. The unnamed gneisses west of Tom Turners Fault may be older than The Welltree Metamorphics further east. Both were metamorphosed to amphibolite/upper greenschist facies during the Pine Creek Geosyncline orogen at about 1800 Ma.

3. PREVIOUS WORK IN THE AREA

In addition to the geological surveys noted above, the NTGS has conducted airborne magnetic and radiometric surveys which are published as 1:100,000 scale sheets. Figure 5 shows a portion of the magnetic intensity contour map covering the EL area.
Company exploration has been mainly for uranium, and was conducted in the 1979-82 period by Australian Oil & Gas Minerals Pty. Ltd., and Idemitsu Uranium Exploration Australia Pty. Ltd. A number of exploratory holes were drilled by these companies within the EL area at locations shown on the published geological maps (Figure 4).

A number of holes were also drilled in the area by the Northern Territory Geological Survey.

4. WORK CARRIED OUT BY HOWDAH PTY. LTD.

During the first year of the Licence Howdah's interest was mainly in the exploration and development of possible alluvial tin-tantalum deposits, in the vicinity of 12°48', 130°31' and 12°48', 130°30', in the central-north part of the area.

Two water bores were drilled by Bynoe Drilling at 12°48' 130°31' to provide water for a washing plant to treat bulk samples from the alluvial deposits. Tracks were constructed to provide access to the deposits for taking bulk samples.

Unfortunately insufficient water was available from the bores to proceed with the washing plant.

Expenditures on this work were as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drilling</td>
<td>9525</td>
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<tr>
<td>Bulldozing</td>
<td>3600</td>
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<tr>
<td>Grading</td>
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<td>Survey</td>
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<tr>
<td>Purchase of Maps</td>
<td>120</td>
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<td>Supervision</td>
<td>800</td>
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</tbody>
</table>

TOTAL $16,795
5. RECOMMENDATIONS

1. Evaluation should be continued of alluvial deposits in the north-central and southwest corner of the EL area.

2. The general geological features of the area are favourable for gold, uranium and base metal deposits. Exploration is very difficult because of the lack of exposure. However there is a large body of information from past drilling and geophysical surveys. It is recommended that this data should be researched and evaluated in detail, particularly in relation to gold potential, in the light of recent developments in the Pine Creek Geosyncline.

An expenditure commitment of $12,000 will be required to complete these works.
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EL 5447
REGIONAL GEOLOGY
Fig. 3
LEGEND

CAINozoic

Qa  Alluvium.
Qcl  Colluvium.
Qaf  Black clay soil.
Czs  Sand & clay soils.
Czl  Laterite.

MEZOZOIC

KI  Bathurst Island Formation.

PROTEROZOIC

Pgs  Two Sisters Granite.

Pwt  Welltree Metamorphics.
Pws  Sweets Member.

SCALE 1:100,000

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GEOLOGY
Fig. 4

MAP SOURCE:AUST.GEOL.SERIES:FOG BAY 4972, BYNOE 5072
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MAGNETIC INTENSITY CONTOURS

Fig 5

SOURCE: DME BYNGE 5072, POO BAY 4972.