

Rio Tinto Exploration Pty. Limited

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A member of the Rio Tinto Group

**Eighth Annual and Final Technical Report
For the Period 6 June 2005 to 29 April 2013
EL 22707 Arrla Bay 3
SD5301 Alligator River,
Northern Territory**

Exploration Report No. 29471

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pU13_002	Geology	1:130 000
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Appendix 1	2012 Surface Sampling Geochemistry
Appendix 2	2006 Aircore Drilling Data
Appendix 3	2006 Stream Sediment Geochemistry

1. SUMMARY

EL22707 is located approximately 35km northeast of Oenpelli in north-west Arnhem Land and is consequently processed under the Aboriginal Land Rights Act 1975 (ALRA).

Tertiary cover extends over most of the tenement area with lateritised Cretaceous sediments covering outcropping basement of the Nimbuwah complex which consists of gneiss, migmatites and tonalitic granites.

The Geoscience Australia (GA) multi-client EM survey was completed and data returned to the clients. The survey highlighted the potential for possible unconformity style mineralisation under cover within EL22707. This formed the basis for a helicopter reconnaissance programme completed over the three parts of the tenement to identify uranium anomalism in 2012. This was done by taking, outcrop rock chip samples, stream sediments and soil samples. Results were analysed found no evidence of any anomalies.

2. CONCLUSIONS AND RECOMMENDATIONS

The tenement was originally considered prospective for lateritic bauxite, however the drilling conducted in the 2007 dry season greatly downgraded the potential and returned generally negative results for bauxite and diamonds.

Results from the helicopter supported sampling program in May 2012 did not identify any uranium anomalies and as such the tenement has been surrendered.

3. INTRODUCTION

EL22707 (Arrla Bay 3) was part of the Arrla Bay Project which consisted of four granted Exploration Licences (EL) 22744, 22708, 24657 and 22707 that were applied for in 2000 by Rio Tinto Exploration Pty Ltd (RTX). A further four applications EL 23972 Arrla Bay 5, EL 27156 Arrla Bay 5a, EL 27157 Arrla Bay 5b and E L24108 Arrla Bay 6 were granted in June 2009 leaving 2 applications within the grant process forming the remainder of the project. EL22707 is located approximately 35km northeast of Oenpelli in north-west Arnhem Land (plan pU13_001) and is consequently processed under the Aboriginal Land Rights Act 1975 (ALRA).

In 2011 all granted tenements except for EL22707 were surrendered and EL22707 was partially surrendered with the number of sub-blocks being reduced from 87 to 44.

Table 1: Tenement Details

Tenement No.	Tenement Name	Ownership	Application Date	Grant Date	Blocks Granted	Current Blocks
EL22707	Arrla Bay 3	Rio Tinto Exploration Pty Limited	10/7/2000	06/06/2005	87	44

4. GEOMORPHOLOGY

The tenement is situated in low undulating terrain called “*sandy plains*” (Needham, 1984) that has a range of elevations from sea level to approximately 150m. The two main topographic features of interest are Cooper Creek and King River. Cooper Creek flows west out to the Timor Sea and drains the western margins of the tenement and the King River drains the northern margin of the tenement and flows into the Arafura Sea.

5. GEOLOGY

The tenement area is mostly covered by Tertiary cover with some outcropping lateritic weathered Cretaceous sediments. The Cretaceous units have been mapped and 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 to the protore sediments upon which the Gove bauxite deposit has formed.

Also within the tenement are varying amounts of sub-cropping basement consisting mostly of Archaean to Paleo-Proterozoic tonalitic granites, gneiss, migmatites and dolerites of the Nimbuwah Complex (see plan pU13_002).

The tenements are within the East Alligator River uranium province.

6. GEOPHYSICS

Airborne magnetic and radiometric data are available across the tenement. 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, respectively. Cameco Pty Ltd (Cameco) has also flown airborne surveys over parts of the tenement. Radiometric response within the tenement is poor with only a low grade response in the southern margin.

