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EL 3378

PARATOO

**1st & 2nd PARTIAL SURRENDER REPORTS
FOR THE PERIODS**

FROM 20/7/2005 TO 09/11/09 & 19/07/2010

Submitted by
Flinders Mines Ltd
2009

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FLINDERS RANGES PROJECT

Nackara Tenements

PARTIAL SURRENDER REPORT

For the period

20 July 2005 to 9 November 2009

FOR

EXPLORATION LICENCE

EL 3378 (Paratoo)

Author : D.T. Miller, F.M. Parker

Date : December 2009

Report No : FDL_0969

Distribution:

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Key words: *Diamond exploration, Flinders Ranges, Nackara arc, kimberlite, kimberlitic indicator minerals, kimberlite dykes, kimberlite pipes, microdiamonds, airborne geophysics*

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Summary

The following partial relinquishment report outlines the exploration for diamonds undertaken by Flinders Mines Limited on the surrendered blocks of EL 3378 during the period 20 July 2005 to 9 November 2009.

Work completed during the reporting period comprised:

- High definition helimagnetic surveying (Nackara 2007 survey)
- Processing of data, interpretation and target identification/selection from the Nackara 2007 survey

1. Introduction

This report outlines exploration for diamonds during the period 20 July 2005 to 9 November 2009 on the relinquished portion of EL 3378. Exploration undertaken by FMS during the reporting period included a detailed heli-magnetic survey (Nackara 2007 survey).

2. Tenure

2.1 Tenure Details

EL 3378 (Paratoo) was granted to I.R. and M.A. Filsell on 20 July 2005.

Tenement details are set out below in Table 1.

EL No.	EL Name	Grant	Expiry	Registered Holder	Area Sq km
EL3378	Paratoo	20.07.05	19.07.09 – Extension pending	IR & MA Filsell	324

Table 1: Tenement Details

3. Location and Access

The tenement is located 200 km northeast of Adelaide and some 40 km east of Peterborough in the Southern Flinders Ranges, as shown in Figure 1.

The tenement may be accessed from the Barrier Highway via a relatively dense network of unsealed roads and farm tracks. Short off-road access to target sites is possible in most areas.

The tenement is located on the 1:250,000 Map Sheets: SI54-01 (Orroroo) and SI54-5 (Burra).

4. Topography

The tenements are located within the southern Flinders Ranges where relatively low, deeply dissected NNE trending outcrop ridges are separated by broad flat alluvial plains.

5. Geology

The project area is part of the Nackara Arc region of the Adelaide Fold Belt, comprising Neoproterozoic and Cambrian (1000-500Ma) shallow marine sedimentary rocks, deposited in a rifted valley system. Regional deformation and metamorphism during the Delamerian Orogeny developed NE and NW trending faults and fold structures during Late Cambrian-Early Ordovician times. East-west oriented compression during deformation formed open synclines divided by laterally compressed and faulted anticlinal fold structures. To the north, these structures bend to the northeast around the probable northwest margin of the inferred Murray Craton.

Previously discovered kimberlites, specifically NW-trending dykes and small pipes, occur east and southeast of Terowie. These were first found by Stockdale in the 1970s and early 1980s. In the current tenements the Calcutteroo and Pandappa kimberlites occur as a NNE trending zone in EL 2977, the Pine Creek pipes cluster within the Ucocola Inlier (EL 3434) and the Pitcairn pipes within EL 3225. For further geological background, the reader is referred to

Anderson (2006), Colchester (1980), and Keeling (2005).

6. Previous Exploration

Kimberlites were first discovered by Stockdale Prospecting using tradition kimberlite indicator mineral (KIM) sampling. Systematic loam and drainage sampling identified kimberlite localities. Once found, kimberlites were tested for diamonds by bulk sampling.

