RIO TINTO

Rio Tinto Exploration Pty. Limited

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A member of the Rio Tinto Group

First Annual Report for the Period Ending 20 May 2003, EL 10044 Golf Tee, Victoria Diamond Programme, Wave Hill SE52-08 & Victoria River Downs SE52-04, Northern Territory, Australia

Exploration Report No. 26162

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Plan No.	Title	Scale
WAp45670	Tenement Location Plan	1:500 000

1 SUMMARY

EL 10044 Golf Tee is located in the north west corner of the Wave Hill SE 52-08 1:250,000 map sheets, 340 km south west of Katherine, western Northern Territory, Australia. EL 10044 was granted to Ashton Exploration Australia Pty Ltd on 21 May 2002. Ashton and the EL application were acquired by Rio Tinto Ltd in late 2000. The EL is one of a group of 21 contiguous granted EL's and EL applications held by Rio Tinto Exploration Pty Ltd (RTE) in the region and referred to as the Victoria Diamonds Project.

EL 10044 is located over Antrim Plateau Volcanics to the east of the poorly drained, lateritised "Limbunya plateau". Previous sampling within the area now covered by EL 10044 identified indicator minerals in drainage catchments sourced from within the EL. The source(s) of the microdiamonds and other indicator minerals remain enigmatic.

CRA Exploration and Ashton Mining had previously collected mainly gravel 71 sample sites exploring for diamonds in the east and south of the area now covered by EL 10044. Two samples returned microdiamonds, one sample returned kimberlitic olivine and numerous samples returned chromite. The results of the previous sampling suggests that there are no exposed diamond-bea kimberlites within EL 10044. The northwest half of the EL remains largely untested with sampling.

Cambrian basalts traversed by NW-SE and NNW-SSE trending fracture lineaments dominate the geology of EL 10044. Geophysical lineaments also display a strong NW-SE trend and define the margin of the Cambrian basalts.

During the current reporting period RTE assessed available geomorphological, geological, geophysical and historical sampling datasets for EL 10044. No field-based exploration was carried out. RTE identified potential target areas for the indicator mineral occurrences and developed various models that might explain their geographic and geological source(s). As no advanced kimberlitic targets were identified it was decided that EL 10044 should be divested along with neighbouring tenement of the Victoria Diamond Project. During the reporting year exploration data was packaged and presented to interested parties. At the time of writing this report the divestment was being finalised with one of these parties.

2 CONCLUSIONS AND RECOMMENDATIONS

- A review of available geomorphological, geological, geophysical and sampling datasets indicates that EL 10044 is prospective for kimberlitic intrusions.
- Historical indicator mineral sampling of the area encompassed by EL 10044 was confined to the south and east. A large area in the north west of the EL remains to be sampled for kimberlitic indicator minerals.
- The present distribution of indicator minerals within the EL suggests that they have a primary or secondary source from within the EL boundary.
- Historical sampling results suggest that it is unlikely that a major, outcropping diamond-bearing kimberlitic diatreme(s) exists within the area tested by sampling. A kimberlitic olivine occurrence along with some microdiamond occurrences does, however, provide encouragement.
- Microdiamond occurrences in the region might be derived from a variety of secondary sources related to the geomorphological evolution of the region.
- Many of the chromite occurrences within EL 10044 are probably sourced from the Cambrian basalts but this requires confirmation.
- Drainage sampling is suitable in the area as it is reasonably well drained.
- Detailed airborne and ground geophysics, in particular EM and gravity would be an effective diamond exploration strategy for much of the EL. The black soils might be a problem to EM.
- There are no advanced kimberlitic targets of interest to RTE within the EL.
- EL 10044 is being divested along with its neighbouring tenements comprising RTE's Victoria Diamonds Project.

3 INTRODUCTION

EL 10044 Golf Tee is located in the north west corner of the Wave Hill SE 52-08 1:250,000 map sheet, 340 km south west of Katherine, western Northern Territory, Australia (Plan WAp45670). Access is via the Victoria and Buchanan highways then via the road heading north from Kalkarindji, which passes through the EL. Station tracks provide access to all other areas.

