EL 5954 BENDA BLUFF
ARNHEM LAND, NT

ANNUAL REPORT

ON EXPLORATION ACTIVITIES
YEAR SEVEN OF TENURE
29 March 2006 – 28 March 2007

Submitted by

GRAVITY DIAMONDS LIMITED
(ABN - 72 009 178 689)
Level 7, Exchange Tower
530 Little Collins Street, Melbourne, Victoria, 3000

On behalf of
Diamond Mines Australia Pty Ltd
and
Rio Tinto Exploration Pty Ltd

EL 5954 ‘Benda Bluff
Holder: Rio Tinto Exploration Pty Ltd
Grant Date: 29 March 1999
1:250,000 sheet: URAPUNGA (SD5310)
Minerals sought: diamonds, base metals
SUMMARY

EL 5954 currently forms part of a farmin agreement between Rio Tinto Exploration Pty Ltd and Diamond Mines Australia Pty Ltd (“DMA”) covering numerous Rio Tinto tenements and applications in the Northern Territory. Gravity Diamonds Ltd (formerly Gravity Capital Ltd) is managing the farm-in arrangement for Diamond Mines Australia, which is a wholly owned subsidiary of Gravity.

Under the terms of the farm-in agreement, DMA is conducting predominantly diamond exploration by utilising the Falcon™ airborne gravity gradiometer system. The Falcon™ system has been shown to be effective in detecting kimberlite pipes.

EL 5954 is considered prospective for commercial sources of diamonds. Previous sampling has identified kimberlitic indicator mineral occurrences, including diamonds within the tenement. During 2003 Falcon™ data was acquired over the majority of EL 5954. The flying program also included coverage of an adjacent exploration license controlled by Rio Tinto (and included in the Rio Tinto – Gravity Diamonds – DMA joint venture).

During 2004, detailed interpretation, anomaly ranking and exploration targeting from the Falcon™ data by Gravity Diamonds was completed. Delays relating to the receipt by DMA of statutory approvals for access and work programs deferred the testing of these targets until the 2005 field season.

During 2005, 20 Falcon anomalies from the Benda Falcon™ survey were directly assessed within EL 5954 and sampled where appropriate. A total of 33 heavy mineral samples, comprising 26 gravel samples and 7 loam samples were collected. Additionally, a total of 129 geochemical samples were collected, the majority comprising standard -200 micron soil samples. However, -200 micron samples were also collected at the majority of the gravel sample sites as a test for base metal anomalism. Eighteen (18) indicator mineral samples returned chromites while two (2) samples reported pyrope garnets.

Work completed during the past year of tenure has continued to focus on the interpretation of the probe data from extensive sampling completed in late 2005. Probe data indicates that some of the recovered chromite grains are possibly of kimberlitic origin, however, the majority of recovered chromite display chemistries consistent with a crustal origin.

Internal debate as to the significance of the indicator mineral sampling results, particularly given the spatially extensive distribution of dolerite sills in the area (evident in the magnetic data acquired with Falcon gradiometer system) and the high cost of conducting exploration in this remote area, has led to independent interpretation being sought from a number of third parties with regard to the provenance / significance of the recovered indicator minerals.

The consensus reached from the various third parties consulted is that the recovered chromite, while potentially derived from a kimberlite source, have been assigned a low priority for follow up. Conversely, pyrope garnets recovered from samples 159840 and 159841 were deemed to be of sufficient interest to warrant further work. It is the companies intention to conduct a sampling program early in 2007, focussed on the area where the pyropes were previously recovered, thus leaving sufficient time for additional work programs should further encouraging results be obtained.

Expenditure on the tenement during the reporting period totalled $47,451.
CONTENTS

1. Introduction
2. Location and Access
3. Geological Setting and Economic potential
4. Previous Exploration
5. Work Completed in Year 8
6. Environment and Rehabilitation
7. Conclusions and Recommendations
8. Proposed Exploration and Budget
9. Expenditure Statement

FIGURES

Figure 1: Tenement Location – EL 5954
INTRODUCTION

EL 5954 was granted to Rio Tinto Exploration Pty Ltd (“Rio Tinto”) on 29 March 1999. Since that time, Rio Tinto has established the diamond prospectivity of the area with helicopter-supported surface sampling. During 2002, Rio Tinto was in negotiation with Gravity Capital Limited (“Gravity”) renamed Gravity Diamonds Ltd, 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 BHP Billiton (BHPB) and it has particular application in diamond exploration.

BHPB and Gravity concluded an arrangement on Falcon™ deployment in Australia during 2003 and then formed a farm-in joint venture, through its wholly owned subsidiary 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.

On the basis of these agreements, Gravity (on behalf of DMA) commenced flying Falcon Surveys in the Northern Territory during July 2003. The flying was focussed on areas of anomalous diamond indicator mineral sampling results, obtained from Rio Tinto. The flying program within the Benda project covered a large portion of EL 5954 as well as a smaller area within the adjacent Rio Tinto EL 5953.

