



Rio Tinto Exploration Pty. Limited

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A member of the Rio Tinto Group

Partial Surrender Report,
for the Period Ending 19th September 2005
EL 1924 Cape Ford
Australian Bauxite Project,
Northern Territory.

Exploration Report No. 27517

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WAp46444	EL 1924 Partial Relinquishment Location Plan	1:250 000
WAp46412	Drill Hole Location Plan	1:50,000
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1. **SUMMARY**

EL 1924 Cape Ford was applied for by Ashton Mining Limited and Ashton Operations Australia Limited ("Ashton") on 8th September 1978 and was granted on 28th July 2003. The tenement is located 150 km south southwest of Darwin on the Daly River / Port Keats Aboriginal Land Trust and consequently is processed under the Aboriginal Land Rights Act 1975 (ALRA).

This partial surrender report describes the exploration completed up to the 19th of September 2005. This is the first relinquishment with a total of 151 sub blocks relinquished and 94 sub blocks retained.

The project area covers part of Palaeozoic Bonaparte Basin which is potentially lateritized and prospective for bauxite.

Exploration was focused at locating bauxite on the large flat area of the Dashwood Plains and included:

- Review of previous exploration.
- Completion of consultation meetings and site clearance surveys.
- Interpretation of existing TM data.
- Establishment of an exploration camp.
- Clearing access for a small drill.
- Drilling 12 auger holes.
- Drilling 14 NQ aircore holes.

The results show that there has been no enrichment of alumina in the patchy laterite and this has downgraded any possibility of bauxite occurring on the Dashwood Plains. An area in the east of the tenement has not been assessed and a limited programme is planned for year 3.

2. **CONCLUSIONS AND RECOMMENDATIONS**

Drilling with an aircore drill to a depth of 24m has been completed at the Dashwood Plains within EL1924 and has shown there is no potential for bauxite in this area.

The drilling showed that there is patchy laterite developed under a soil and clay layer. In most locations the material under the soil and clay is unconsolidated oxidised sand, which is

weathered from the underlying quartz sandstone. The sandstone is probably Permian in age and is too quartz rich to allow the development of bauxite within the laterite profile.

3. INTRODUCTION

This tenement was applied for by Ashton Mining Limited and Ashton Operations Australia Limited (“Ashton”) on 8th of September 1978. This tenement formed part of a contiguous block of applications centered approximately 200 km south west of Darwin on the Daly River / Port Keats Aboriginal Land Trust and consequently are processed under the Aboriginal Land Rights Act 1975 (ALRA).

The tenements were granted to Ashton on 28th July 2003. Ashton was acquired by Rio Tinto (RTE) in late 2000. This partial surrender on the 19th of September covers 151 sub blocks with the retained area covering 94 sub blocks on the eastern edge of the original area. Tenement details are included in Table 1 below. The relinquished area is shown on Plan WAp46444.

All exploration was completed in accordance with a DBIRD lodged and approved Mine Management Plan (Lilley and Hartshorn 2004). There was no work completed in year 1 due to access negotiations.

Table 1: Tenement Details

Tenement No.	Tenement Name	Owner /ship	Application Date	Grant Date	No. Blocks Applied	No Blocks Granted	No Blocks Current
EL1924	Cape Ford	Ashton Mining Limited	8/09/1978	8/09/1978	250	250	250

4. PREVIOUS EXPLORATION

Minimal previous exploration has been conducted within the project area. A search of previous tenement history shows that there has not been any mineral licenses held over the area of EL1924. There has been exploration for petroleum with a seismic shot line across the Dashwood Plains area and exploration for coal immediately south of the tenement area.

Table 2: Previous Exploration Summary

Year	Company	Tenement	Exploration Completed
1968	Aquitane	?	Seismic traverse
1971	Utah Development Company	CL 173	Coal exploration – 18 holes on three traverses (CR1973-0082)

5. GEOMORPHOLOGY

The geomorphology of the project area may be divided into four divisions: Lateritised mesa surfaces, escarpments, alluvial lowlands and flood plains (Edgoose, C.J., et al, 1989).

The lateritised mesa surface has developed on a thin sheet of Cretaceous sedimentary rocks. This sheet was once very extensive but is now reduced to isolated plateau and outlying remnant mesas. A thicker soil profile (than on other units) developed on this surface supports a tall, dense eucalypt forest.

