



Rio Tinto Exploration Pty. Limited

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A member of the Rio Tinto Group

Annual Report
For the Period 6 January 2011 to 5 January 2012
EL 398 Slippery Creek –
SD5303 Arnhem Bay
Northern Territory

Exploration Report No. 29254

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LIST OF PLANS

Plan No.	Title	Scale
pAI10_005	Tenement location	1:400,000

1. SUMMARY

This is the second annual report for EL 398 (Slippy Creek).

Exploration Licence EL 398 (Slippy Creek) was granted on 06/01/2010 under the name Rio Tinto Exploration Pty. Limited. This tenement was originally applied for by BHP on the 24th January 1972 covering an area of 1240.8km² and has been in moratorium since that date.

EL 398 was granted over an area of 127.8km² (or just over 10% of the original application area). The non consent area of the original application was split off into ELA 27873 and put into moratorium.

Rio Tinto Exploration has an agreement with BHP Billiton to conduct exploration for bauxite within NE Arnhem Land. As a condition of this agreement Rio Tinto became the tenement holder and operator upon grant however BHPB continues to have rights to explore for manganese.

The tenement is located approximately 100 km west of Nhulunbuy in north-east Arnhem Land and are processed under the Aboriginal Land Rights Act 1975 (ALRA).

Exploration completed during the reporting year was restricted to reviewing the previous exploration and assessing the potential for future activities within this limited area. No ground work was conducted.

2. INTRODUCTION

Exploration Licence EL 398 (Slippy Creek) was granted on 06/01/2010 under the name Rio Tinto Exploration Pty. Limited. This tenement was originally applied for by BHP on the 24th January 1972 covering an area of 1240.8 km² and has been in moratorium since that date. EL398 was granted over an area of 127.8km² (or just over 10% of the original application area). The non consent area of the original application was split off into ELA 27873 and put into moratorium.

Rio Tinto Exploration has an agreement with BHP Billiton to conduct exploration for bauxite within NE Arnhem Land. As a condition of this agreement Rio Tinto became the tenement holder and operator upon grant however BHPB continues to have rights to explore for manganese.

A meeting was held with the Traditional owners of EL398 in July 2011 to discuss the results of the previous field season.

3. LICENSE DETAILS

Exploration Licence EL 398 (Slippery Creek) was granted on 06/01/2010 under the name Rio Tinto Exploration Pty. Limited. This tenement was originally applied for by BHP on the 24th January 1972 covering an area of 1240.8 km² and has been in moratorium since that date. EL398 was granted over an area of 127.8km² (or just over 10% of the original application area). The non consent area of the original application was split off into ELA 27873 and put into moratorium. Both tenements reside within east Arnhem which is subject to the Aboriginal Land Rights Act 1975 (ALRA). Tenement details are listed in Table 1 below.

Table 1: Tenement Details

Tenement No.	Tenement Name	Ownership	Grant Date	Area Applied km ²	Area Granted km ²
EL398	Slippery Creek	Rio Tinto Exploration Pty Limited	06/01/2010	1240.8	128.8
EL27873	Slippery Creek 2	BHP Billiton Pty Ltd	moratorium		

4. PREVIOUS EXPLORATION

Previous exploration over this area has been undertaken in the past, however, of less detail than that of the most-easterly region of Arnhem Land. Within the original application area, BHP had previously drilled 10 holes, of which 3 holes are in EL 398. Of these three holes which were drilled to depths ranging from 19 to 62m, no geochemical assays are recorded. No further work has been conducted in the area since the late 1960's.

Table 2: Previous Exploration Summary

Year	Company	Tenement	Exploration Completed
1960-1970	BHP Ltd	ATP1138	Manganese and bauxite reconnaissance exploration. Ten holes completed in original application area, of which three reside in the granted EL 398.
2010	RTX	EL398	Auger and rock sampling

5. GEOLOGY

Geology of the Slippery Creek area comprises of a sequence of sandstones and claystones belonging to the Walker River Formation (Middle Cretaceous) and the younger Yirrkala Formation (Upper Cretaceous) (Refer to SD5304 – Gove Special GSNT Geology Map). Proterozoic basement occurs in the west of the tenement.

