First Annual and Final Report
For the Period 03 April 2012 to 14 January 2013
EL 24522
Millingimbi SD5302, Junction Bay SC5314
Northern Territory

RTX Report No. 29455

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TENEMENT HOLDER: Rio Tinto Exploration
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CONTENTS

1 SUMMARY ...................................................................................................... 4
2 INTRODUCTION ............................................................................................. 4
3 TENURE STATUS ........................................................................................... 5
4 LOCATION AND ACCESS .............................................................................. 5
5 GEOLOGY ....................................................................................................... 6
6 GEOMORPHOLOGY ....................................................................................... 7
7 GEOPHYSICS ................................................................................................. 8
8 PREVIOUS EXPLORATION .......................................................................... 9
9 EXPLORATION ACTIVITIES DURING THE REPORTING PERIOD ........... 10
  9.1 Auger sampling ........................................................................................ 10
  9.1 Rock sampling .......................................................................................... 12
10 ENVIRONMENT AND SAFETY ..................................................................... 12
11 FUTURE WORK ............................................................................................ 12
12 REFERENCES .................................................................................................. 12
LIST OF DPOS ..................................................................................................... 13
DESCRIPTOR ....................................................................................................... 13
KEYWORDS ......................................................................................................... 13

FIGURES

Figure 1 Location Map
Figure 2 EL24522 on the regional 1:250,000 published geology showing the bauxite target (in stipple) and sample locations (in red).
Figure 3 EL24522 on the digital terrain model imaged from the SRTM data showing the bauxite target (in stipple) and sample locations (in red).
Figure 4 EL24522 on the grey scale thorium radiometric image showing the bauxite target (in stipple) and sample locations (in red).

PLANS

EL24522_2013_S_02_Location Plan Location Plan 1:500,000
EL24522_2013_S_03_Sample_plan Location of samples 1:100,000

APPENDIX

Appendix 1 Auger soil and rock ledgers including assays
1 SUMMARY

This is the first annual and final surrender report for EL 24522 (Rolling Bay). Exploration Licence EL 24522 was granted on 03 April 2012 to Rio Tinto Exploration Pty. Limited (RTX) and surrendered in full effective of the 14 January 2013. This tenement was originally applied for by RTX on the 16 January 2004 covering an area of 718.5 km² with the granted licence being reduced to 520.8 km² following the ALRA process.

The non-consent areas of the original application were split out into 10 new applications (ELA 28666 -28675) and returned to moratorium. These, as part of the project, have been withdrawn in full.

The tenement is located approximately 10 km west of Maningrida in west Arnhem Land and is processed under the Aboriginal Land Rights Act 1975 (ALRA).

The licence was applied for to explore for lateritic bauxite deposits.

Exploration completed consisted of data compilation and target selection followed by a helicopter supported reconnaissance soil auger, rock sampling and mapping programme. A total of 38 auger samples from 30 sites and 4 rock samples were collected and analysed.

The results of the work indicate that the targeted land surface consists of a red loamy soil sitting directly on a sandy clay saprolite without any evidence of bauxite formation. The negative results have led to the tenement and the split out applications being surrendered in full.

2 INTRODUCTION

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3  TENURE STATUS

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Table 1: Tenement Details

<table>
<thead>
<tr>
<th>Tenement No.</th>
<th>Tenement Name</th>
<th>Ownership</th>
<th>Grant Date</th>
<th>Area Applied km$^2$</th>
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The tenement falls wholly within Arnhem Land and is subject to the provisions of the Aboriginal Land Rights Act which is administered by the Northern Land Council. Following the consultation process and tenement grant, a Work Programme Meeting was held on the 11 July 2012 where the helicopter supported reconnaissance programme was approved.

4  LOCATION AND ACCESS

EL24522 covers 520.8 km$^2$ in NW Arnhem Land immediately to the west of the Liverpool River adjacent Maningrida (see EL24522_2013_S_02_Location Plan). This granted licence was split out of the original application that covered an area of 718.5 km$^2$.

Access to the tenement for reconnaissance exploration was via a helicopter based from the Maningrida airport. No roads or tracks within the tenement were made or used during the exploration.
5 GEOLOGY

The tenement area is mostly covered by undifferentiated Cainozoic material which is most likely to be lateritic weathered Cretaceous sediments of the Arafura Basin. The Cretaceous units are named as the 'Bathurst Island Formation', although historically they are known as the ‘Mullaman beds’ (Rix, 1965). These 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 in age to the protore sediments upon which the Gove bauxite deposit has formed.

Tertiary weathering resulting in the development of bauxitic laterite has been described on Croker Island and the Coburg Peninsula to the east where there have been small bauxite deposits drilled (Ferenczi, 2001). These are reported to be up to 9.7 Mt in size @ 46.2% \( Al_2O_3 \), averaging 3 m thick and covered by approximately 0.5 m of soil. The bauxite profile in these locations occurs on gently sloping areas less than 20 m above sea level.

