Mega Georgetown Pty Ltd

EPM 14827 – ROCKYS PROJECT

REPORT FOR THE AREAS RELINQUISHED ON 13 SEPTEMBER 2013

Licensee: Mineral Development Australia Pty Ltd

Ian Mathison

November 2013

Distribution:

DNRM – Queensland Mines and Energy

Mega Georgetown Pty Ltd

Table of Contents

List of Figures

List of Tables

List of Appendices

SUMMARY

Exploration Permit for Minerals (EPM) 14827 is held in the name of Mineral Development Australia Pty Ltd (MDA). MDA is a fully owned subsidiary of Mega Georgetown Pty Ltd (Mega). Mega in turn is a fully owned Australian subsidiary of Mega Uranium Ltd, a company listed on the Toronto Stock Exchange. EPM 14827 was granted to MDA on 13 September 2005. In 2005, Mega Georgetown and Georgetown Mining Limited (GML) entered into a joint venture agreement covering EPM 14827 and most of the remainder of Mega and GML's tenement holdings. Within the area covered by the joint venture, GML acquired or retained the right to develop any gold or base metal deposit discovered while Mega acquired or retained the right to develop any deposit of uranium discovered. Exploration within EPM 14827 is still covered by this joint venture agreement. The GML rights were transferred to Deutsche Rohstoff Australia Pty Ltd (DRA) in May 2009. JKO Mining Ltd (JKO) purchased all shares in DRA in October 2012.

This report provides details of all exploration conducted by Mega and GML/Plentex/DRA/JKO within the area of the three sub-blocks of EPM 14827 relinquished at the end of the eighth year of tenure, 13/09/2013. (See Fig 1)

Exploration by Mega and DRA/GML failed to detect indications of potentially economic gold, base metal or uranium mineralisation within the areas of EPM 14827 relinquished on 13 September 2013. Esso drilling intersected patchy and low grade uranium mineralization at LE74. Based on all available data no further exploration is warranted within these areas.

Exploration in the relinquished portion of EPM 14827 comprised:

- Compilation of previous exploration data
- Interpretation of structures and targets from the regional data
- Acquisition of SPOT satellite imagery.
- Acquisition of high resolution Airborne Radiometric and Magnetic data – UTS survey A775 flown in October-December 2006.
- Interpretation of linear features on satellite images, radiometric images, aeromagnetic images and regional geology
- Identification of target areas for uranium mineralisation using all available data.
- Classification of all targets and ground follow up of selected anomalies with reconnaissance geological mapping and ground radiometric surveys (W Herrmann)
- Further processing and interpretation of airborne radiometric data (Grant Donnes).
- Acquisition of ALOS imagery over the area.
- Ground radiometric surveys over selected anomalies.
- 3D interpretation of known mineralization using Leapfrog software.

Work undertaken by GML/DRA/JKO comprised:

- Compilation of the results of previous exploration of the area.
- Interpretation of radiometric and aeromagnetic images supplied by Mega

There was no ground exploration activity by GML, DRA or JKO within the report area.

1.0 INTRODUCTION

EPM 14827 is located within the Georgetown Inlier in central North Queensland. In summary, the Georgetown Inlier consists largely of variably metamorphosed and deformed sedimentary and volcanic rocks of Proterozoic age - the Etheridge and Langlovale Groups. These rocks are intruded by several Proterozoic, Silurian-Devonian and Carboniferous-Permian granitoids (Denaro et al 1997).

Results of all exploration conducted within EPM 14827 by Mega before 14 September 2012 have been reported in annual and relinquishment reports compiled by Mega. Annual reports are listed in Section 11 - References.

Previous regional exploration within EPM 14827 has covered 171 sub-blocks in total, 165 of which had been relinquished by 13 September 2012. At the end of the current reporting period, Mega held 6 sub-blocks under joint venture arrangements with JKO. The joint venture agreement allows Mega to explore Mega's tenements and some JKO tenements in the Georgetown region for uranium and associated metals, while JKO can explore the same areas for gold and base metals.

An additional three sub-blocks were relinquished on 13/09/1 the end of the eighth year of tenure. This report provides details of all exploration conducted by Mega and GML/DRA/JKO within these three sub-blocks, the report area. (See Fig 1).