Although no primary sourced diamonds were recovered, Stockdale did identify a broad cluster of small secondary (micro) diamonds, known as the Nackara Diamond trend. This occurs as a broad NE-trending zone across the Nackara tenements. The microdiamonds were recorded mainly in loam samples collected as part of the intensive regional KIM sampling programs.

Previous exploration in the Nackara region relevant to the Nackara Project, and previous exploration by FDL during 2004-2005 by FDL is summarised by Anderson (2006).

7. Recent Exploration

This tenement is operated as part of a regional exploration program including FMS' Springfield, Nackara and Jamestown groups of tenements to the south and west. As part of the JV arrangements EL3 was covered by the Nackara 2007 detailed helimag survey.

The current exploration strategy has used helicopter base regional surveys with followup ground magnetic surveying as the main targeting method.

7.1 Geophysics

7.1.1 Airborne Magnetic Surveys

The Nackara 2007 helicopter-magnetic survey is the third in a series of large surveys undertaken by FDL in recent years. This recent survey covers a significant portion of the JV Paratoo tenement.

7.1.1.1 Nackara 2007 Survey

The Nackara survey was flown in late 2007 by Geosolutions Pty Ltd using flight lines oriented N-S, a flying height of 30 m and a line spacing of 100 m. Survey data has been subset to the relinquished area and have been provided as a plain CSV format.