EL24522 was selected as a possible easterly extension to these west Arnhem Land occurrences. Within the tenement a target of approximately 250km\(^2\) in area has been interpreted (see attached figures).
Figure 2. EL24522 on the regional 1:250,000 published geology showing the bauxite target (in stipple) and sample locations (in red).

6 GEOMORPHOLOGY

The area covered by tenement (EL 24522) consists of a gently dipping land surface with an elevation between 70m and 0m ASL. Figure 3 below shows the digital terrain model from the spaces shuttle radar data with the interpreted bauxite target. The gently dipping surface has very few streams within its boundary which is typical of bauxite deposits.
7 GEOPHYSICS

Airborne magnetic and radiometric data are available across the project area. The aeromagnetic data are from the Milingimbi 1992 and West Arnhem 2000 surveys that were flown at 500 m and 400 m line spacing and 100 and 60 m mean survey elevation respectively. The regional airborne survey suggests that the interpreted target area would most likely be covered by soil with no outcropping laterite. The figure below which shows the thorium image from the regional radiometric survey has only a weak response over the interpreted target.
Figure 4  EL24522 on the grey scale thorium radiometric image showing the bauxite target (in stipple) and sample locations (in red).

8 PREVIOUS EXPLORATION

Bauxite exploration in the region in the late 1950’s to early 1970’s focussed on the coastal areas of Arnhem Land mostly in the Coburg Peninsula and Croker Island where small resources were found. No significant occurrences were discovered outside of Croaker Is or Coburg however minor tubular laterite indicative of bauxite development was recorded near Maningridi and the Arrla Bay region.

There have not been any previous exploration licences held over the main target area.
9  EXPLORATION ACTIVITIES DURING THE REPORTING PERIOD

Exploration activities during the period included:

- Defining the bauxite target area within the licence from the remote sensed data
- Work Programme Meeting with the Traditional owners to approve the activities
- Helicopter supported soil auger sampling for a total of 38 samples from 30 sites
- Helicopter supported rock sampling for a total of 4 samples.

9.1  Auger sampling

A hand held auger was used to collect samples below the top soil to test for evidence of bauxite. This technique is used in the initial reconnaissance stage to keep the need for disturbance to a minimum. The auger used has a sample diameter of 85mm with extensions to allow a sample from up to 5m depth to be recovered. (see attached photos of the auger).

The auger holes were “drilled” to the maximum depth possible by hand which ranged from 1m up to 4m depth depending on the hardness of the material. Several locations had a sample taken at 1m intervals down the hole however most sites only had one sample collected for assay at the base of the auger hole. All auger holes had at least one sample sent for assay.

The ledger in appendix 1 includes the description and depth of the assayed sample and the locations are shown on the attached plan.
Auger being used on the project on the left and the auger sample head on the right.

Example of an auger hole and the samples piled into 1m intervals.
Auger samples were collected in calico bags and dispatched to the ALS Brisbane laboratory for analysis using their standard bauxite suite.

The results of the assaying confirm the visual interpretation that the material is very high in silica with no evidence of bauxite. The samples had an average \( \text{Al}_2\text{O}_3 \) of 14.1% with a maximum of 21.1% and \( \text{SiO}_2 \) of 70.3% average and 90.1% maximum.

9.1 Rock sampling

Four rock samples were collected whilst undertaking the reconnaissance auger sampling. The samples were all ferruginous lateritised sandstone with approximately 40% \( \text{Fe}_2\text{O}_3 \) and 40% \( \text{SiO}_2 \). No bauxite textures were recorded in the samples.

10 Environment and Safety

The reconnaissance exploration was designed to have a minimum disturbance and hence a helicopter for access was used. Several of the planned sites were not sampled due to the difficulty in safely landing in a helicopter.

The department of Resources was contacted to discuss if the programme required an Authorisation under the revised Mine Management Act. Confirmation was received from the department on 13 June 2012 that the planned work did not require a Mine Management Plan to be submitted.

11 Future Work

The license has been relinquished in full and no further work is planned.

12 References


LOCALITY
Millingimbi  SD5302  1:250 000
Junction Bay  SC5314  1:250 000

LIST OF DPOS

<table>
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DESCRIPTOR
First Annual and Final Report For the Period 03 April 2012 to 14 January 2013 EL 24522 Millingimbi SD5302, Junction Bay SC5314 Northern Territory, Northern Territory located within the Arnhem Lands Aboriginal Land Trust, Northern Territory, Australia. Bauxite exploration activities included hand auger sampling. Negative results and licence surrendered.

KEYWORDS
Bauxite, Auger, Annual Report, Final Report, Cretaceous laterite Rolling Bay,
APPENDIX 1

Auger soil and rock sample ledgers

EL29422_2013_S_04_augergeochem.txt
EL29422_2013_S_05_rockgeochem.txt