In mid 2006, Mega Georgetown set up a permanent exploration base at Georgetown from which to conduct exploration on tenements in that area. Exploration during the first year of tenure focussed on compilation and interpretation of previous exploration and geological reconnaissance of selected targets and areas of known mineralization. Mega flew a high resolution airborne radiometric and magnetic survey (UTS survey A775) over the Georgetown, Maureen and West Newcastle Range areas in late 2006. This survey covered all of EPM 14827.

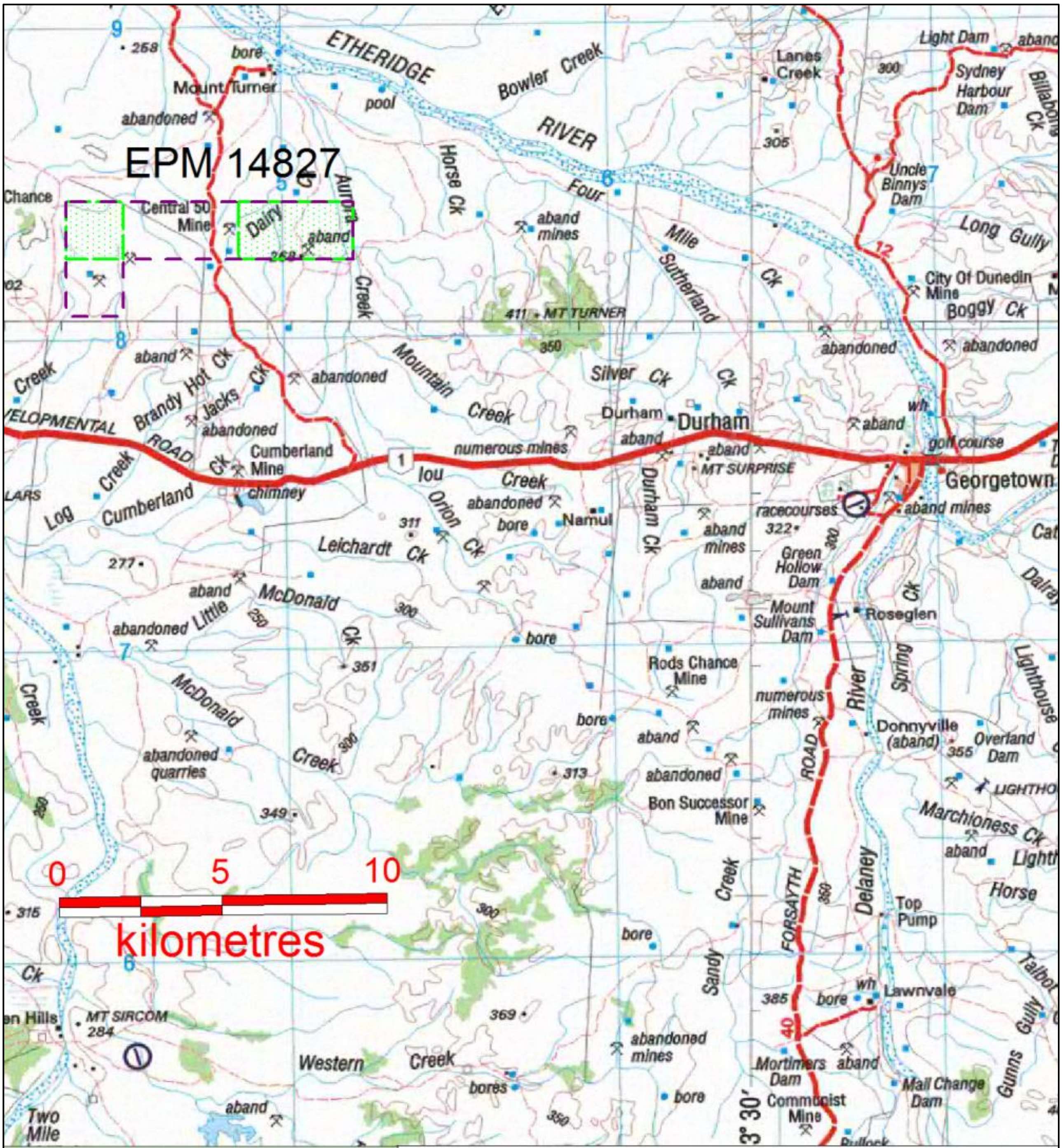
During the second year, the exploration strategy changed significantly with an emphasis on a more detailed evaluation of the geological setting of known mineralisation and ground follow up of selected radiometric anomalies, with an aim to refine targeting. The results of the A775 survey were processed and imaged and the processed and imaged data were interpreted. Selected anomalies were followed up by ground geological reconnaissance and gamma ray scintillometer surveys. No anomalies investigated during this phase lie within the report area.