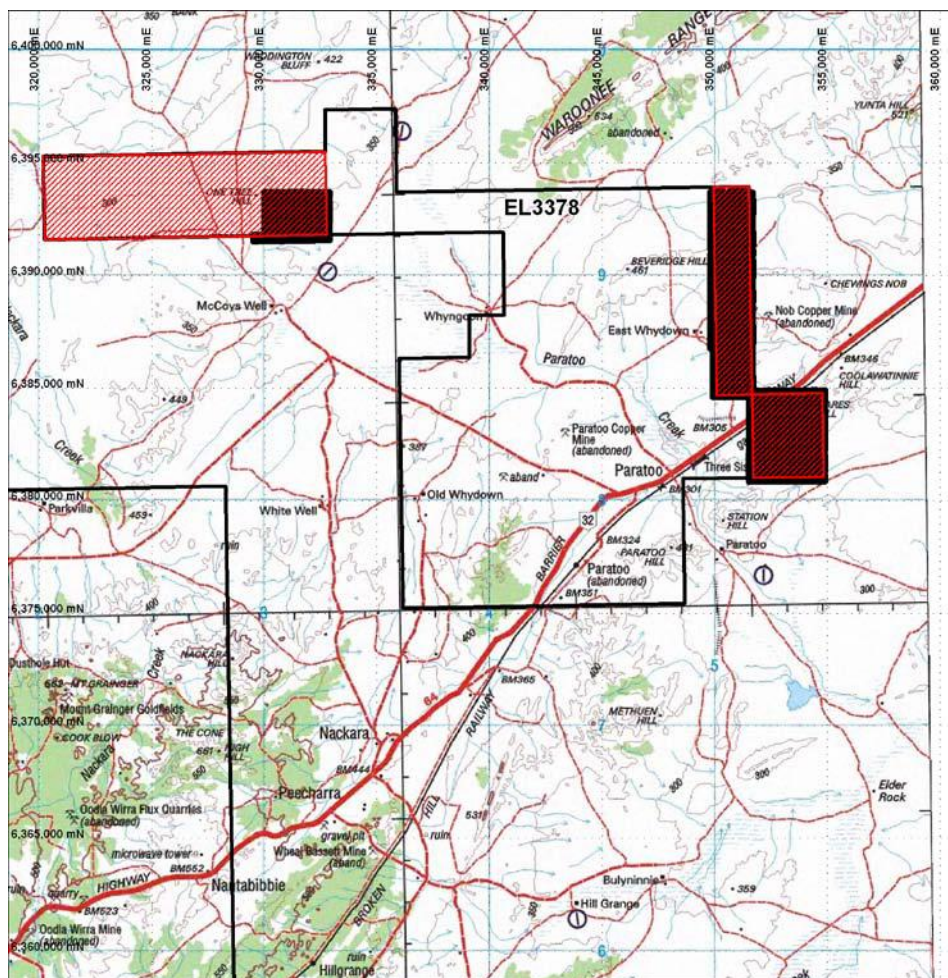


Figure 1: Airborne magnetic data covering the relinquished portions of EL3378

7.2 Interpretation and Target selection

Preliminary processing and target selection was applied to the survey data during the reporting period. Targets were quickly ranked based on their image characteristics, those that looked promising were selected for loam sampling. No targets were selected for follow-up in the relinquished areas.

8. Conclusions

Preliminary interpretation of the high resolution heli-magnetic survey didn't identify any favourable magnetic anomalies, which may represent kimberlite dykes and pipes.

9. References

Anderson, B. E., 2006 Flinders Ranges Project Annual Technical Report, Flinders Diamonds Limited, July 2006 Report No : 05/18

Colchester, D.M., 1980. Geology and petrology of some kimberlites near Terowie, South Australia. New South Wales institute of technology (Sydney). MAppSc thesis (unpublished).

Cole, L.F., Miller, D.T. and Parker, F.M., 2009. Flinders Ranges Project Nackara tenements Combined Annual Report for the period 1 January 2006 to 31 December 2007 EL 3434 (Bendigo), EL 3832 (Pandappa) and EL 3225 (Nackara). *FDL Report 0710*.

Cole, L.F., Miller, D.M. and Parker, F.M., 2009. Flinders Ranges Project Paratoo annual technical report for the period 20 July 2007 to 19 July 2008. *FDL Report_0843*



FLINDERS RANGES PROJECT

Nackara Tenements

PARTIAL SURRENDER REPORT

For the period

20 July 2005 to 19 July 2010

FOR

EXPLORATION LICENCE

EL 3378 (Paratoo)

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Date November 2010
Report No : FDL_1058

Distribution:

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Key words: *Diamond exploration, Flinders Ranges, Nackara arc, kimberlite, kimberlitic indicator minerals, kimberlite dykes, kimberlite pipes, microdiamonds, airborne geophysics*

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LIST OF ASSOCIATED FILES

Description	File Name
Airborne Geophysics Data	EL_3378_nackara2007_amag
Geochemical samples	EL_3378_2010_P_01_SurfaceGeochem.xlsx
Heavy mineral samples	EL_3378_2010_P_02_HMS.xlsx

Summary

The following partial relinquishment report outlines the exploration for diamonds undertaken by Flinders Mines Limited on the surrendered blocks of EL 3378 during the period 20 July 2005 to 21 May 2010.

Work completed during the reporting period comprised:

- High definition helimagnetic surveying (Nackara 2007 survey)
- Processing of data, interpretation and target identification/selection from the Nackara 2007 survey
- Heavy mineral and geochemical sampling over helimagnetic targets

1. Introduction

This report outlines exploration for diamonds during the period 20 July 2005 to 9 November 2009 on the relinquished portion of EL 3378. Exploration undertaken by FMS during the reporting period included a detailed heli-magnetic survey (Nackara 2007 survey).

2. Tenure

EL 3378 (Paratoo) was granted to I.R. and M.A. Filsell on 20 July 2005.

As of May 2010 it was agreed to decided to drop 21 blocks (Figure 1)

Tenement details are set out below in Table 1.

EL No.	EL Name	Grant	Expiry	Registered Holder	Original Area (Blocks)	Surrendered Area (blocks)
EL 3378	Paratoo	20.07.05	09.11.09	IR & MA Filsell	86	21

Table 1: Tenement Details

3. Location and Access

The tenement is located approximately 200 km northeast of Adelaide and some 40 km east of Peterborough in the Southern Flinders Ranges, as shown in Figure 1.

