EL 23772 ‘Cox River South’
COX RIVER DISTRICT, NT

RELINQUISHMENT REPORT
ON BLOCKS RELINQUISHED AT THE CONCLUSION OF
YEAR FOUR OF TENURE
19 AUGUST 2006 – 18 AUGUST 2007

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Level 7, Exchange Tower
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EL 23772
Holder: Gravity Diamonds Limited
Grant Date: 19 August 2003
1:250,000 Sheet : **Mt Young SD 53-15**,

Minerals Sought: Diamonds, Base metals
SUMMARY

EL 23772 “Cox River South” was granted to Gravity Capital Limited on the 19 August 2003. During the first year of tenure, on the basis of encouraging historic diamond sampling data from nearby tenements, a Falcon™ airborne gravity gradiometer survey was flown over a substantial part of the Cox River South tenement and also over neighbouring tenements.

The entire district survey was completed on September 27th, 2003 and acquired a total of 5153 linear kilometres of gravity gradiometer, magnetics, and laser scanner data. Approximately 9% of this survey was contained within EL 23772. The entire tenement area was flown.

Data was processed by BHP Billiton’s Falcon Operations Group and delivered to Gravity Capital in November 2003. Gravity Capital Limited changed its name to Gravity Diamonds Limited in October 2004 to reflect its exclusive focus on diamond exploration.

Detailed interpretation, anomaly ranking and exploration targeting from the Falcon survey by Gravity Diamonds was completed during 2004. No highest priority targets were identified within EL 23772, however several 2nd and 3rd order targets were noted. Targets in adjacent EL’s, currently being explored by Gravity, were rated more highly however the possibility of kimberlite pipes occurring on EL 23772 was still contemplated.

Helicopter-supported field reconnaissance and sampling programs in 2005 and 2006 were conducted in the district, primarily focused on high priority Falcon® targets in licence areas adjacent to EL 23772. Lower ranking target areas within EL 23772 were visited during this program but none of these were assessed as warranting heavy mineral sampling by the relatively inexperienced crew assembled.

During late 2006 the original Falcon™ gravity data was reprocessed by BHPB Falcon Operations with updated noise suppression algorithms that lowered the noise in the original data set from approximately 10 Eotvos to 3 Eotvos. Small kimberlites discovered by Gravity Diamond at Abner Range in 2005 were found to have a negative gravity response of 22 Eotvos – hence the lower noise range achieved increased the detectability of possible small kimberlite bodies.

There were three (3) blocks relinquished from EL 23772 at the conclusion of Year 4. These blocks were on the southern end of the licence.
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INTRODUCTION
EL 23772 “Cox River South” was granted to Gravity Capital Limited (“Gravity”) on the 19 August 2003. Gravity was at that time in advanced negotiation with BHPB concerning the deployment of the Falcon™ airborne gravity gradiometer system. The Falcon™ system is a unique exploration tool developed by BHPB and it has particular application in diamond exploration.

BHPB and Gravity concluded the arrangement on Falcon™ deployment during 2003 (ASX announcement 01/07/2003) and also formed a joint venture, through its 100% owned subsidiary, 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 the agreements, Gravity (on behalf of DMA) commenced diamond exploration in the Northern Territory during July 2003.

The agreements provided a right 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 covered all of EL 23772 and similarly covered adjacent Exploration Licenses controlled by Rio Tinto (and included in the Rio Tinto – Gravity Capital – DMA joint venture) and other Granted Exploration Licences held by Gravity. Gravity Capital Limited changed its name to Gravity Diamonds Limited in October 2004 to reflect its focus on diamond exploration.

LOCATION AND ACCESS
EL 23772 is located 45 kilometres west of Nathan River homestead in the Gulf Region of the Northern Territory. The tenement lies in the southwest portion of the Nathan River Pastoral Lease, managed by NT Parks and Wildlife, and is now accessible following rehabilitation of station tracks from the adjoining Broadmere Station (Figure 1).

