Rio Tinto Exploration Pty. Limited
A.C.N. 000 057 125
A member of the Rio Tinto Group

EL 9669 Cox River
Annual Report for the Period 1\textsuperscript{st} November 2000 to 31\textsuperscript{st} October 2001

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Rio Tinto Exploration - Perth
Map Sheet: Mount Young (SD5315)

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Accepted by: ..............................................................

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Exploration Report No.25003
ABSTRACT

This report details exploration activity carried out by Rio Tinto Exploration over Exploration Licence 9669 during the period 1st November 2000 to 31st October 2001.

Exploration activities completed during the reporting period consisted of a review and prioritisation of all former Ashton exploration licences and applications within Northern Australia. This review concluded that EL 9669 be retained.

Chromite grains were recovered by Ashton loam samples during previous exploration on EL 9669. These chromites are sourced from a plateau with Cainozoic cover overlying Cambrian Bukalara Sandstone.

It is recommended that bulk gravel samples be collected from drainages on EL 9669. This work will attempt to recover diamonds and chromite grains. The chromites will then be characterised from microprobing, to determine whether they are of kimberlitic origin.
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1. INTRODUCTION

This report details exploration activity carried out by Rio Tinto Exploration over Exploration Licence 9669 during the period 1st November 2000 to 31st October 2001.

Exploration Licence 9669 is located on Nathan River pastoral lease approximately 195 km ENE of Daly Waters. The licence was granted to Ashton Mining on the 1st November 1996 for a period of six years. EL 9669 was reduced from 53 blocks to 27 blocks in 1999 and then to 14 blocks (46.3km²) during this reporting period.

Ashton Mining Ltd was taken over by Rio Tinto Limited in the 4th quarter of 2000.

2. CONCLUSIONS AND RECOMMENDATIONS

Chromite grains recovered by Ashton loam samples are sourced from a plateau with Cainozoic cover overlying Cambrian Bukalara Sandstone.

It is recommended that bulk gravel samples be collected from drainages on EL 9669. This work will attempt to recover diamonds and chromite grains. The chromites will then be characterised from microprobing, to determine whether they are of kimberlitic origin.

3. GEOLOGY

EL 9669 is located in the southeastern parts of the Mt Young 1:250,000 map sheet.

All mapped bedrock lithologies in EL 9669 are Cambrian Bukalara Sandstone. In the central parts of the tenement there is a plateau with extensive Cainozoic cover, consisting of sandy soils with minor ferricrete and pisolitic development.

Sediments within EL 9669 are only gently folded, with bed dips rarely exceeding 15°.

A north trending fault transects the area 2.5km to the east of EL9669. This structure cuts NeoProterozoic and older formations but not the Bukalara Sandstone.

4. PREVIOUS EXPLORATION

4.1. Previous exploration during current tenement

In the first year of tenure stream gravel and loam sampling was undertaken within EL 9669, with eleven samples collected. Six samples returned chromite positive results, with the best result (96030-001) reporting 24 grains.

In the second year of tenure eleven loam samples aimed to locate the point of entry of chromites into the drainage systems. No positive results were reported from this work.

A stream gravel sample was collected from upstream of the previous years best positive result. This sample (98108-001) contained 12 chromites and one picro, with several of the chromite grains classified as high priority on the basis of morphology.

A further sampling programme (one stream gravel sample and three loam samples)
was undertaken to follow-up positive samples 96030-001 and 98108-001 from the previous year. All three loam samples returned negative results. The gravel sample reported two chromite grains.

In the third year of tenure a reconnaissance loam grid was completed over an area suspected of sourcing the chromites. Thirty-six 100kg loam samples were collected on a 100m x 100m grid. All samples reported negative results for indicator minerals and diamonds.

Nick Lockett and Associates used Qasco 1:10,000 scale aerial photographs and available airborne magnetic data to complete a photo-geological study during the third year of tenure. No kimberlite targets were identified and no follow-up work was recommended from this study.

5. EXPLORATION COMPLETED DURING REPORTING PERIOD

Exploration activities completed during the reporting period consisted of a review and prioritisation of all former Ashton exploration licences and applications within Northern Australia. This review concluded that EL 9669 be retained.

It is recommended that bulk gravel samples be collected from drainages on EL 9669. This work will attempt to recover diamonds and chromite grains. The chromites will then be characterised from microprobing, to determine whether they are of kimberlitic origin.

6. EXPLORATION PROGRAM AND BUDGET FOR NEXT REPORTING PERIOD

Exploration on the Cox River tenements for the next reporting period will comprise:

?? Liaison Committee Meeting and work area clearance surveys
?? Track construction and camp establishment
?? Infill and follow-up stream and loam sampling
?? Follow-up bulk sampling

This program is estimated to cost approximately $30,000

7. REHABILITATION

No surface disturbing activities were conducted on EL 9669 during the reporting period.

8. REFERENCES


9. KEYWORDS

Diamonds; Proterozoic; Roper Group; Bukalara Sandstone; Gravel Sampling

10. LOCALITY

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11. DESCRIPTOR

Geology and Sample Locations

Quaternary alluvium
Cambrian Bukalara sandstone
Roper Group

- 1996 - 1998 gravel sample location
- 1999 Loam grid

Kilometres

RIO TINTO EXPLORATION PTY. LIMITED

EL 9669

Geology and Sample Locations

Author: P. Walker  Refer: SD5315 Mt Young
Drawn: I. Hubbard  File Ref: NDIS/5
Date: 24-10-2001  Report No: 25003
Scale: 1:50 000  Plan No: Ntd 6944