The EL is located not far to the north of the Daguragu Aboriginal Freehold Land.

EL 10044 was granted to Ashton Exploration Australia Pty Ltd on 21 May 2002. Ashton and the EL application were acquired by Rio Tinto Ltd in late 2000. The EL is one of a group of 21

contiguous granted EL's and EL applications held by Rio Tinto Exploration Pty Ltd (RTE) in the region and referred to as the Victoria Diamonds Project.

Previous exploration in the region had been focused on diamonds and base metals. Widely scattered, minor base metal (mainly copper) and barite occurrences are known within the Birrindudu and Victoria basins. The nearest diamond-bearing kimberlite/lamproite occurrences are Argyle (AK1) and Timber Creek, 250 km to the WNW and 160 km to the north, respectively. Previous regional reconnaissance exploration for diamonds on the Wave Hill SE 52-08 and neighbouring 1:250,000 map sheets had located clusters of surficial macro and microdiamonds and other indicator mineral occurrences but the source of these remains enigmatic.

The area encompassed by EL 10044 has received limited previous exploration. Work completed includes reconnaissance and infill sampling for diamonds. Two samples in the south of the EL and one sample in the north returned indicator minerals.

During 2002 RTE reviewed the Victoria Diamonds Project. The review resulted in the decision to divest the area. Negotiations with an interested company were being finalised during the first half of 2003.

4 LICENCE DETAILS

Table 1: Tenement Details

Name	Tenement No.	Application Date	Grant Date	Sub-Blocks	Area (km^2)
Golf Tee	EL 10044		21/05/2002		1038

5 PREVIOUS EXPLORATION

Geopeko (which became North Mining) explored for base metals in the Limbunya region during the early 1990's. Some distance to the west of EL 10044, drilling in the vicinity of the Limbunya Fault produced some weakly anomalous base metal values associated with various sedimentary units aged around 1640Ma. Not far to the west of the area now covered by EL 10044, CRA Exploration drilled a diamond drill hole (DD90VRB01) in 1990 to assess the basin's stratigraphic units for base metal mineralisation. The assessment did not provide sufficient encouragement to pursue the project further.

CRA Exploration had previously collected gravel samples from 11 sample sites mainly in the east of the EL. Six of the samples returned chromite from adjacent drainage catchments in the east of the EL.

Ashton Mining also collected mainly gravel samples from 60 sites from the area now covered by EL 10044 during several previous diamond exploration campaigns in the region. Ashton's sampling was concentrated along drainage catchments in the south and east of the EL at a density varying anywhere from 5-50 km^2. Eight sample sites returned indicator minerals including two sites with diamonds, one site with kimberlitic olivine and the remainder with chromite.

The sampling by CRA Exploration and Ashton Mining was focused in the east and south of the EL. There remains a large area in the north west of the EL that has not been adequately tested with sampling. The previous sampling identified clusters of indicator minerals, including microdiamonds, kimberlitic olivine and chromite, in the east and south of the EL. Many of the chromite grains are probably sourced from the Cambrian basalts but the source of the microdiamonds and the kimberlitic olivine remains enigmatic. The kimberlitic olivine is of particular interest as it is unlikely to derive from a secondary source.

6 GEOMORPHOLOGY

A review by RTE of the patterns of drainage, topography, regolith and geology indicates that there are two dominant geomorphological domains in the Limbunya and Wave Hill region:

1. A poorly drained Cretaceous-Tertiary plateau capped by lateritic duricrust overlying mainly Proterozoic sediments but also Cambrian rocks.

2. Dissected and exposed lowlands associated mainly with well-drained Cambrian rocks that form a "bench and plain" geomorphological domain.

