Licensee - Talmina Trading Pty. Ltd.
Operator - Northern Gold N. L.
Licence - EL 3543 (Shoobridge)
Location - Pine Creek  1:250,000 SD52-8
           - Tipperary  1:100,000 5170
Period    - April 1983 - April 1984
Date Submitted - 9/8/84
Author - B. D. Richardson (Geologist)
TABLE OF CONTENTS

SUMMARY
1. INTRODUCTION
2. WORK DONE AND RESULTS
3. CONCLUSIONS AND RECOMMENDATIONS

FIGURES
1. EXPLORATION LICENCE HOWLEY AREA EL 3543

APPENDIX
1. STATEMENT OF EXPENDITURE EL 3543 APRIL 1983 - APRIL 1984
SUMMARY

Exploration Licence 3543 is located 125 kms south-east of Darwin in the Mt Shoobridge area. The lease was granted to Talmina Trading Pty. Ltd, in 1982 and is now operated by Northern Gold N. L.

The lease covers rocks of the Burrell Creek Formation which are unconformably overlain by sandstone of the Cretaceous Petrel Formation. In the Mt Shoobridge area a number of tin, lead and copper prospects occur in the pegmatites, quartz veins and mineralized shear zones in the schists of the Burrell Creek Formation. EL 3543 contains a small manganese prospect and minor pegmatites. Exploration in the 1983/84 involved general reconnaissance, sampling and reporting. Minor tin mineralization was encountered and further work is planned in the 1984/85 period.
1. INTRODUCTION

Exploration Licence 3543 is located 125 kms south-east of Darwin, on the Tipperary 1:100,000 sheet. The lease was first granted to Talmina Trading Pty. Ltd. on the 19th April 1982 and covers an area of approximately six square kilometers. In December 1983, Northern Gold N.L. became operators of this along with 14 other Talmina leases in the Howley - Shoobridge area.

The lease includes rocks of the Burrell Creek Formation, which are unconformably overlain by sandstone of the Cretaceous Petrel Formation. This sandstone forms a plateau in the central area of the lease, and is flanked by rugged hills. The Middle Proterozoic Shoobridge Granite crops out 1.5 km to the north and a major fault paralleling the Mt Shoobridge Fault crosses the lease towards the western edge. (Fig. 1).

In the Mt Shoobridge area, a series of small tin mines and lead and copper prospects occur in the pegmatites, quartz veins and mineralized shear zones in the schists of the Burrell Creek Formation. Many are associated with the Mt Shoobridge or parallel faults and are genetically related to the nearby Shoobridge Granite.

The most productive mine of the area was the Old Company mine which has been worked intermittently since 1882. The major workings were on a steeply dipping quartz-muscovite reef 1 to 3 m wide, trending north-north-west, which contained patchy cassiterite shoots over a length of 100 m.
The total recorded production from the mine is 145 tonnes of tin concentrate.

Copper, lead and silver occurrences are known from numerous prospects in this general area, but few of them were of economic importance. At the Full Hand prospect copper was mined from two lodes. One is reported to have contained patches of very rich copper in the oxidized zone and the other contained disseminated copper and lead in a graphite shear zone up to 3m wide.

EL 3543, though close to the Shoobridge Granite, contains only one small manganese prospect. It does however contain some pegmatites and a major fault zone which are prospective for tin and base metal mineralization.

During the year only limited exploration was carried out over the licence area, the work involving general reconnaissance and reporting.
WORK DONE AND RESULTS

During the year the author spent six days reporting on EL 3543, which involved three days in the field determining EL boundaries and evaluating previous work done. Several soil samples were collected and trace tin was panned in the concentrate. The reconnaissance located only very minor pegmatites and these will be fully explored during the comprehensive programme planned for the neighboring licence, EL 4196.

The western area of EL 3543 holds little potential for economic tin mineralization, and, consequently the western block is to be relinquished.

CONCLUSIONS AND RECOMMENDATIONS

In the 1984 / 85 period the exploration programme over EL 3543 will constitute a small part of the overall tin - gold exploration programme planned for EL 4196. The estimated expenditure is $2000.00. A Statement of Expenditure for the 1983 / 84 period is given in Appendix 1.
### APPENDIX 1

**STATEMENT OF EXPENDITURE - EL 3543**

**APRIL 1983 - APRIL 1984**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAGES AND SALARIES</td>
<td>900.00</td>
</tr>
<tr>
<td>PROPORTION CONSTRUCTION COSTS</td>
<td></td>
</tr>
<tr>
<td>BRIDGE CREEK CAMP</td>
<td>5300.00</td>
</tr>
<tr>
<td>VEHICLE EXPENSES</td>
<td>1100.00</td>
</tr>
<tr>
<td>INSURANCE</td>
<td>800.00</td>
</tr>
<tr>
<td>STORES AND SUPPLIES</td>
<td>750.00</td>
</tr>
<tr>
<td>LOGISTIC SUPPORT</td>
<td>2000.00</td>
</tr>
<tr>
<td>ADMINISTRATION COSTS</td>
<td>500.00</td>
</tr>
<tr>
<td>AIRFARES AND ACCOMODATION</td>
<td>400.00</td>
</tr>
</tbody>
</table>

**$11750.00**