The tenement may be accessed from the Barrier Highway via a relatively dense network of unsealed roads and farm tracks. Short off-road access to target sites is possible in most areas.

The tenement is located on the 1:250,000 Map Sheet SI54-01 (Orroroo).

4. Topography

The tenement is located within the southern Flinders Ranges where relatively low, deeply dissected NNE trending outcrop ridges are separated by broad flat alluvial plains.

5. Geology

The project area is part of the Nackara Arc region of the Adelaide Fold Belt, comprising Neoproterozoic and Cambrian (1000-500Ma) shallow marine sedimentary rocks, deposited in a rifted valley system. Regional deformation and metamorphism during the Delamerian Orogeny developed NE and NW trending faults and fold structures during Late Cambrian-Early Ordovician times. East-west oriented compression during deformation formed open synclines divided by laterally compressed and faulted anticlinal fold structures. To the north, these structures bend to the northeast around the probable northwest margin of the inferred Murray Craton.

Previously discovered kimberlites, specifically NW-trending dykes and small pipes, occur east and southeast of Terowie. These were first found by Stockdale in the 1970s and early 1980s. In the current tenements the Calcutteroo and Pandappa kimberlites occur as a NNE trending zone in EL 2977, the Pine Creek pipes cluster within the Uccola Inlier (EL 3434) and the Pitcairn pipes within EL 3225. For further geological background, the reader is referred to

139°10'

139°20'



SOUTH AUSTRALIA

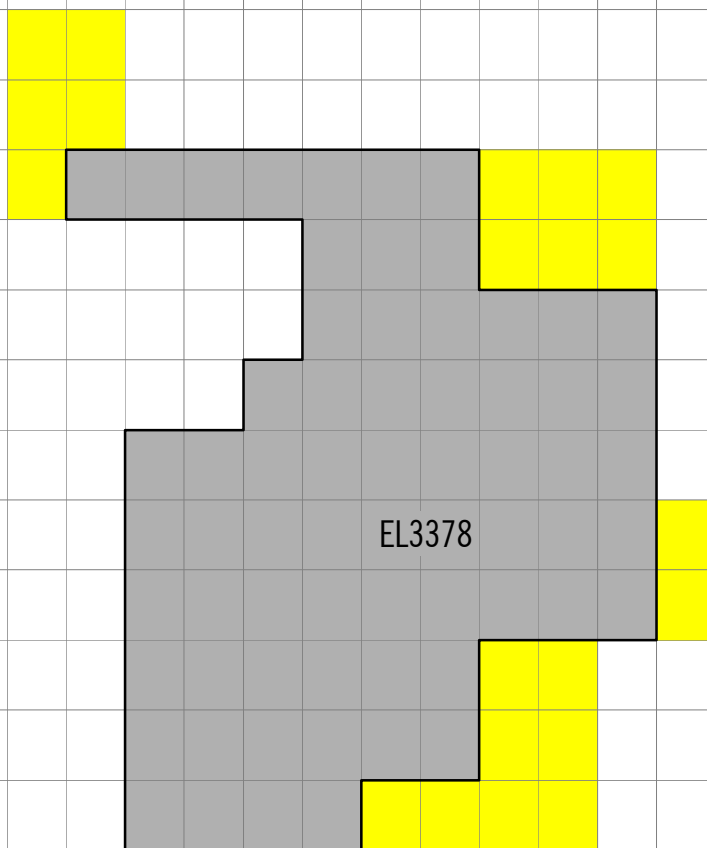
**NACKARA
PROJECT**

**EL3378 (Paratoo)
Partial Surrender
(21 Blocks)**

Author: **D.Miller**
Drafted: **A.Bonner**
Date: **21 05 2010**
File No: **NACKAR_042.wor**

Scale: **1:200,000**
Projection: **Longitude/Latitude**
Datum: **AGD66**

-  Blocks to be retained
-  Blocks to be surrendered



0 4 km

139°10'

139°20'

-32°30'

-32°30'

-32°40'

-32°40'

-32°50'

-32°50'

Anderson (2006), Colchester (1980), and Keeling (2005).