During 2008, exploration was focussed on the Lineament prospect (LC50) and the Drummer Fault Zone. RC and diamond drilling was completed at LC50 and Dose Rate and Assay Mode radiometric surveys were completed along the Drummer Fault Zone. A775 data was again processed and interpreted by Grant Donnes in August 2008 (Donnes 2008). Anomalies identified by Z followed by a number were recognized and prioritized. Four Z series anomalies lie within or close to the report area.

Exploration during 2009 investigated selected Z series anomalies using geological reconnaissance and high resolution ground radiometric (GRAD) surveys. The Z140 and Z153 anomalies were investigated as the Z140 GRAD area

In 2010 an interpretation of the 2008 GRAD surveys along the Drummer Hill Fault Zone (DHFZ) was presented. (Clifford 2010) No ground exploration was conducted within the report area during 2010, 2011 and 2012.

During 2013 the Somerset GRAD area and the LW30 GRAD area were surveyed. Parts of these areas lie within the report area. The existing GRAD survey over the LE72 or LE74 area was extended and infilled. 3D modelling of the LE74 mineralization and geology was attempted. Although a broad zone of mineralization was delineated, uranium mineralization at LE74 appears too patchy and low grade to be modelled successfully with Leapfrog.



EPM 14827 relinquished on 13/09/2013

EPM 14827 before 13/09/2013

Fig 1 EPM14827 Location

Mineral Development Australia Pty Ltd

	Georgetown Project Area **EPM 14827** **Annual Report** **Period Ended 13/09/2013**
Date: 19/09/2013	
Author: Ian Mathison	
Office: Georgetown	**Location EPM 14827**
Scale: 1 : 200 000	
	Projection: MGA Z54 GDA94

2.0 TENURE

EPM 14827 is held by Mineral Development Australia Pty Ltd (MDA). MDA is a fully owned subsidiary of Mega Georgetown Pty Ltd (Mega). Mega itself is a fully owned Australian subsidiary of Mega Uranium Ltd, a company listed on the Toronto Stock Exchange. The tenure was granted to MDA on 14 September 2005 for a term of five years.

When granted, the EPM covered 171 sub-blocks. The tenement was reduced to 53 sub-blocks in 2007. This was further reduced to 27 sub-blocks in 2008, 20 sub-blocks in 2009, 11 sub-blocks in 2010 and six sub-blocks in 2012. The boundaries of the current extent of EPM 14827 and the areas relinquished are drawn on Fig 1, Location and Fig 2, Geology. The six sub-blocks explored in 2013 are listed in Table 1 below.

Three sub-blocks were relinquished at the end of the eighth year of tenure. The boundaries of the relinquished areas are drawn on Fig 1 and Fig 2.

Table 1 Area of EPM 14827 relinquished on 13/09/13

Block Identification Map	**Block**	**Sub-blocks**	**Number of sub-blocks**
NORM	1936	T	1
NORM	1937	R .S	2
Total number of sub-blocks relinquished.			3

Table 2 Area of EPM 14827 retained on 13/09/13

Block No	Sub-block	No
1936	U Y	2
1937	Q	1
	Total sub-blocks retained	3

3.0 LOCATION AND ACCESS

EPM 14827 is located 20 km west of Georgetown in North Queensland. EPM 14827 covers unimproved pastoral land and is located on the 1:250 000 map sheet Georgetown (SE54-12); and on the 1:100 000 sheet Forest Home (7561)

Access to the EPM is via the sealed Gulf Development Road and the unsealed Mt Turner Road. Within the EPM, vehicular access is restricted to unsealed station tracks and drill access tracks which provide good dry weather 4WD access to all parts of the EPM. (See Fig 1)

4.0 TOPOGRAPHY AND CLIMATE

Topography over the Georgetown area is generally subdued with low mesas and wide floodplains being the principal geomorphological features.