The mesa escarpments, uplands and dissected hills form the ground between the mesa surfaces and lowlands. The escarpments form the flanks of mesa and usually consist of a small scarp topping a steep, talus-strewn slope. The lowlands are characterised by open woodland and perennial grasses.

The floodplains are extensively developed in the western half of the project area. The plains remain wet well into the dry season and are vegetated by swamp grasses and stands of Melaleuca. Extensive mud flat are also present adjacent to the Docherty creek and the Joseph Bonaparte Gulf.

The area of interest for bauxite exploration is the Dashwood Plains, which forms a large (300 km²) elevated (30 – 50m) subtle plateau. The area does not have any creeks dissecting it and is covered by tall eucalypt trees.

6. GEOLOGY

The geological description below is dominantly taken from Edgoose et al 1989 and Mendum 1972.

The project area is underlain by sediments of the Palaeozoic Bonaparte Basin.

Within the tenement area there is only minor outcrop that is limited to the Mt Greenwood hill in the far southeast. The units at Mt Greenwood have been described as both Permian (Mendum 1972) and later as part of the overlying Cretaceous sequence by Edgoose Et al. 1989. The

lithologies exposed consist of feldspathic quartz arenites and claystones. The underlying Permian sequence is described as arkosic arenites (Edgoose et Al. 1989).

The Cretaceous sequence is heavily lateritised and is a remnant of the Tertiary Tennant Creek Surface.

The mapping at 1:250,000 scale (Mendum 1972) describes the Dashwood Plains area as being Cainozoic soil overlying Permian sediments. Quaternary alluvium covers much of the low-lying areas and forms black soil plains.

The dominant structural feature of the area is that of gently westerly dipping sequences as revealed in the seismic data.

7. GEOPHYSICS

The project area is covered by a regional scale aeromagnetic survey flown east west at 500m line spacing (100 m elevation) in 1994 by AGSO (Medusa Banks, Port Keats, Survey).

Digital terrain data has been acquired and processed to assess areas for plateaus that may be prospective for bauxite. The Dashwood Plains form a subtle but distinct elevated region (see Plan WAp46422).

8. EXPLORATION COMPLETED

Exploration completed within the relinquished area included:

- Review of previous exploration.
- Completion of consultation meetings and site clearance surveys.
- Interpretation of existing TM data.
- Establishment of an exploration camp.
- Clearing access for a small drill.
- Drilling 12 auger holes
- Drilling 14 NQ aircore holes.

8.1 Auger Drilling

A total of 12 auger holes were drilled within the main target area on the Dashwood Plain. The holes were drilled using an RTE owned Edson auger rig mounted on a Toyota 4 wheel drive. The auger holes were drilled on an E-W and N-S line across the main prospective area at approximately 1 km spacing (see plan WAp46412 for locations). Other planned E-W lines approved by the Traditional Owners were not drilled.

The auger uses spiral auger flights that are 8 cm in diameter. Sampling was done on a 1m interval. The auger would drill the 1 metre interval and then the hole would be cleared with the material forming a cone around the top of the hole. A segment of the cone weighing about 2 kg was sampled for assay. The remaining material would be cleared and returned down the hole upon completion. The quality of the auger sample is reasonable however at depth there could be some contamination.

The auger is used to test the weathered profile with any positive results needing to be redrilled with a more accurate sampling method.

The auger drill holes varied in depth from 4.5m to 18m with an average of 8.1m for the 12 holes. The auger could not penetrate through the compact brown clay in some areas along the N-S base line.

8.2 Aircore drilling

Wallis Drilling Pty Ltd using a small aircore rig mounted on a Toyota 4 wheel drive, drilled 14 aircore holes totalling 246m within the target area. The drilling used NQ aircore rods and provided a sample approximately 35mm in diameter. The sample interval was 1 metre with a rotary splitter attached to the cyclone used to collect the sample.

The drilling was conducted on the same two cleared lines as the auger (see plan WAP46412 for locations) drilling. The aircore drilling was conducted because of the inability of the auger to penetrate the compact clay on the N-S drill line. The extra planned E-W traverses were not drilled because of the negative results from the initial work.

The aircore drill holes are spaced approximately 1 km apart and were surveyed by hand held GPS. The holes were to a minimum of 11m depth and maximum of 24m with an average of the 14 holes of 17.5m depth.

