Rio Tinto Exploration Pty. Limited

ABN 76 000 057 125 / ACN 000 057 125

A member of the Rio Tinto Group

First Annual Report
For the Period Ending 5 June 2006,
EL 22744 Arrla Bay 1, EL 22708 Arrla Bay 2,
EL 24657 Arrla Bay 2a, EL 22707 Arrla 3,
SD5301 Alligator River, SD5302 Milingimbi,
SC5313 Coburg Peninsula
Northern Territory

Exploration Report No. 27644

Tenement Holder: Rio Tinto Exploration Pty Limited
Date: June 2006
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Distribution: Department of Primary Industry, Fisheries and Mines
RTE Perth Information Centre

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LIST OF CONTENTS

LIST OF CONTENTS ....................................................................................................................ii
LIST OF TABLES .........................................................................................................................iii
LIST OF PLANS ........................................................................................................................iii
1. SUMMARY .......................................................................................................................... 1
2. CONCLUSIONS AND RECOMMENDATIONS ............................................................... 1
3. INTRODUCTION ................................................................................................................. 1
4. GEOMORPHOLOGY .......................................................................................................... 2
5. GEOLOGY .......................................................................................................................... 2
6. GEOPHYSICS .................................................................................................................... 3
7. PREVIOUS EXPLORATION ............................................................................................. 3
8. EXPLORATION COMPLETED DURING REPORTING PERIOD ....................................... 3
9. ENVIRONMENT ................................................................................................................. 4
10. EXPLORATION EXPENDITURE ....................................................................................... 4
11. PROPOSED EXPLORATION .......................................................................................... 4
REFERENCES ............................................................................................................................. 5
LOCALITY .................................................................................................................................... 5
_DESCRIPTOR .............................................................................................................................. 6
KEYWORDS ................................................................................................................................6
LIST OF TABLES

Table 1: Tenement Details ........................................................................................................... 2
Table 2: Proposed Expenditure.................................................................................................... 4

LIST OF PLANS

<table>
<thead>
<tr>
<th>Plan No.</th>
<th>Title</th>
<th>Scale</th>
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<tbody>
<tr>
<td>WAp46424</td>
<td>Arlla Bay Tenement Location Plan</td>
<td>1:250 000</td>
</tr>
<tr>
<td>WAp46267</td>
<td>EL 22707 Proposed Work Programme</td>
<td>1:100 000</td>
</tr>
<tr>
<td>WAp46299</td>
<td>Arlla Bay Work Programme EL 22744, 22708 &amp; 24657</td>
<td>1:100 000</td>
</tr>
</tbody>
</table>
1. **SUMMARY**

The Arrla Bay Project consists of four granted Exploration Licences (EL) 22744, 22708, 24657 and 22707 that were applied for in 2000 by Rio Tinto Exploration Pty Limited (RTE). A further 6 applications that are in various stages or the granting process also form part of the project. The tenements are located approximately 60 km northeast of Oenpelli in north west Arnhem Land and consequently are processed under the Aboriginal Land Rights Act 1975 (ALRA).

The tenements are considered prospective for lateritic bauxite mineralisation, similar to that at Gove with a subsidiary target being diamonds. The tenements mostly lie on lateritic weathered Cretaceous sediments of the Arafura Basin. Outcropping basement of Proterozoic granites and metamorphics also occur.

Exploration completed during the reporting period has focused on access negotiations and work programme clearances. No on ground work was conducted.

2. **CONCLUSIONS AND RECOMMENDATIONS**

The work programmes proposed (WAp46267, WAp46299) have been approved for the 2006 dry season.

3. **INTRODUCTION**

The Arrla Bay Project consists of four granted Exploration Licences (EL) 22744, 22708, 24657 and 22707 that were applied for in 2000 by Rio Tinto Exploration Pty Limited (RTE). A further 6 applications that are in various stages or the granting process also form part of the project. The tenements are located approximately 60 km northeast of Oenpelli in north west Arnhem Land and consequently are processed under the Aboriginal Land Rights Act 1975 (ALRA).

Exploration licence EL 24657 was split out of EL22708 following the consent process from the Northern Land Council.

Following grant of the tenements in 2005 (table 1), work programme clearance meetings were scheduled. Due to the inaccessibility of the proposed work area, it was required to conduct a helicopter supported clearance survey. The approved work programme was not conducted in 2005 due to the onset of the wet season.
Table 1: Tenement Details

<table>
<thead>
<tr>
<th>Tenement No.</th>
<th>Tenement Name</th>
<th>Ownership</th>
<th>Application Date</th>
<th>Grant Date</th>
<th>Area Applied km²</th>
<th>Area Granted km²</th>
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<tbody>
<tr>
<td>EL 22707</td>
<td>Arlla Bay</td>
<td>Rio Tinto Exploration Pty Limited</td>
<td>10/7/2000</td>
<td>06/06/2005</td>
<td>345.9</td>
<td>273.6</td>
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<tr>
<td>EL22708</td>
<td>Arlla Bay 2</td>
<td>Rio Tinto Exploration Pty Limited</td>
<td>10/7/2000</td>
<td>06/04/2005</td>
<td>80.6</td>
<td>56.5</td>
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<tr>
<td>EL 24657</td>
<td>Arlla Bay 2a</td>
<td>Rio Tinto Exploration Pty Limited</td>
<td>10/7/2000</td>
<td>31/3/2005</td>
<td>8.3</td>
<td>8.3</td>
</tr>
<tr>
<td>EL 22744</td>
<td>Arlla Bay 1</td>
<td>Rio Tinto Exploration Pty Limited</td>
<td>14/8/2000</td>
<td>31/3/2005</td>
<td>723</td>
<td>316.5</td>
</tr>
</tbody>
</table>

4. **GEOMORPHOLOGY**

The tenements are situated in low undulating terrain called “sandy plains” (Needham 1984) that has a range of elevations from sea level to approximately 150 metres. The main topographic feature of interest is a low smooth elevated plateau between Jungle creek and King River. This plateau has mostly smooth sloping margins and is at an elevation of 50m above sea level.