Further geological and structural reviews of the area are available in reports submitted for the Nackara Diamond Project (NDP), particularly Reports No. NDP 1/00 (Curtis 2000), No. NDP 2/01 (Simnovec 2001) and No. NDP 4/03 (Curtis 2003).

6. Previous Exploration

Kimberlites were first discovered by Stockdale Prospecting using traditional kimberlite indicator mineral (KIM) sampling. Systematic loam and drainage sampling identified kimberlite localities. Once found, kimberlites were tested for diamonds by bulk sampling.

Although no primary sourced diamonds were recovered, Stockdale did identify a broad cluster of small secondary (micro) diamonds, known as the Nackara Diamond trend. This occurs as a broad NE-trending zone across the Nackara tenements. The microdiamonds were recorded mainly in loam samples collected as part of the intensive regional KIM sampling programs.

Previous exploration in the Nackara region relevant to the Nackara Project, and previous exploration by FMS during 2004-2005 by FMS is summarised by Anderson (2006).

7. Recent Exploration

The Nackara Project is operated as part of a regional exploration program including FMS's Springfield and Jamestown groups of tenements to the west. The current exploration strategy has been modified since early 2004 from traditional KIM sampling techniques to the use of aeromagnetic and ground magnetic surveying as the main targeting method.

7.1 Geophysics

7.1.1 Airborne Magnetic Surveys

The Nackara 2007 helicopter-magnetic survey was the third in a series of large surveys undertaken by FDL in recent years. This recent survey covers a significant portion of the JV Paratoo tenement. The Nackara survey was flown in late 2007 by Geosolutions Pty Ltd using flight lines oriented N-S, a flying height of 30 m and a line spacing of 100 m. Survey data have been subset to the relinquished areas (Figure Ø) and have been provided as plain CSV and ASEG GDF2 formats.