Both the aircore and auger drill hole samples were sent to Ultratrace Analytical Laboratories in Perth for analysis by XRF for elements relevant to bauxite exploration (see table 3 for details). Field duplicates were taken every 20 samples and internal RTE bauxite standard submitted every 50 samples. The duplicate samples show adequate repeatability (see appendix 3).

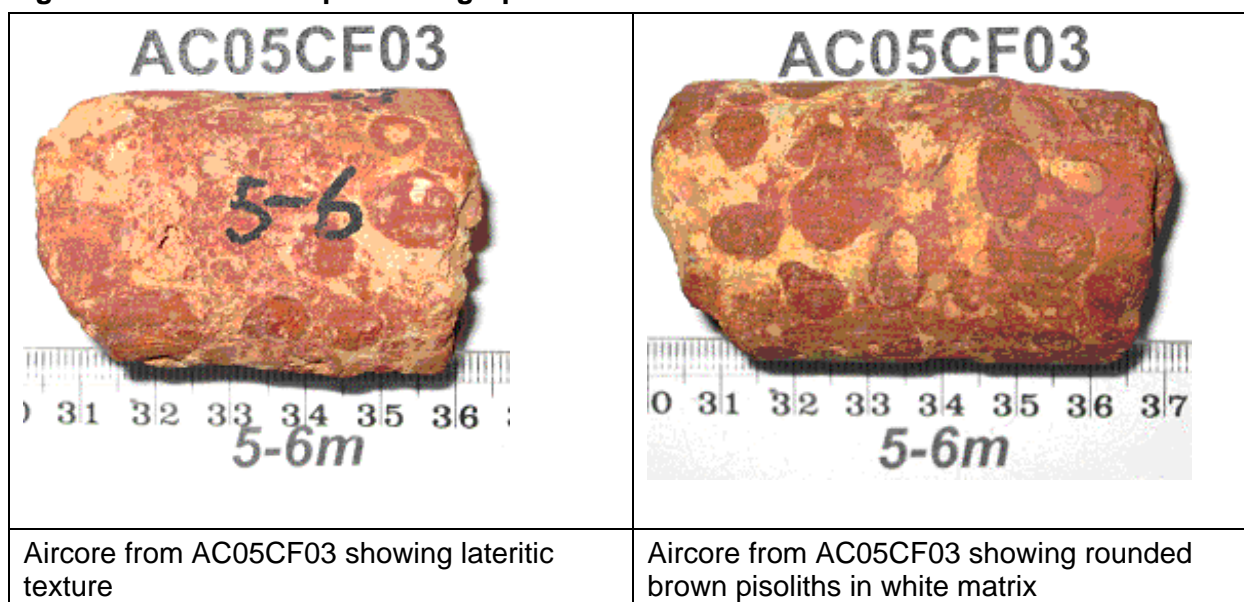
The results of both the auger and aircore drilling show low alumina values with a maximum of 22.8% Al₂O₃ with 15 samples over 20% Al₂O₃. The iron values show a maximum of 66% Fe₂O₃ in one ferruginous lateritic gravel at 3m depth in hole AC05CF14. In general the assays are very high in SiO₂ (>65%) reflecting the quartz rich nature of the protore sandstone.

Table 3: Summary of drilled profile

Type	Thickness	Typical assay
Soil	0- 2m	12% Al ₂ O ₃ 75%SiO ₂ 5%Fe ₂ O ₃
Ferruginous gravel	1-2m	14% Al ₂ O ₃ 30% SiO ₂ 45%Fe ₂ O ₃
Clay	2 - 10m	20% Al ₂ O ₃ 65%SiO ₂ 7%Fe ₂ O ₃
Laterite (duricrust)	1-2.5m	12% Al ₂ O ₃ 75%SiO ₂ 7%Fe ₂ O ₃
Sand	2-10m	6% Al ₂ O ₃ 85%SiO ₂ 4%Fe ₂ O ₃
Unweathered sandstone basement		

There is minor lateritic development in the profile. In drill hole AC05CF14 a ferruginous layer between 2 to 5m averaged 50% Fe₂O₃. This layer is also present in the hole AC05CF13 and is interpreted as a ferruginous gravel under the soil. In drill hole AC05CF03 (5-7m) a layer of hard duricrust occurs below the clay layer. The textures in the duricrust show a pisolitic form with brown pisoliths between 3mm and 1cm in size sitting in a hard white matrix. The pisoliths have very thin outer cutins (see figure 1). The assay result for this interval does not suggest that there has been any gibbsite or boehmite precipitation. The interval (5-6m) assays 11.8% Al₂O₃, 7.4% Fe₂O₃ and 74.6% SiO₂ which is less aluminous than the overlying clay.