In 2007 GA (Geoscience Australia) proposed and commissioned a wide spaced regional airborne EM survey, known as the Pine Creek (Kombolgie) Project area. Final data from this EM survey has been received. The final data highlights a significant conductor dipping to the west which in the regional context is the contact of the basement Nimbuwah Complex, and was thought to have the potential to host unconformity style mineralisation within the southern margin of EL22707.

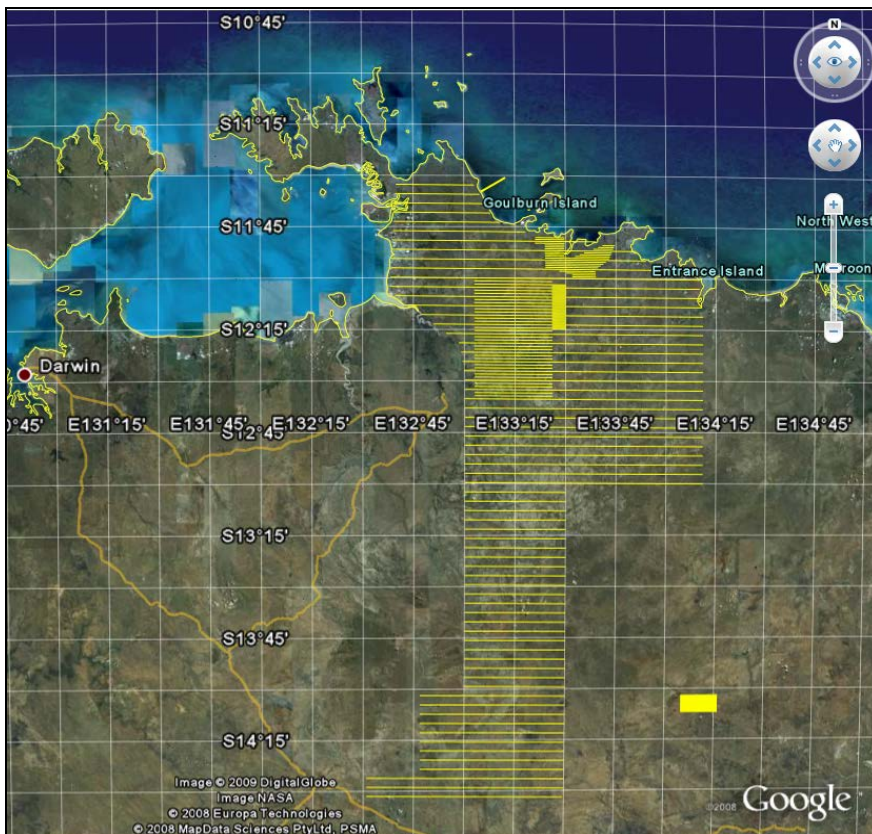


Figure 1 - Total survey description that includes the RTX infill lines (taken from Contractor preliminary logistics report)

7. PREVIOUS EXPLORATION

Bauxite exploration in the region was conducted in the late 1950's to early 1970's, work 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.

EL22707 (Arrla Bay 3) has been explored primarily for uranium. Tenements EL 734 and EL 5890 were explored by Cameco using airborne geophysics and ground sampling techniques such as RAB drilling and stream sediment sampling. The tenements were relinquished in 1999 as no significant mineralisation was identified.

RTX conducted wide spaced aircore drilling in the 2006 field season for bauxite exploration. This data is reported in RTX 27967.

A review of the previously reported data and interpretation of the EM data from GA allowed RTX to discriminate the area of potential for unconformity-style uranium deposits. These three areas are the remaining parts of the tenement after a partial surrender. This is reported in RTX 28981.

A helicopter reconnaissance programme was completed over the three parts of the tenement to identify uranium anomalism in May 2012. This was done by taking stream sediments, rock chip and soil samples. This reconnaissance program collected 428 samples including:

- 372 Soil samples (see plan U13_003)
- 27 Rock Chip samples (see plan U13_004)
- 26 Stream Sediment samples (see plan U13_005)

The target areas for sample collection were based upon the anomaly identified in the GA EM survey which is from zero to 100 metres depth below surface.