Vegetation generally consists of open eucalyptus forest and medium scrub with moderate to heavy stands of lancewood, typically occurring in areas of lateritic soil and on remnant mesas and ridges of Mesozoic sediments. The land is used predominantly for cattle grazing.

Climate is tropical with monsoonal rains occurring from November through to March. Winter is usually dry. Temperatures can exceed 40° in summer, whereas winter temperatures are mild.

5.0 REGIONAL GEOLOGY

5.1 Georgetown Inlier

The region is dominated by rocks of the Precambrian Georgetown Inlier, which consists largely of variably metamorphosed and deformed sedimentary and volcanic rocks of Palaeoproterozoic age - the Etheridge and Langlovale Groups and the Cobbold Metadolerite. These are intruded by Mesoproterozoic, Silurian-Devonian and Carboniferous-Permian granitoids. Fluviatile siliciclastic and variably feldspathic and lithic sediments of the Gilberton Formation were deposited in isolated basins on the older rocks during the Late Devonian to Early Carboniferous. Centrally and along the north-western and western margin extensive Carboniferous-Permian felsic volcanics and related sub-volcanic intrusives of the Kennedy Province occupy a broad north-south subsidence zone and associated cauldron structures. The western and central parts are variably overlain by scattered remnants of Mesozoic sedimentary rocks, and the eastern part, by Cainozoic basalt.

Within the Inlier, metasedimentary rocks belonging to the Palaeoproterozoic Etheridge group are exposed in a broad discontinuous northerly trending belt, younging westwards in the central-eastern part of the Forsayth Sub-province of the Etheridge Province. The Forsayth Sub-province includes the Etheridge and Langlovale Groups, various mafic intrusive rocks and Mesoproterozoic granitoids of the Forsayth, Lighthouse, Sawpit and Forest Home Supersuites. The metasedimentary sequence was deposited in a uniformly subsiding continental setting between about 1700Ma, and at least as young as 1650Ma. The Etheridge Group underwent a major metamorphism and deformational event at about 1550Ma, at which stage multiple deformed, amphibolite-grade metasediments were intruded by composite syntectonic granitoid batholiths (mainly Forsyth Batholith). Metamorphic grade within the group decreases south-westwards.

5.2 Gilberton Formation

The Late Devonian to Early Carboniferous Gilberton Formation rests unconformably on Proterozoic metamorphic rocks and Proterozoic and Silurian to Early Devonian granitoids. It consists of a group of fluviatile sedimentary rocks preserved as thin, discontinuous sheets or lenses beneath Carboniferous volcanic sequences and crops out sporadically around the margins of the Kennedy Province volcanic complexes.

The Formation is composed of immature and poorly sorted epiclastic sedimentary rocks, mainly quartzose to feldspathic sandstone and polymictic conglomerate; mudstone and siltstone are subordinate. The few known limestone lenses tend to be nodular. Most of the clastic material is of local derivation from subjacent or nearby basement rocks. Minor volcanoclastic material occurs locally.

Two extensively altered basaltic andesite-to-andesite lava units occur within the Formation, one at the south-eastern edge of the Newcastle Range and the second, in the Dismal Creek area.

5.3 Kennedy Province

The Kennedy Province is a major, late Palaeozoic, post orogenic igneous suite comprising a broad, diffuse zone of volcanic rocks and spatially associated granitoid and sub-volcanic intrusives. Several volcanic groups are recognised in the Province: Butlers, Cumberland Range, Maureen, Newcastle Range, Agate Creek and Mount Little Volcanic Groups.

