



FLINDERS  
DIAMONDS

## Australian Stock Exchange Announcement

### ADELAIDE HILLS PROJECT

# TWO AIRBORNE MAGNETIC SURVEYS COMPLETED NUMEROUS NEW DIAMOND INDICATOR MINERAL ANOMALIES DETECTED

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The Manager  
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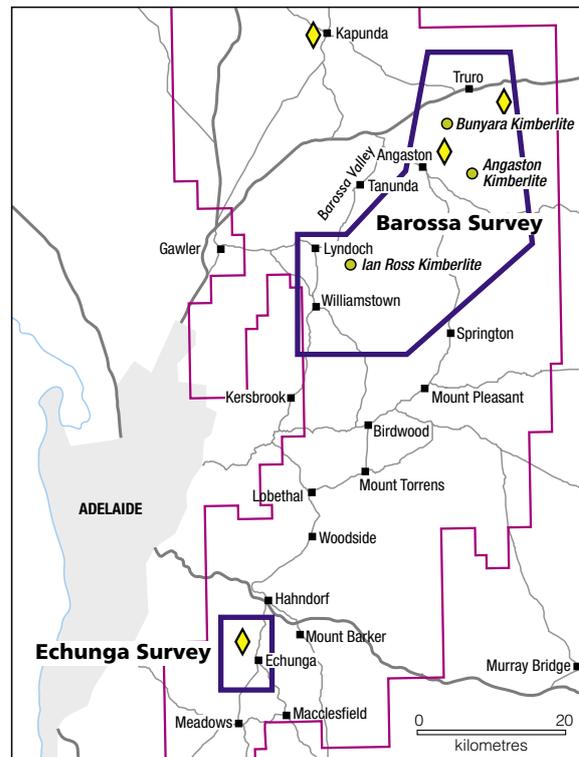
#### HIGHLIGHTS

- *Two high-resolution airborne magnetic surveys completed last weekend.*
- *Data processing and interpretation expected to identify new kimberlite targets.*
- *Diamond indicator mineral chemistry suggests some stream samples are from kimberlites with high diamond prospectivity.*
- *Several gold and base metal indicator anomalies also detected.*

#### Barossa Airborne Magnetic Survey

The Barossa Ranges airborne survey commenced on 8 June and was completed on 28 June. Location is shown on the attached Plan. Inclement weather resulted in eight days where surveying was not possible. Coverage of a total area of 800 square kilometres involved flying 8,800 line kilometres on traverses 100 metres apart. Magnetics, radiometrics and digital elevation data were recorded. Magnetics were measured by the horizontal gradiometer method, which enables identification of anomalies between flight lines that might not be recognised by a conventional survey.

Airborne data are now being processed to display coloured images of the results. They are expected to be available by 19 July. Following receipt by Flinders Diamonds Limited (FDL), the images will



- Major road
- Main road
- ▭ Area of airborne magnetic survey
- ◆ Diamond location
- Kimberlite location
- ▭ FDL Project area

Location of Adelaide Hills Airborne Magnetic Surveys

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be examined and anomalous features, which could represent kimberlite pipes or dykes, will be identified. These features will then be followed up in the field. Rock or soil samples will be collected and assayed to confirm the presence of possible kimberlite targets. The resulting targets will be tested by excavation or drilling. It is at this stage that diamonds can be recognised, if present. Most of this work should take place in the September quarter of 2004.

#### **Echunga Airborne Magnetic survey**

A smaller survey covering 70 square kilometres, centred on Echunga (see Plan), was flown between 28 June and 3 July. Three days were lost due to inclement weather. The survey involved 1,600 line kilometres on traverses 50 metres apart. Data processing, interpretation and follow up are being treated similarly, and coincident with, the Barossa Ranges results. The survey was flown as part of FDL's attempt to locate the primary source of the alluvial diamonds found at Echunga in the late nineteenth century.

#### **Diamond Indicator Anomalies**

During the last week FDL received the final diamond indicator mineral results from the 106 Adelaide Hills samples taken to date in 2004, mostly in the Barossa Ranges area. This brings the total number of samples, collected by FDL in the Adelaide Hills, to 153. Of these samples, 74 returned no indicators, 48 gave indications of between one and thirty indicator grains, and thirty-one samples had significant results of over thirty grains. Seven of these had over 100 grains and are thought to be very close to a primary source. Diamond indicator minerals detected include all the classical kimberlite indicator minerals such as: chrome diopside, pyrope garnet, chrome spinel, picroilmenite, enstatite and magnesium-rich olivine.

Electron microprobe analysis to determine kimberlitic affinity is underway. To date, of the 79 positive samples, 32 have had some grains probed. Of these 18 gave non-kimberlitic affinity and 14 gave

kimberlitic affinity. Probing of the remaining positive samples is underway. Of the kimberlitic samples, some contain group G9 pyrope garnet or high magnesium-chromium picroilmenites. These are indicators of formation within the diamond stability field and therefore suggest a high prospectivity for diamonds.

To date, three kimberlite bodies have been identified in the Barossa Ranges at Angaston, Bunyara and Ian Ross, with a further four possible at Bunyara. Four diamond locations are known, one at Echunga, two between Angaston and Truro and one near Kapunda, as shown on the attached Plan. FDL's strategy involves use of the significant new diamond indicator results, and results of the new airborne surveys, to locate additional kimberlite pipes which could be the primary sources of known alluvial diamonds.

#### **Gold and Base Metal Anomalies**

As part of its examination of the 153 regional samples, FDL has detected a number of additional non-diamond indicator minerals of possible economic interest. Results of interest include 12 samples with alluvial gold, 17 with copper minerals, two with molybdenite and 4 with gahnite. Gahnite can be an indicator of lead-zinc mineralisation. Some of these anomalies are from the vicinity of old mines, others are not. Interpretation and follow up work is necessary to gain an appreciation of the significance of these results.



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