During 2004, detailed interpretation, anomaly ranking and exploration targeting from the Falcon™ data by Gravity Diamonds was completed, with a total of 37 target areas identified for follow-up work. Work programs were submitted to the traditional land owners in May 2004. Approval to proceed was not forthcoming before cessation of the 2004 field season. The Northern Land Council advised that the proposed work program could proceed in early 2005.

While the principal target in the area is diamonds, some interest is also directed toward base metal deposits.

LOCATION AND ACCESS

EL 5954 is located in an isolated area within the freehold Arnhem Land Aboriginal Land Trust, Northern Territory (Figure 1).

Access to the area is via Wongalara station, which lies some 50 km to the west of EL 5954. Access to Wongalara station is via the Central Arnhem Highway. Access to the project area from Wongalara station is via helicopter.

GEOLOGICAL SETTING & ECONOMIC POTENTIAL

EL 5954 Benda Bluff lies within the Urapunga Tectonic Ridge in the central McArthur Basin. The Urapunga Tectonic Ridge comprises an east-west striking fault zone that separates the Walker and Batten Troughs.

The McArthur Basin locally comprises three major middle Proterozoic sedimentary sequences, termed the Vizard Group (1650 to 1630Ma), Nathan Group (1620 to 1590 Ma) and Roper Group (post 1550 Ma). Sediments may attain an aggregate thickness of 2 km within the tenement area.
Sedimentary rocks of the Roper Group dominate basement exposure within EL 5954. The Roper Group within EL 5954 comprises six main subdivisions: the Limmen Sandstone, Mainoru Formation, Crawford Formation, Abner Sandstone, Corcoran Formation and Bessie Creek Sandstone (Dunn, 1963). These unconformably overlie the Nathan Group.

The Roper Group is interpreted to comprise repeated coarsening upward or shoaling sequences dominated by shelfal shale and marginal marine sandstone deposits. Sandstone architectures are progradational in character. Palaeocurrent data suggest provenance of sand from the south and south-west.

Sediments within EL 5954 are only gently folded, with bed dips rarely exceeding 20°. Sediments are pervasively cut by north-south, north-east and north-west faults. At least two discrete episodes of post-Roper Group fault activation and coincident folding can be distinguished from geologic maps.

Roper Group sediments are intruded by a number of dolerite sills, varying up to 50 m thick. Dolerite sill intrusion post dates Roper Group deposition but predates folding and faulting.

Significant mineralisation is not known to occur within or near to the tenements but the region in general lies within the ‘Microdiamond Field’ on the ‘Northern Australian Craton’ and is considered to be prospective for diamonds.

**PREVIOUS EXPLORATION**

Early accounts of land to the north of Ngukurr describe a remote environment rarely traversed by Europeans (Hall, 1956). For this reason, it is likely that the area of EL 5954 Benda Bluff was never prospected prior to modern times.

The first systematic exploration of the area within EL 5954 was conducted by Western Nuclear between 1965 and 1969 (CR69/51). Airborne magnetic, electromagnetic and radiometric data and stream sediment samples were collected over most of EL 5954. Follow-up of geophysical and geological anomalies failed to identify significant mineralisation.

Between 1989 and 1991 Stockdale conducted programs of loam and stream sediment sampling to the south of EL 5954 (CR92/075). Sampling failed to identify significant diamond indicator or base metal anomalies.

Exploration carried out by Rio Tinto in its first year of tenure consisted of reconnaissance heavy mineral gravel sampling at an average density of 1:20-25 km², followed by a campaign of infill sampling. Reconnaissance stream sediment and soil sampling for base metals was also completed.

Exploration activities completed in subsequent years consisted solely of follow-up gravel sampling for diamonds. A total of 32 gravel samples were collected within EL 5954 during September 2000. The samples comprised 40 kg of sediment sieved to -1mm. Sampling was conducted by two teams of 3-4 workers, supported by helicopter.

Gravel samples were submitted to the Rio Tinto Belmont Mineral Processing Laboratory to observe for all indicator minerals to +0.2mm.

The following results were achieved:
Multiple chromite grains recovered from several samples (5489903, 5489904, 5489915, 5489956, 5489953). Insufficient grains are available to allow a definitive interpretation, however it appears that the chromites are of crustal origin.

Single chromite grains recovered from several samples (5489919, 5489957, 5489961, 5489962, 5489965). These grains also appear to be of crustal origin.

Single macro diamond recovered from sample 5489953 (white, irregular, inclusion free).

During 2002 Rio Tinto assessed the status of its extensive diamond exploration tenement holdings around Australia. EL 5953 and the contiguous EL 5954 were selected for divestment and discussions were initiated with various interested parties.

As mentioned above, an agreement covering much of the Rio Tinto-controlled diamond exploration tenements in northern Australia was finalised in July 2003 between Rio Tinto and DMA. Review of available geophysical and geochemical data was carried out by Gravity (managing the project on behalf of DMA) and this confirmed considerable potential for diamondiferous kimberlites. EL 5954 and part of the neighbouring tenement EL 5953 which form part of the Gravity Capital – Diamond Mines Australia – Rio Tinto “Northern Australia Diamonds” Joint Venture were confirmed to contain numerous microdiamonds and kimberlitic indicator minerals.