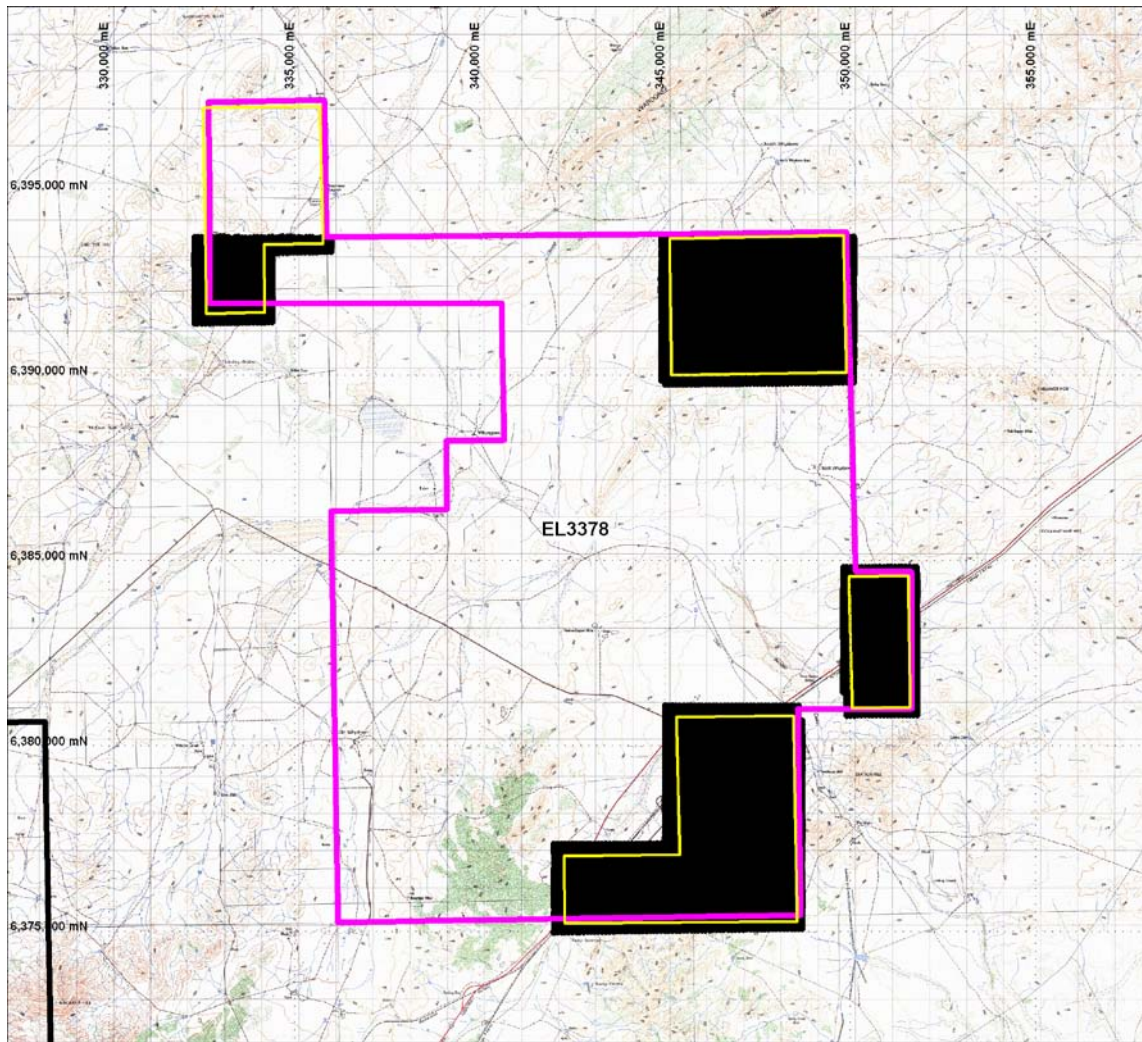


Figure 2: Airborne magnetic data covering the relinquished portions of EL3378

7.1.2 Interpretation and Target selection

Preliminary processing and target selection was applied to the survey data during the reporting period. Targets were quickly ranked based on their image characteristics and those that looked promising were selected for loam sampling. No targets were selected for follow-up in the relinquished areas.

7.2 Sampling

7.2.1 Heavy Mineral Samples

Two loam samples were collected over selected airborne magnetic targets. The purpose of this was to collect heavy mineral kimberlitic indicator grains to help in the search for kimberlites. The loam samples were sent to IDL laboratory in Perth for processing. The two samples were then sent back to FMS for in house observation, the raw data and observations are attached to this report.

One sample came back positive for eclogitic garnet, while the other was negative for all indicators. The sample locations can be seen in Figure 3.