During the Tertiary period, the region underwent extensive lateritisation resulting in bauxite development such as that seen at Gove. The known bauxite was formed on the Yirrkala Formation, however other protoses may be able to form bauxite. The Cretaceous sediments are overlain in places by Quaternary alluvials.

While many occurrences of bauxite have been recorded in the east Arnhem area, large, economic deposits outside the general vicinity of the Gove mine site, have not been delineated.

6. GEOMORPHOLOGY

The bulk of the area within tenement (EL398) consists of a low flat surface (~45m RL) that grades into drainage channels leading to low-swamp areas (~25m RL) in the north-eastern corner of the tenement. To the south-west of the tenement, Proterozoic rocks form relatively high, hard ranges with steep gradient.

7. GEOPHYSICS

The project area is covered by a regional scale aeromagnetic survey flown for the NTGS in 1990-92 (Rawlings et al., 1997). The radiometric data can be used to help distinguish the laterite-covered areas from those of both basement and Quaternary sand cover. This method does not distinguish between bauxitic and non-bauxitic laterite.

Digital terrain data has been acquired and processed to assess areas for plateaus that may be prospective for bauxite. The Slippery Creek area contains a slightly elevated area that is

interpreted as a remnant lateritic surface. This area is defined by an elevated thorium response in the regional geophysics (see figure pAI07_004).

8. ENVIRONMENT/COMMUNITY

Discussions were held with the Traditional Owners at Gapuwiyak, in July 2011 to discuss the previous year's work.

9. EXPLORATION COMPLETED DURING REPORTING PERIOD

No ground work was completed during the reporting period.

- Land owner negotiations

BHPB have access to the tenement to conduct concurrent exploration activities for manganese. During the reporting period, BHPB submitted a proposal to the NLC and conducted landowner surveys however no ground work was completed.

10. EXPLORATION EXPENDITURE

The details of exploration expenditure for EL 398 by RTX combined with the expenditure of BHP Billiton for the same period, is presented separately in the Annual Expenditure Report.

11. PROPOSED EXPLORATION

No further exploration for bauxite is planned for EL 398. It is recommended that EL 27873 be retained for future exploration.

12. CONCLUSIONS AND RECOMMENDATIONS

A review of results from the initial field season in 2010 indicates that EL398 has limited to no remaining potential for bauxite. The potential for manganese is also limited. The area (ELA27873) which was split out from the original application remains of interest.

REFERENCES

Blake, J. 2010, Annual Report For Period Ending 5 January, 2011, EL 398 Slippery Creek. Report Number 28914.

Blake, J. & Hartshorn., G., 2010, Combined Annual Report For Period Ending 14 September , 2010, EL 4170 Cato Plateau & EL 4171 Cato River 'Cato Project', Gove SD5304, Northern Territory. RTX Report Number 28823.

Chestnut W., Gunn, M. and McGregor, P., BHP Pty Ltd., 1968. Report on Exploration Within AP1138, Eastern Arnhem Land. Northern Territory Department of Mines and Energy, Open File Company Report CR1968-0011.

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Ferenczi P.A., 2001, Iron Ore, Manganese and Bauxite Deposits of the Northern Territory. Northern Territory Geological Survey Report No. 13.

Rawlings, D.J., 1997, 1:250 000 Geological Map. Explanatory Notes. Arnhem Bay Gove SD5303-04, Northern Territory Geological Survey.

LOCALITY

Arnhem Bay

SD5303

1:250 000

LIST OF DPOS

DPO (Work Order)	No. Sample	Sample Range	Laboratory

DESCRIPTOR

Annual Report for the Period 6 January 2011 to 5 January 2012, EL 398 Slippery Creek SD5303 Arnhem Bay, Northern Territory located within the Arnhem Lands Aboriginal Land Trust, Northern Territory, Australia. Exploration activities consisted reviewing previous results and discussions with Landowners.

KEYWORDS

Slippery Creek, Arnhem Bay, bauxite, Cretaceous, laterite