On this basis, a Falcon™ airborne gravity gradiometer survey was planned and completed in December 2003. Field survey work was done by Fugro Airborne Surveys under a contract with BHP Billiton, with whom Gravity Capital has the Falcon™ deployment agreement.

The survey was flown on north-south oriented lines, 100m apart at a height of 80m above ground level. Coverage of just over 400 km² within the tenement comprising a total of approximately 4,400 line kilometres was acquired. Data was processed by BHP Billiton’s Falcon Operations Group and delivered to Gravity Capital in March 2004. Images of the basic data were presented in the 2004 annual report and the full digital data set was lodged with the NT Geological Survey during 2005.

Work conducted on EL 5954 during 2004 involved interpreting the Falcon™ airborne gravity data. A total of 37 targets were identified as requiring follow-up field assessment. Work programs were submitted to the traditional land owners in May 2004. Approval to proceed was not forthcoming before the onset of the wet season. This resulted in the postponement of planned exploration on EL 5954 during 2004. In early 2005 the Northern Land Council advised that the program could proceed.

During 2005, 20 Falcon anomalies from the Benda Falcon™ survey were directly assessed within EL.5954 and sampled where appropriate. A total of 33 heavy mineral samples, comprising 26 gravel samples and 7 loam samples were collected. Additionally, a total of 129 geochemical samples were collected, the majority comprising standard -200 micron soil samples. However, -200 micron samples were also collected at the majority of the gravel sample sites as a test for base metal anomalism. Eighteen (18) indicator mineral samples returned chromites while two (2) samples reported pyrope garnets.
WORK COMPLETED IN YEAR 8

Work completed during the past year of tenure has continued to focus on the interpretation of the probe data from extensive sampling completed in late 2005. Probe data indicates that some of the recovered chromite grains are possibly of kimberlitic origin, however, the majority of recovered chromite display chemistries consistent with a crustal origin.

Internal debate as to the significance of the indicator mineral sampling results, particularly given the spatially extensive distribution of dolerite sills in the area (evident in the magnetic data acquired with Falcon gradiometer system) and the high cost of conducting exploration in this remote area, has led to independent interpretation being sought from a number of third parties with regard to the provenance / significance of the recovered indicator minerals.

The consensus reached from the various third parties consulted is that the recovered chromite, while potentially derived from a kimberlite source, have been assigned a low priority for follow up. Conversely, pyrope garnets recovered from samples 159840 and 159841 were deemed to be of sufficient interest to warrant further work. It is the companies intention to conduct a sampling program early in 2007, focussed on the area where the pyropes were previously recovered, thus leaving sufficient time for additional work programs should further encouraging results be obtained.

ENVIRONMENT AND REHABILITATION

No on-ground exploration activities were conducted in the past year of tenure, hence there was no requirement for rehabilitation.

CONCLUSIONS AND RECOMMENDATIONS

EL 5954 lies within an area of anomalous kimberlitic indicator sampling results. The majority of the tenement area has been flown with the Falcon™ system airborne gravity gradiometer system.

During 2005, 20 Falcon anomalies from the Benda Falcon™ survey were directly assessed within EL 5954 and sampled where appropriate. A total of 33 heavy mineral samples, comprising 26 gravel samples and 7 loam samples were collected. Additionally, a total of 129 geochemical samples were collected. A total of 19 samples reported positive for indicator minerals. Preliminary interpretation of the probe data indicated that some of the recovered grains were potentially of kimberlitic origin.

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EL5954 was due to expire on the 28/03/2007. An application for further renewal was lodged with DPIFM on 12/02/2007. A decision regarding the approval of this application is awaited.

**PROPOSED EXPLORATION BUDGET**

- Field Access and Sampling Costs: $20,000
- Sample analysis costs: $10,000
- Geological and Technical Support: $10,000
- Travel, Accommodation and Logistics Support: $10,000

**TOTAL**: $50,000

**EXPENDITURE STATEMENT**

- Legal/Tenement management costs: $5,022
- Assays: $8,528
- Professional personnel costs: $18,640
- Data processing / computing costs: $3,445
- Support costs: $2,061
- Travel and accommodation: $3,566
- Administration/overhead: $6,189

**TOTAL**: $47,451
ARNAHEM PROJECT
BENDA-MT LEAN EL's

NORTHERN ARNHEM ELA's
IN MORATORIUM

FALCON™
Survey Area

Legend

EL5954

Other local tenements included in the Rio-DMA Joint Venture

Diamond Mines Australia

Arnhem Project Area

EL5954
Location Map

Date: 21/03/2006
Author: D Isles
Office: West Perth
Drawing: Nicolcad
Workspace: EL5954 report 2007 01
Scale: 1:1000000
Projection: Longitude / Latitude (NAD 83)