A large, poorly drained, lateritised plateau ("Limbunya plateau"), about 50 km wide, extends NE-SW across the Limbunya SE 52-07 1:250,000 map sheet to the west. The Limbunya plateau represents a major drainage divide in the region. The Limbunya plateau displays a close, but not exclusive, spatial relationship with the distribution of Proterozoic sediments on the Limbunya 1:250,000 map sheet. In effect, it obscures most of the Proterozoic sedimentary stratigraphy on the map sheet. Microdiamonds and other indicator minerals occur in lateritic soils on the plateau and in alluvium of creeks traversing the plateau, however, their source remains enigmatic.

EL 10044 is located immediately to the east of the Limbunya plateau. The broad drainage patterns of EL 10044 are, essentially, draining away from the plateau and feed into the large Victoria River system. However, most of the drainages within EL 10044 are not sourced from the plateau but are actually sourced from localised drainage divides contained within the EL.

Consequently, none of the drainage indicator mineral occurrences within EL 10044 can be directly attributed to drainage derived from the Limbunya plateau where microdiamonds and indicator minerals are widespread. The distribution of the indicator mineral occurrences within the EL 10044 suggests multiple geographic sources from within the EL. There are four major drainage catchments within the EL, defining geomorphological sub-domains, and indicator minerals are found in the three that have been sampled. The source area for all four major drainage catchments is a single set of hills in the south of the EL. The distribution of indicator minerals within the catchments suggest that it is unlikely that these hills represent the sole source of indicator minerals within the EL but it is an area of interest.

Most of EL 10044 is characterised by the "bench and plain" geomorphology that is characteristic of the Cambrian basaltic terrain in the region. Black soils and sands are preferentially developed at a slightly lower topographic levels on, and adjacent to, the lateritised Limbunya plateau. The black soils are localised to certain areas of the EL and obscure the underlying bedrock. Large areas of black soils are developed marginal to the Limbunya plateau in areas where the drainage becomes better developed. The enigmatic black soils are generally located in the upper reaches of drainage catchments and in some instances they are located close to, or on the tops of ridges. The black soils appear to have a preference for drainage catchment source areas at both local and regional scales. They may be a source of secondary indicator minerals.

The Limbunya plateau may have once served as a major Cretaceous-early Tertiary palaeodrainage valley that preferentially eroded (but not exclusively) the anticline of Proterozoic sediments in preference to the neighbouring Cambrian basalts. Lateritisation was pronounced in the valley during tropical climates while induration occurred during the drier climates and as a consequence of uplift. The source material (including chromite, olivine, ilmenite, etc) for the black soils probably eroded from the adjacent Cambrian basaltic hills and was deposited within the palaeodrainage basin. Secondary diamonds and other indicator minerals, eroded from elsewhere, might have been transported along and deposited in the palaeodrainage basin. Uplift, denudation and differential erosion rates resulted in the topographic inversion of the lateritised basin sediments to form a hard duricrust-covered plateau surrounded by the topographically lower, preferentially eroded flood basalts. Denudation and weathering resulted in secondary indicator minerals now located in thin sediments on top of the duricrust-covered plateau to be released to surficial soils on the plateau surface or transported downstream to be deposited into creeks and rivers traversing or adjacent to the plateau.

The model above allows for the following scenarios to explain diamond and other indicator mineral occurrences in the region:

- Kimberlitic diatremes in the region that were once exposed and are now covered might be the source of the diamonds and other indicator minerals in the region.
- Pre-Cretaceous age kimberlites might be covered by transported sediments and have not yet been exposed to Tertiary-Quaternary erosion.
- Lateritised Cretaceous sediments and/or Tertiary black soils in “upper” drainage catchment areas could be the source of secondary indicator minerals in the region.
- Alluvium and black soils associated with major drainages controlled by faults might obscure kimberlites that intrude the faults.