These samples were sent for a full Rare Earth Analysis suite.

8. EXPLORATION COMPLETED DURING REPORTING PERIOD

During the eighth reporting period the results from the 2012 dry season surface sampling program were analysed for potential uranium anomalies (see Appendix 1 – Surface sample results). The geochemical results were put into loGas with the resulting analysis shown below (Figure 2, Figure 3, Figure 4 and Figure 5). Geochemical analysis of samples collected in the 2012 dry season did not indicate a uranium anomaly (see Appendix 1 – Surface sample results).

Soil Sampling results

These results show that the highest Uranium value is only 2.3ppm and the localities of slightly anomalous uranium is scattered and do not indicate any large undercover anomalies as the higher U values do not cross over more than one line, nor are they across several adjacent sample sites on the one traverse line (Figure 3). The higher uranium values correspond with subcropping Nimbuwah complex granodiorites and Oenpelli dolerites and indicates that the uranium is only background radiation from the granites (see plan pU13_003).

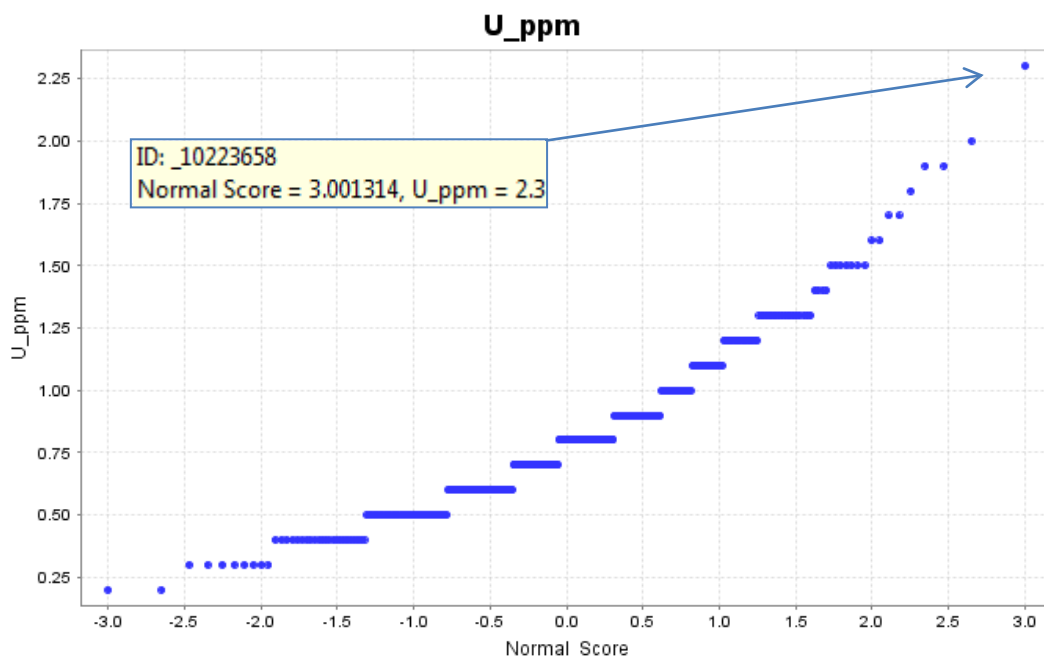


Figure 2 - Uranium results from 2012 soil sampling.