The basement protore intersected in most holes is weathered quartz sandstone with lesser micaceous siltstone and minor kaolinitic mudstone.

Figure 1: Aircore Sample Photographs**Table 4: Analytical Details**

Element	Digest	Method	Units	Det_limit
Al ₂ O ₃	XRF Fused bead	XRF bauxite suite	%	0.01
CaO	XRF Fused bead	XRF bauxite suite	%	0.01
Fe ₂ O ₃	XRF Fused bead	XRF bauxite suite	%	0.01
K ₂ O	XRF Fused bead	XRF bauxite suite	%	0.01
MgO	XRF Fused bead	XRF bauxite suite	%	0.01
MnO	XRF Fused bead	XRF bauxite suite	%	0.01
Na ₂ O	XRF Fused bead	XRF bauxite suite	%	0.01
P ₂ O ₅	XRF Fused bead	XRF bauxite suite	%	0.001
SiO ₂	XRF Fused bead	XRF bauxite suite	%	0.01
SO ₃	XRF Fused bead	XRF bauxite suite	%	0.01
TiO ₂	XRF Fused bead	XRF bauxite suite	%	0.01
V ₂ O ₅	XRF Fused bead	XRF bauxite suite	%	0.001
ZrO ₂	XRF Fused bead	XRF bauxite suite	%	0.01
LOI	Thermo-gravimetric	bauxite suite	%	0.01

8.3 TM Data Interpretation and digital terrain data

Thematic Mapper and digital terrain data sets used to define the size of the potential bauxite target area (see plan WAp46422). The Dashwood Plain formed a discrete but subtle elevated plateau with smooth edges and no breakaways or cliffs. The target area was mapped as approximately 360 km² of which about half lay within EL 1924.

9. ENVIRONMENT

All exploration was completed in accordance with a DBIRD lodged and approved Mine Management Plan.

Access to RTE's exploration camp was via existing tracks and roads. The camp was sited in an area of existing disturbance and did not additionally impact on the environment. The access from the camp to the drill sites was by clearing the vegetation with minimal disturbance to the top soil using a wheel loader operated by the community contractor. All drill holes were backfilled with excess sample and dirt immediately after drilling.

10. PROPOSED EXPLORATION

The retained blocks occupy the eastern part of the original tenement area. There is potential for bauxite in the northeast corner of the retained area. To conduct a field inspection and possibly auger drill the profile a work clearance meeting with the Traditional landowners will be required.

REFERENCES

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1989 Northern Territory Geological Survey
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2004 SD5207, Northern Territory. RTE Report Number 26460.
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Gulf Basin, NT. CR 1973-0082.

LOCALITY

Cape Scott

SD 5207

1:250 000

LIST OF DPO'S

DPO	No. Sample	Sample Range	Laboratory
206522	92	6022282 – 6022373	Ultratrace Analytical Laboratories, Perth
206523	261	6022373 – 6022600 6086978 – 6087000 6145401 - 6145411	Ultratrace Analytical Laboratories, Perth

DESCRIPTOR

Partial Surrender Report for the period Ending 19 September 2005, EL 1924 Cape Ford, Australia Bauxite Project, Northern Territory, located within the Daly River / Port Keats Aboriginal Land Trust, Northern Territory, Australia. Bauxite exploration activities consisted of drilling 12 auger holes and 14 aircore holes on the Dashwood Plain area. The results were negative.

KEYWORDS

Cape Scott, bauxite, Auger drilling, Aircore drilling, Cretaceous, Permian.

APPENDIX 1

Auger Drilling Data

EL1924_2005_A_02_drillcollars.txt

EL1924_2005_A_03_lithology.txt

EL1924_2005_A_04_downholegeochem.txt

APPENDIX 2

Aircore Drilling Data

EL1924_2005_A_05_drillcollars.txt

EL1924_2005_A_06_lithology.txt

EL1924_2005_A_07_downholegeochem.txt

APPENDIX 3

Cape Ford Assay Duplicates

Cape Ford Assay Duplicate Graphs.pdf