EL 22397 MOUNT ELEANOR
Hodgson Basin Region, NT

FINAL REPORT
ON EXPLORATION ACTIVITIES

submitted by

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on behalf of
Diamond Mines Australia Pty Ltd
and
Ashton Exploration Australia Pty Ltd
(a wholly owned subsidiary of the Rio Tinto Group)

EL 22397 ‘Mt Eleanor’
Holder: Ashton Exploration Australia Pty Ltd
Grant Date: 23 July 2002
Surrender Date: 11 July 2005
1:250,000 sheet : Urapunga SD 53-10
Minerals Sought: diamonds, base metals
SUMMARY

EL 22397 formed part of a farmin agreement between Rio Tinto Exploration Pty Ltd (“Rio Tinto”) and Diamond Mines Australia Pty Ltd (“DMA”) covering numerous Rio Tinto-controlled tenements and applications in the Northern Territory. Under this agreement, DMA is conducting predominantly diamond exploration over the tenements utilising the newly-developed Falcon™ airborne gravity gradiometer system, which has been shown to be very effective in detecting kimberlite pipes.

Gravity Diamonds Ltd is managing the farmin arrangement for Diamond Mines Australia and owns 100% of DMA.

During the first year of tenure, Rio Tinto conducted a review of historic exploration data, including considerable surface sampling focussed on diamonds, and recommended divestment of the tenement. The timing of the divestment arrangement with DMA during year two of tenure precluded the instigation of field exploration activities during 2003.

Gravity handed back the licence to Rio Tinto in June 2005 and the licence was subsequently surrendered on 11 July 2005.
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INTRODUCTION

EL 22397 was granted to Ashton Exploration Australia Pty Ltd, a wholly owned subsidiary of the Rio Tinto Group ("Rio Tinto"), on 23 July 2002. Rio Tinto was at that time in negotiation with Gravity Diamonds Limited ("Gravity") concerning the deployment of the Falcon™ airborne gravity gradiometer system over Rio Tinto’s diamond tenements in northern Australia. The Falcon™ system is a unique exploration tool developed by BHPB and it has particular application in diamond exploration.

BHPB and Gravity concluded an arrangement on Falcon™ deployment in Australia during the year (ASX announcement 01/07/2003) and then formed a farmin joint venture, through its 100% owned associated company, Diamond Mines Australia Pty Ltd ("DMA") with Rio Tinto Exploration, concerning the diamond and base metal exploration over a large number of Rio Tinto-controlled tenements in the Northern Territory) (ASX announcement 25/07/2003).

On the basis of these agreements, Gravity (on behalf of DMA) commenced diamond exploration in the Northern Territory during July 2003.

In essence, the agreements provide for DMA to deploy the Falcon™ system and earn an interest in any discovery. BHP Billiton retains a right to buy into DMA’s interest in any discovery. Gravity is managing all exploration for DMA.

The flying program carried out in 2003 was focussed on areas of strongly anomalous diamond indicator mineral sampling results, obtained from Rio Tinto and surveys were conducted in the McArthur, Victoria River and Arnhem Land regions of NT as well is in the Hodgson Basin which is the general locality of EL 22397. EL 22397 was not covered in the Hodgson survey, the closest flying being at Larrimah some 80 kilometres to the south west.

LOCATION AND ACCESS

EL 22397 “Mount Eleanor” is located just to the north of the Roper Highway 190km east south east of Katherine on the old Roper Valley Station (now PPL1161, Namul Namul) in the southern part if the Urapunga 1:250,000 sheet area in the northeast of the Northern Territory. Access is via the Stuart Highway from Katherine to Mataranka and then eastwards along the Roper Highway that passes just south of the project area. Roper Valley Homestead lies just to the south of the EL.
GEOLOGICAL SETTING AND ECONOMIC POTENTIAL

EL 22397 overlies the Bauhinia Shelf of the Proterozoic McArthur Basin some 80 km north of the contact with the overlying Cretaceous Dunmarra Basin. The existing north east margin of the Dunmarra Basin is broadly coincident with a major gravity break (gradient) which is interpreted to define a major tectonic boundary.

EL 22397 overlies gently deformed Mesoproterozoic Roper Group sedimentary sequences mainly represented by sandstones with lesser calcareous greywackes, calcareous siltstones and laminated shales. Dolerite sills have intruded the platform sedimentary basin sequence.

About 10 km to the south the Jurassic-age Packsaddle and Blackjack kimberlites intrude the Roper Group. The kimberlite dykes are spatially associated with a prominent, regional N-S trending fault (and its splays) that parallels the N-S trending Strangeways Fault about 20 km to the west. The two kimberlite dykes appear to be aligned along a localised, weakly defined, NW-SE trending geomorphological lineament that traverses the “saddle” (hence Packsaddle) between two N-S trending domes. A more pronounced NE-SW trending geomorphological lineament can be interpreted to bisect the two dyke locations.

Geomorphological, geological and geophysical data indicate the presence of NNW-SSE, NE-SW and ESE-WNW trending structures that traverse both the region and EL 22397. A major ESE-WNW trending fault traversing the north of the EL is broadly coincident with a regional gravity gradient lineament. This ESE-WNW trending fault intersects with a magnetically- and geomorphologically-defined N-S trending fault zone. The N-S trending fault zone traverses the Packsaddle-Blackjack kimberlite field about 10 km to the south.

The intersection of interpreted regional N-S and ESE-WNW trending structural lineaments in the tenement block attracts comparisons with the regional structural configuration of the Merlin kimberlite field 340 km to the south east.

Excellent reviews of the geomorphology and regional geophysics of the tenement area are contained in Rio Tinto’s year 1 Annual Report to the Department of Business, Industry & Resource Development.

The presence of the Packsaddle and Blackjack kimberlites make the area generally prospective for further diamond-bearing kimberlite pipes and the Roper Group bedrock is also regarded as a potential host to base metal mineralisation.
PREVIOUS EXPLORATION

Two, small kimberlite dykes (Packsaddle and Blackjack) were discovered by Stockdale in the late 1980’s about 10 km south of EL 22397. These small dykes contain diamonds and shed kimberlitic chromite, garnet and olivine into drainages.

Ashton previously explored the area covered by EL 22397 for diamonds using reconnaissance gravel sampling of drainage catchments at a density of one sample per 10-25km². The gravel sampling did not identify any kimberlitic indicator minerals. A similar sampling density by Ashton around the Packsaddle and Blackjack kimberlites failed to detect these two bodies suggesting that the sampling density completed within EL 22397 might not be adequate. During year one of the current tenure, Rio Tinto completed a thorough review of the geology, geomorphology and sampling data and this is documented in Rio’s 2003 report to the Department of Business, Industry & Resource Development.

WORK COMPLETED BY GRAVITY

Gravity Diamonds completed an assessment of the compilation work carried by Rio Tinto and concluded that the area was not of sufficient priority to warrant a Falcon™ survey in the initial stages of the DMA-Rio Tinto farmin arrangement. No field work was carried out during Year 2 and the area was to be reviewed when the results from the Larrimah Falcon™ survey were finalised.

Gravity handed back the licence to Rio Tinto in June 2005 and the licence was subsequently surrendered on 11 July 2005.

ENVIRONMENT AND REHABILITATION

No requirement for rehabilitation arose during the term of the licence.