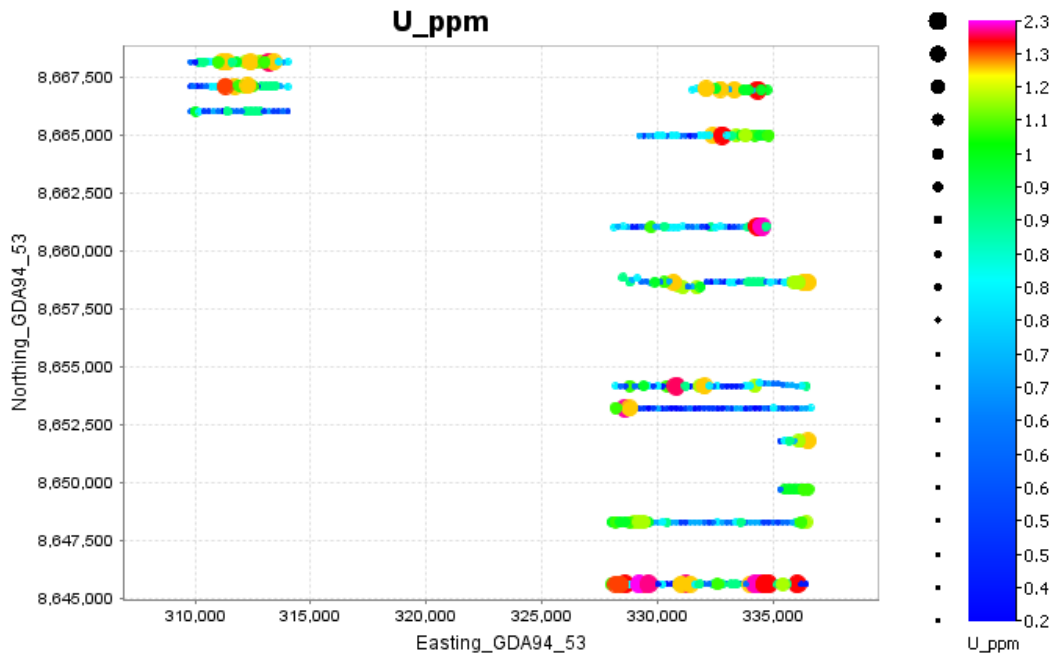


Figure 3 - Soil sampling lines with uranium results

Rock Chip Sampling results

Rock chip specimens collected returned low ppm U values with the highest value 4.9ppm U (Figure 4). This specimen was from the Nimbuwah Complex granite and displays background radiation results (see plan U13_004).

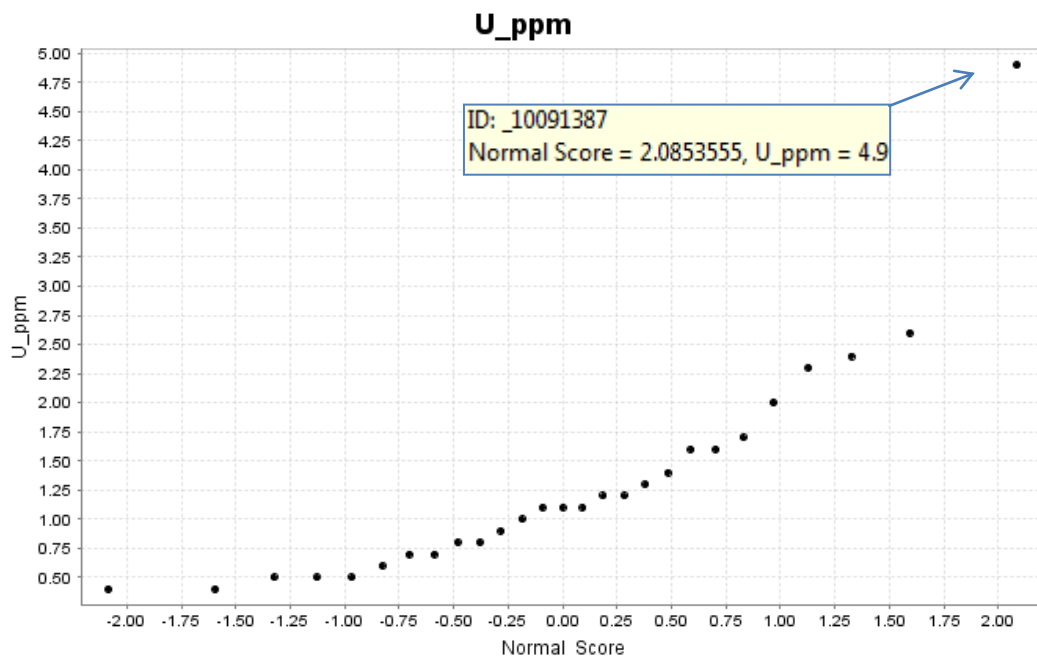


Figure 4 - Rock chip sampling U ppm results

Stream Sediment Sampling results

Stream sediment samples also returned low uranium values from geochemical analysis and did not indicate a uranium resource with the highest U value at 5 ppm (Figure 5). Plan pU13_005 shows the location of stream sediment U ppm results with respect to the geology. When compared to the soil sampling, there is no corresponding uranium response from the nearby sampling sites.