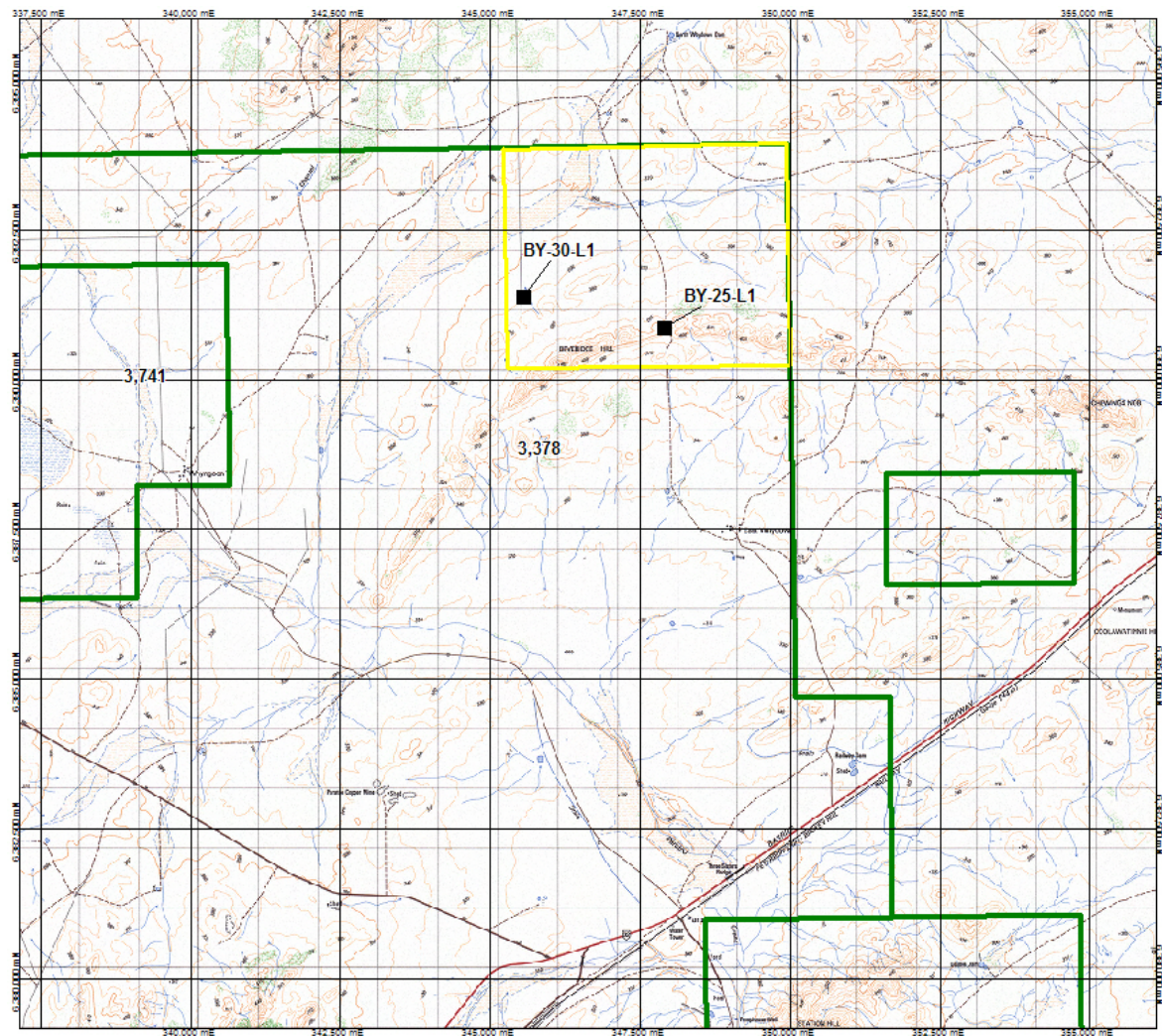


Figure 3: Heavy Mineral Sample Locations

7.2.2 Geochemistry

Both samples collected for HMS were also sampled for geochemistry and sent away for analysis to ALS Chemex Adelaide. The samples underwent MEMS41 and Au-AA21 looking for a whole suite of elements and paying particular attention to elements such as Nb, Ni, Cr, REE which are typically elevated when in proximity to a kimberlite. The results weren't overly encouraging with no major elemental anomalies. Both geochemical samples collected are visible in Figure 4.