The data review suggests that areas within EL 10044 that were previously tested by sampling are unlikely to contain outcropping diamond-bearing kimberlitic diatremes that represent a target of interest to RTE. The geomorphological concepts described above allow for the presence of diamond-bearing kimberlitic diatremes in the region that may be well preserved, near surface but not necessarily exposed at surface and shedding indicator minerals. Indicator mineral occurrences throughout the region do not have to be related to kimberlites that might occur in the same region. Many of the indicator minerals could have multiple sources related to a long and complex history of erosion, transportation and deposition. This does not preclude kimberlites from being found in the region, it simply makes them more difficult to find. The kimberlitic olivine occurrence in the east of EL 10044 is enigmatic and of particular interest as the olivine grain is unlikely to survive a prolonged history of surficial weathering and transportation. It might be identifying a proximal and exposed kimberlitic source.

7 GEOLOGY

Bultitude (1973) and Cutovinos *et. al.* (2002) provide a description and maps of the regional geology of the Wave Hill and Limbunya 1:250,000 map sheets, respectively. The following summary of the geology is mainly based on information provided by these references as well as RTE’s own observations and knowledge of the area. The broad stratigraphic sequence on the Limbunya and Wave Hill 1:250,000 map sheets is presented below.

Table 2: Summary of Geology

Age	Basin	Stratigraphy	Major Lithologies
Quaternary		Regolith	Alluvium, sheetwash, colluvium
Tertiary		Regolith	Laterite, colluvium, black soil, silcrete, duricrust
Cretaceous	Dunmarra Basin?	Mullamen Beds	Sandstone, conglomerate
Middle Cambrian	Ord Basin	Goose Hole Group	Limestone, sandstone
Lower Cambrian	Wiso Basin	Antrim Plateau Volcanics	Basalt, sandstone, limestone
610 Ma	Wolfe Creek Basin	Duerdin Group	Sandstone, conglomerate, siltstone, diamictite
800 Ma	Victoria Basin	Auvergne Group	Sandstone, siltstone, dolostone, conglomerate, doloarenite
1610 Ma		Wattie Group	Siltstone, sandstone, dolostone
1660-1620 Ma	Birrindudu Basin	Limbunya Group	Dolostone, siltstone, sandstone, tuff
1880-1850 Ma	Basement	Inverway Metamorphics	Schist, acid volcanics

Almost the entire EL 10044 overlies Antrim Plateau Volcanics basalts that forms a part of a major Cambrian flood basalt province in northern Australia. Any kimberlitic diatremes within the EL would have to be Cambrian or younger in age to be exposed at or close to surface. Proterozoic kimberlites would most likely be buried by the basalt flows.

Immediately to the west of EL 10044 is a regional linear anticline consisting of a series of anticlinorial domes extending approximately NNW-SSE. The anticline represents the westernmost exposed portions of the Birrindudu and Victoria Basins. Relationships between the distribution of the Cambrian basalts and the anticline suggest either that the development of the anticline post-dated the Cambrian or that the anticline represented a topographic high at the time of extrusion of the basalts. Some 180 km to the northwest, the lower Bullita Group that stratigraphically overlies the Wattie Group in that part of the Victoria Basin hosts the 179Ma Timber Creek kimberlites.

The 1300m thick Birrindudu Basin sediments are exposed in a regional, NE-SW trending, regional anticline about 100km long and up to 75 km wide. The regional anticline that inverts and exposes the Birrindudu Basin sedimentary sequence is cored by two, very small inliers of

Inverway Metamorphics 60 km to the south west of EL 10044. The Palaeoproterozoic Inverway Metamorphics are believed to belong to an orogenic metamorphic terrain that might be correlated with the Tanami Region, Halls Creek and/or Pine Creek metamorphic terrains. Regional gravity data suggests a structural connection of the small inliers with the Tanami and Halls Creek metamorphic belts.

Lineament interpretations on a variety of publically available (NTGS, AGSO, etc) geoscientific datasets for the region suggests that there is a suite of 20-30km spaced lineaments paralleling the WNW-ESE trending Limbunya Fault. One of these lineaments lies along the contact between Cambrian basalts and underlying Victoria Basin sediments in the north east of EL 10044. In this area, Victoria River Basin sediments, which form a narrow NW-SE trending belt amongst the basalts, form either a linear anticline or a horst block.