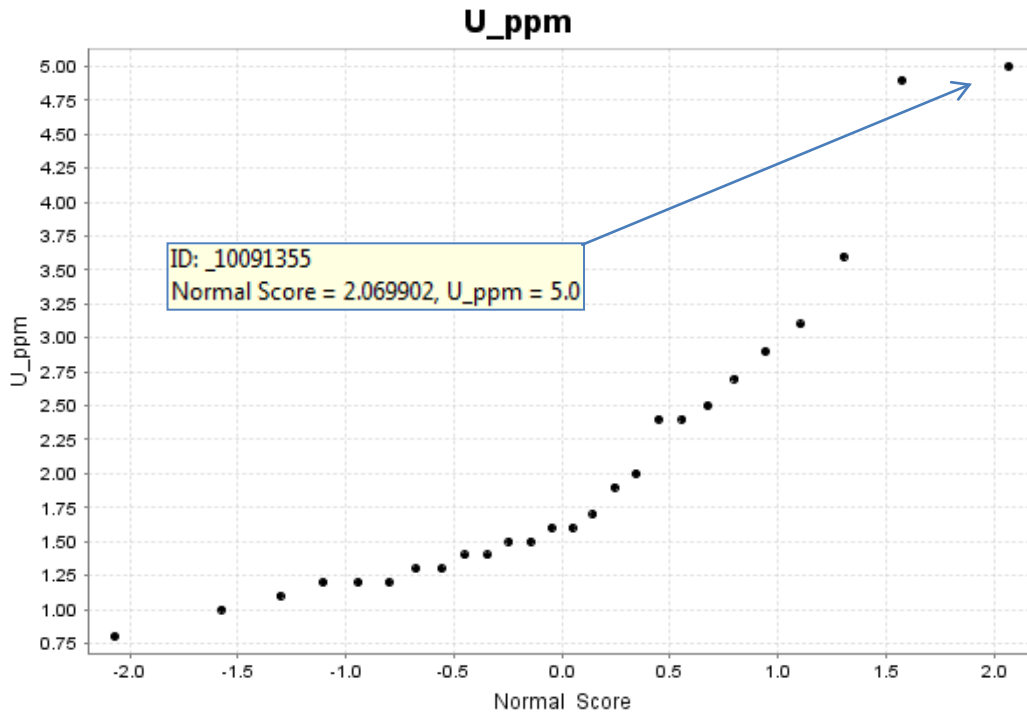


Figure 5 - Stream Sediment uranium results

9. ENVIRONMENT

No fieldwork was conducted in the eighth reporting period and all past rehabilitation has been reported separately from the technical report.

10. EXPLORATION EXPENDITURE

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

REFERENCES

Rix, P. 1965, 1 : 250 000 Geological Map Series Explanatory Notes. Milingimbi SD53-2 Northern Territory Geological Survey.

LOCALITY

Alligator River

SD5301

1:250 000

DESCRIPTOR

Eighth Annual & Final Technical Report for the Period 6 June 2005 to 29 April 2013, EL 22707 Arrla Bay 3, SD5301 Alligator River, Northern Territory located within the Arnhem Lands Aboriginal Land Trust, Northern Territory, Australia. Summary of all exploration activities and analysis of results from 2012 helicopter reconnaissance sampling program.

KEYWORDS

Alligator River, Uranium, Bauxite, Arrla Bay 3, Cretaceous laterite, Nimbuwah Complex, helicopter reconnaissance