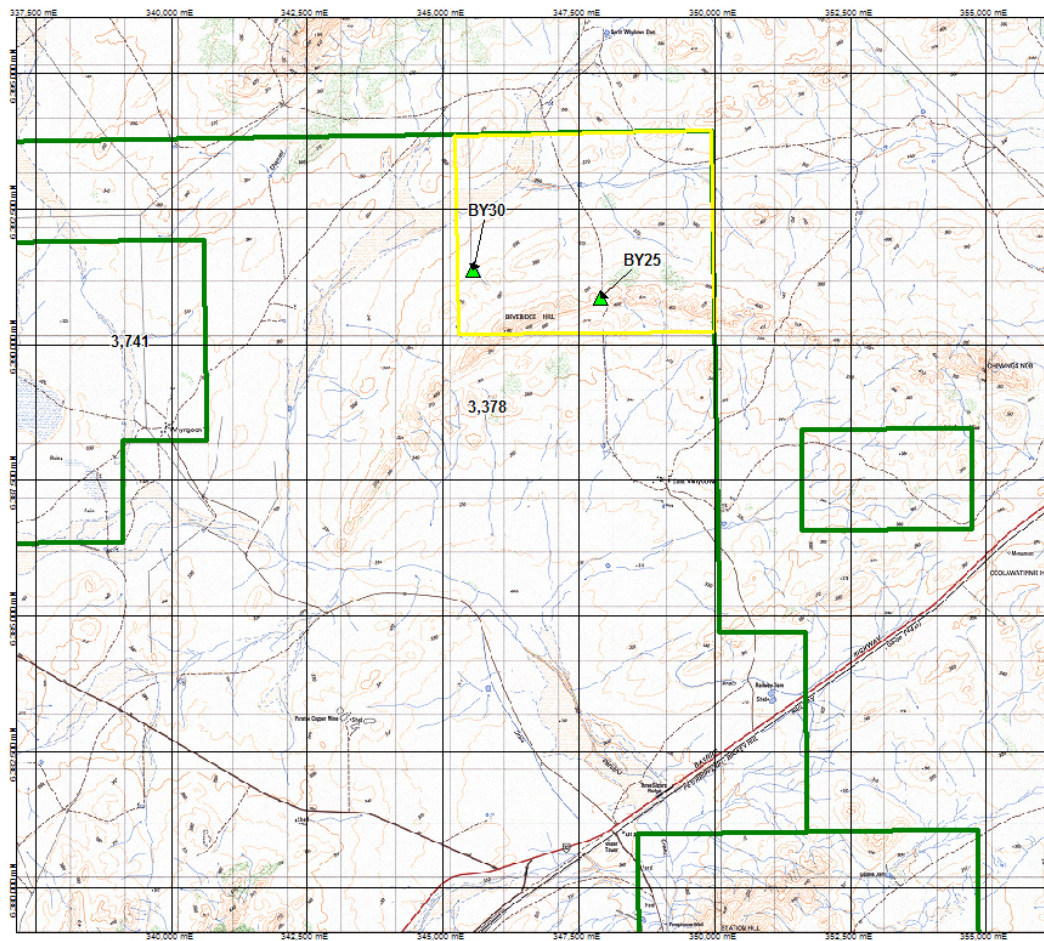


Figure 4: Geochemical Sample Locations

8. Conclusions

Preliminary interpretation of the high resolution heli-magnetic survey failed to identify any favourable magnetic anomalies within the areas relinquished. Results for kimberlite indicator minerals and geochemical analysis were not encouraging and it was decided that no further work was warranted.

9. References

- Anderson, B. E., 2006** Flinders Ranges Project Annual Technical Report, Flinders Diamonds Limited, July 2006. *FDL Report 05/18*
- Colchester, D.M., 1980.** Geology and petrology of some kimberlites near Terowie, South Australia. New South Wales institute of technology (Sydney). MAppSc thesis (unpublished).
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- Cole, L.F., 2008.** Flinders Ranges Project Rehabilitation Report. *FDL Report 08/02*
- Curtis, J.L., 2000.** Diamond Exploration – Exploration Licences 2603 and 2723, SA July 2000. *Report No. NDP 1/00*
- Curtis, J.L., 2003.** Diamond Exploration – Exploration Licence 2723, SA June 2003. *Report No. NDP4/03*
- Simnovec, J.J. et al., 2001.** EL 2603. Annual technical Report for the period ending 25 June 2001, Nackara *Report No. NDP 2/01*