Another NW-SE trending lineament in the central south of EL 10044 intersects a major, approximately NNE-SSW trending fracture zone adjacent to a set of hills representing the highest point and the source to the four major drainage catchments within the EL. Three of the catchments have been sampled and contain indicator minerals. The geological and geomorphological relationships suggest these hills are an area of interest for kimberlitic diatremes.

Cretaceous conglomerates/sandstones are found on the Limbunya plateau on the Limbunya SE 52-07 map sheet and overlying the Cambrian Wiso Basin formations in the north east of the Wave Hill 1:250,000 map sheet. The Cretaceous sediments have potential to be a source of diamonds and other indicator minerals in the region. At least one diamond occurrence in the Limbunya region is downstream from tributaries eroding the Cretaceous sediments.

Within EL 10044 black soil is the most widespread and dominant Cenozoic regolith type. Black soils remain an enigmatic regolith type and might, like alluvium, be reworked within drainage catchments allowing for the concentration and, possibly, dispersion of diamond and indicator mineral occurrences. Quaternary alluvial deposits (some of which contain diamonds) are largely confined to the margins of rivers and creeks.

8 REGIONAL GEOPHYSICS

Imaged regional airborne magnetics data shows EL 10044 to be located over the southeast margin of a vast magnetic high zone that covers some 400 km by 250 km in the north west of Australia. The strongest magnetic response of this regional magnetic high displays a spatial association with the thickest portions of the Antrim Plateau Volcanics flood basalts, however,

there is not a direct association with the distribution of the basalts. The magnetic source appears to be deeper than the exposed basalts.

An image of the "total magnetic intensity continued upwards 800m" shows EL 10044 to be located adjacent to the intersection of N-S and E-W regional magnetic gradients on the south east corner of the regional magnetic block. The regional magnetics data therefore suggests the EL area is proximal to the margin of a magnetically active, deep crustal block and the intersection of major, deep crustal penetrating structures along the margin of the block.

The dominant regional airborne magnetic fabric generally trends approximately NW-SE and N-S. More subtle, spaced, NE-SW trending magnetic lineaments are also apparent in the regional magnetics data. Lineaments sets mapped in the Antrim Plateau Volcanics broadly parallel these regional tectonic trends.

The regional airborne magnetics data broadly map two major geological domains on the sheet:

1. Magnetically "quiet" zones associated with Proterozoic sedimentary sequences (and lateritic plateau areas).

2. Magnetically "active" zones associated with the Antrim Plateau Volcanics.

EL 10044 is associated with a magnetically active area that reflects the underlying Cambrian basalts. Adjacent Proterozoic sequences are magnetically quiet. Major fault zones like the Limbunya Fault and Negri Fault are also clearly represented in the data.

Regional NW-SE trending gravity lineaments pass through the Wave Hill 1:250,000 map sheet. Similar trending gravity lineaments display a spatial association with some known kimberlite/lamproite occurrences in northwest Australia. The gravity data shows that the EL 10044 is located over a gravity high zone adjacent to a NW-SE trending gravity lineament. The gravity high is located on the northern margin of an extensive regional gravity high feature defined by, and traversed by, regional NW-SE to N-S trending gravity lineaments. The regional gravity high feature extends for 300 km southwards down to the Tanami Region and is interpreted to be mapping the location of an uplifted Palaeoproterozoic basement block. This block is only rarely exposed at surface in the Limbunya region, i.e., the Inverway Metamorphics.

The following spatial relationships can be observed from the exploration data:

- The location and NE-SW trend of the gravity high has a spatial relationship with the location and trend of the tongue (graben?) of Cambrian basalts within EL 10044 and the

location of major interpreted NW-SE geophysical lineaments along the margin of the basalts.