GEOLOGICAL SETTING
The northern part of EL 23772 comprises gently deformed mid Proterozoic Roper River Group sediments of the McArthur Basin. In the southern part, the Roper River Group is overlain by the Bukalara Sandstone, which forms the basal part of the Cambrian Georgina Basin sequence. The area is of low relief, being drained by the Cox River and exposure is relatively poor.

The principal exploration target in the area is diamonds. The area lies within the northern Australian Craton “microdiamond field” which extends from the Camooweal region of NW Queensland to the East Kimberley district in north west WA. The diamondiferous “Packsaddle” kimberlite dykes area located 120km to the northwest of the tenement and the Merlin diamond field lies approximately 190 kilometres to the southeast. Gravity has recently announced the discovery of new diamondiferous kimberlites at the Abner Range 150 kilometres southeast of the tenement area. These kimberlites were discovered utilising the same Falcon™ airborne gravity gradiometer system that has been flown over EL 23772 and has provided a template for kimberlite discovery within the tenement.
While the McArthur Basin is known for its base metal potential, known occurrences are rare in the Roper River Group and exploration for lead, zinc and copper are a low priority.

PREVIOUS EXPLORATION ON RELINQUISHED BLOCKS
Two small, low grade kimberlitic dykes (Packsaddle and Blackjack) were discovered by Stockdale in the late 1980’s on the north east of the Hodgson Project area some 100km NE of EL 23772. These small dykes contain diamonds with low grades and shed kimberlitic chromite into drainages.

Surface sampling by CRAE and Ashton was completed surrounding the licence area during the 1980’s with some subsequent infill sampling during the 1990’s. The few samples reported within the licence returned no positive indicator mineral results. The regional sampling by both companies, however, identified widespread microdiamonds and indicator minerals, mainly chromite, from drainages surrounding the project area. The geochemistry of the chromite suggests they are derived from both kimberlitic and non-kimberlitic sources.

WORK IN YEARS 1, 2 AND 3 ON RELINQUISHED BLOCKS
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. A review of available geophysical and sample data was carried out by Gravity (managing the project on behalf of DMA) during the initial reporting periods confirmed the potential for diamondiferous kimberlites to be located within the Cox River South tenement block.

On this basis, a Falcon® airborne gravity gradiometer survey was planned and acquired in September, 2003. The survey covered all of EL 23772 and extended to neighbouring areas held by Gravity and by the Rio Tinto –DMA –Gravity joint venture. Results of the survey were presented in the 2004 annual report and the digital data and acquisition/processing report has subsequently been lodged with the NT Mines Department.

A single target was identified on the western edge of the relinquished blocks.

WORK IN YEAR 4 ON RELINQUISHED BLOCKS
Data processing and interpretation from the 2003 Falcon survey was completed during 2004, however advances in noise suppression techniques developed by the BHPB Falcon Team during 2006 have been applied to the entire dataset – including the data within licence EL 23771 during the reporting year. This enhanced data set highlighted the existing Falcon target in the relinquished tenement area, with drainages identified that can test the target. A site visit to the target revealed slightly fractured, but outcropping Proterozoic sediments. The lack of any cover sequence limited the ability of the target to host a kimberlite and no sample was taken.

There were three (3) blocks relinquished from EL 23772 at the conclusion of Year 4. These blocks were on the southern end of the licence.
CONCLUSIONS AND RECOMMENDATIONS

Exploration license 23772 occurs in an area that is considered prospective for diamonds as anomalous kimberlitic indicator mineral results have been recovered nearby.

A Falcon airborne gravity gradiometer survey has been flown over the EL area, with subsequent reprocessing highlighting several moderate targets. Gravity targets within the relinquished area can be adequately explained by existing geological factors and are unlikely to be kimberlitic.

There were three (3) blocks relinquished from EL 23772 at the conclusion of Year 4. These blocks were on the southern end of the licence.