5. **GEOLOGY**

The tenement area is mostly covered by lateritic weathered Cretaceous sediments of the Arafura Basin. The Cretaceous units have been called Mullaman beds (Rix, 1965) or more recently the Bathurst Island Formation. The Cretaceous sediments consist of variable amounts of sub-labile sandstone, poorly sorted quartz sandstone and siltstone and lesser mudstones. The units are fossiliferous in parts indicating a shallow marine origin. The units are roughly equivalent to the protore sediments that the Gove bauxite deposit is form upon.

In the southern tenement, EL 22707, there are large areas of sub-cropping basement Proterozoic granites of the Nimbuwah Complex and metamorphics of the Myra Falls unit.

The Tertiary weathering and subsequent laterite profile has been described on Croker Island and Coburg Peninsula to the north east where there are small bauxite deposits drilled (Ferenczi, 2001). The bauxite profile in these locations occurs on gently sloping areas less than 20m
above sea level. The occurrences are reported to be up to 9.7Mt @ 46.2% Al₂O₃ in size and average 3m thick. The deposits are covered by approximately 0.5m of soil overburden.

6. **GEOPHYSICS**

The project area is covered by airborne magnetic and radiometric data. The aeromagnetic data are from the Milingimbi 1992 and West Arnhem 2000 surveys that were flown at 500m and 400m line spacing and mean survey elevation of 100 and 60m metres respectively. Cameco have also flown airborne surveys over parts of the tenement. The regional airborne survey shows the low plateau of interest to have an elevated thorium anomaly indicative of a laterite development.

7. **PREVIOUS EXPLORATION**

The area of the Arrla Bay Project has been explored primarily for uranium with EL 734 and EL 5890 being relinquished by Cameco in 1999. This work did not consider the potential for bauxite deposits.

Bauxite exploration in the region has been conducted in the late 50’s to early 1970’s and focussed on the coastal areas of Arnhem Land including the Coburg Peninsula and Croker Island where small resources were found. In 1964, United Uranium NL conducted both ground and helicopter supported exploration for bauxite and manganese in the Cretaceous laterites along the coastline between Coburg and Milingimbi. No significant occurrences were discovered however minor tubular laterite indicative of bauxite development was recorded near Maningridi in the Arrla Bay region.

8. **EXPLORATION COMPLETED DURING REPORTING PERIOD**

Exploration completed during the reporting year included:

- Land access negotiations
- Archaeological Survey of the Proposed work programme
- Helicopter reconnaissance to check the access.

The programme was focussed on land access and work programme clearance work. This included a helicopter supported archaeological survey of the area. Due to the timing of this
work (October) and the lack of an access track, the proposed shallow drilling programme was deferred to the 2006 dry season.

9. **ENVIRONMENT**

There was no ground disturbance activities conducted during the exploration period. Mine Management Plans have been submitted for the proposed exploration (Report No. 27624 and Report No. 27625)

10. **EXPLORATION EXPENDITURE**

The exploration expenditures have been reported separately from the technical report.

11. **PROPOSED EXPLORATION**

The proposed exploration for the 2006 field season has been documented in the Mine Management Plans that have been submitted to and approved by the Northern Land Council. The work will involve either aircore or auger drilling of the raised plateaus which occur on the Cretaceous sediments. In areas which are difficult to access by land, a helicopter will be utilised to transport a man portables sampling device (wacker drill)

A notional budget for the project area is listed as follows:

**Table 2: Proposed Expenditure**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount $</th>
</tr>
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<tbody>
<tr>
<td>Aircore / Auger/ wacker drilling</td>
<td>40,000</td>
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<tr>
<td>Track preparation</td>
<td>15,000</td>
</tr>
<tr>
<td>Field and transport</td>
<td>30,000</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>85,000</strong></td>
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</table>
REFERENCES


Hollingsworth, R J S. 1972 Union Carbide Exploration Corporation Final report on exploration CR1972-0089 AP 2543

LOCALITY

<table>
<thead>
<tr>
<th>Location</th>
<th>Code</th>
<th>Scale</th>
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</thead>
<tbody>
<tr>
<td>Alligator River</td>
<td>SD5301</td>
<td>1:250 000</td>
</tr>
<tr>
<td>Milingimbi</td>
<td>SD5302</td>
<td>1:250 000</td>
</tr>
<tr>
<td>Coburg Peninsula</td>
<td>SC5313</td>
<td>1:250 000</td>
</tr>
</tbody>
</table>
**DESCRIPTOR**

First Annual Report for the Period Ending 5 June 2006, EL 22744 Arrla Bay 1, EL 22708 Arrla Bay 2, EL 24657 Arrla Bay 2a, EL 22707 Arrla 3, SD5301 Alligator River, SD5302 Milingimbi, SC5313 Coburg Peninsula, Northern Territory located within the Arnhem lands Aboriginal Land Trust, Northern Territory, Australia. Bauxite exploration activities were restricted to access negotiations and work programme approvals.

**KEYWORDS**

Alligator River, Coburg Peninsula, Milingimbi, bauxite, archaeological survey, Cretaceous laterite