- The maxima of the gravity high has a spatial relationship with the intersection of NW-SE and NNE-SSW fractures in the central south of the EL, and the hills in the central south of the EL that is the source to four major drainage catchments (three of which contain indicator minerals).

The regional geophysical data suggests that EL 10044 is located proximal to major tectonic terrane boundaries bounded by deep crustal, and potentially mantle, penetrating structures. NW-SE faults interpreted to be traversing the EL are favourable pathways for kimberlitic diatreme intrusion.

9 EXPLORATION COMPLETED IN THE PERIOD 21 MAY 2002 TO 20 MAY 2003

During the current reporting period RTE reviewed the regional geology, geophysics, geomorphology and historical exploration data for EL 10044. The review formulated a variety of models and identified areas that might be the source of indicator mineral occurrences in the region. The review confirmed the geological prospectivity of EL 10044 for diamond-bearing kimberlite/lamproite diatremes but no advanced kimberlitic targets were identified. “Kimberlitic” olivine contained in one sample is of particular interest.

An outline of the results of the review is provided in previous sections of this report. All of the data reviewed is available from the public domain, i.e., from the NTGS, the NT Office of the Registrar General and Geoscience Australia, so will not be presented in this report.

No field-based exploration was completed during the year.

During 2002 RTE reviewed all of its diamond exploration projects throughout Australia. Following this review the decision was made to divest EL 10044. The EL is one of 21 tenement blocks comprising RTE’s Victoria Diamonds Project covering portions of the Limbunya, Victoria River Downs, Wave Hill and Waterloo 1:250,000 map sheets. Exploration data sets were collated and presented to interested parties. At the time of writing this report negotiations regarding the divestment of the Victoria Diamonds Project area were in the final stages.

10 EXPENDITURE STATEMENT

The first year's annual exploration expenditure attributed to EL 10044 by RTE is listed as follows.

Table 3: Expenditure Statement

Description	Amount ($)
Payroll & Benefits	545.27
Indirect Costs	770.85
Total	1316.12

11 PROPOSED EXPLORATION

RTE is in the process of finalising the divestment of EL 10044. The exploration program proposed for year two will involve the new project managers reviewing available exploration data, heavy mineral sampling, Falcon ™ geophysical surveying, site clearance surveys and drill testing of existing and new geophysical targets. A notional budget is outlines below.

Description	**Total $**
Data Review	$2,000.00
Geochemical Sampling	$6,000.00
Geophysics	$5,000.00
Overheads	$2,000.00
Field Support	$5,000.00
Total	**$20,000.00**

REFERENCES

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Cutovinos A., Beier P.R., Kruse P.D., Abbott S.T., Dunster J.N. and Brescianini R.F., 2002. Limbunya SE 52-07 1:250,000 Geological Map Series Explanatory Notes 2nd Edition. Department of Minerals and Energy, Northern Territory.

Bultitude J., 1973. Wave Hill SE 52-08 1:250,000 Geological Map Series Explanatory Notes. Department of Minerals and Energy, Northern Territory.

LOCALITY

Wave Hill	SE52-08	1:250 000
Victoria River Downs	SE52-04	1:250 000
Wave Hill	5063	1:100,000
Mt Sanford	5064	1:100,000

DESCRIPTOR

First annual exploration report by Rio Tinto Exploration Pty Ltd for EL 10044 Golf Tee located on Wave Hill SE 52-08 1:250,000 map sheet, western Northern Territory. A data review indicated that the area is prospective for kimberlites but there are no advanced exploration targets. No field-based exploration was completed. The EL is being divested.

KEYWORDS

Antrim Plateau Volcanics, Birrindudu Basin, Cambrian, Chromite, Cretaceous, Diamond, Dunmarra Basin, Geology, Geomorphology, Geophysics, Gravel sample, Kimberlite, Laterite, Limbunya, Limbunya Group, Lineament, Loam Sample, Olivine, Proterozoic, Victoria Basin, Wattie Group.