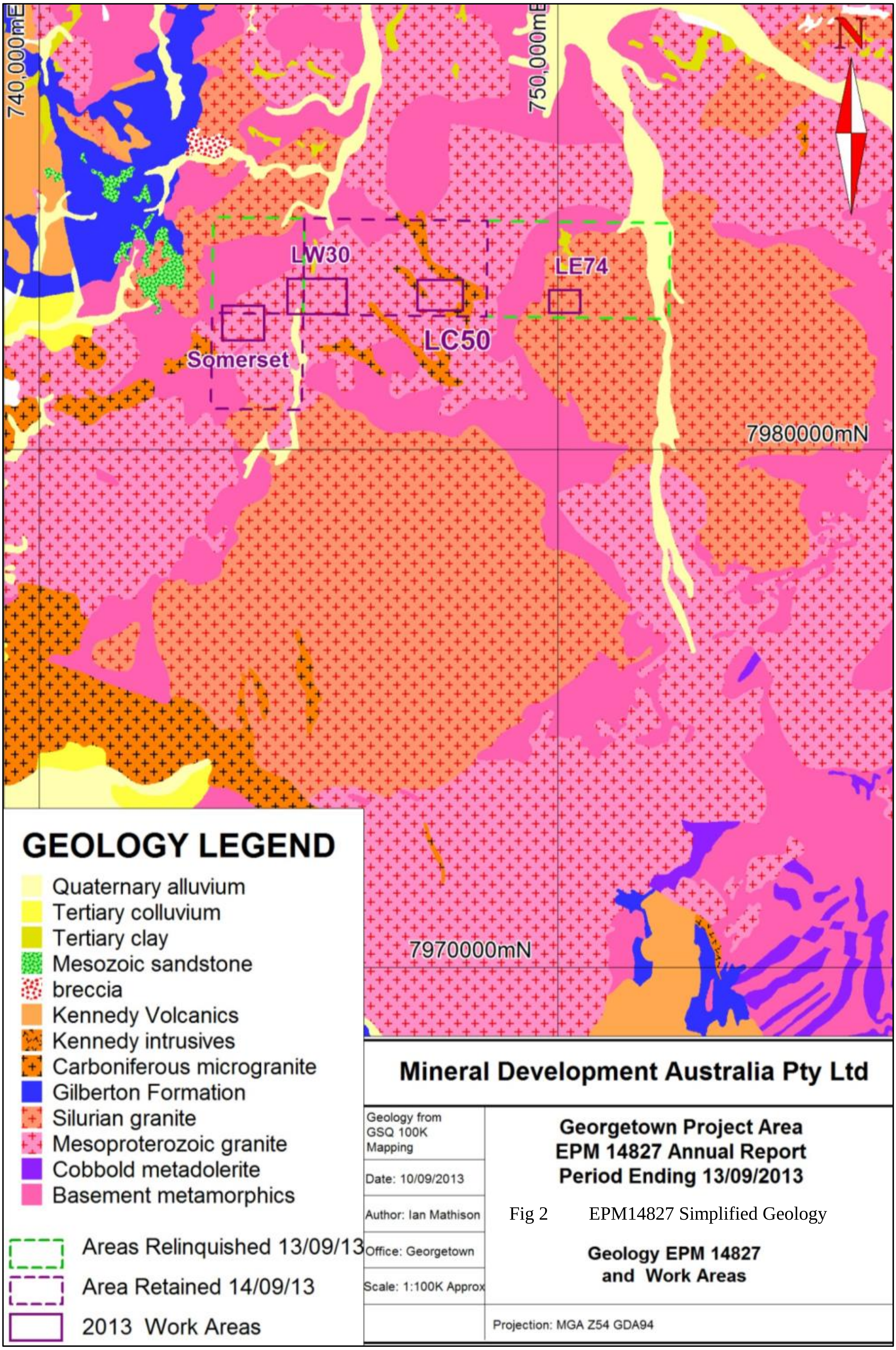


Fig 2 EPM14827 Simplified Geology

6.0 PREVIOUS EXPLORATION

Numerous companies and individuals have explored the Georgetown Inlier over the past two decades. Commodities and target models sought have included:

- Gold in Proterozoic/Palaeozoic granitoids and metasediments,
- Base metals in Proterozoic metasediments
- Uranium in Palaeozoic siliciclastic sediments underlying the Permo-Carboniferous Kennedy Province volcanics
- Uranium in basal units of the Permo-Carboniferous Kennedy Province volcanics
- Uranium associated with mafic dykes intruding along fault zones

The most important geological units in the Georgetown Inlier, in terms of uranium prospectivity, belong to the Gilberton Formation and to the Kennedy Province with most significant uranium occurrences, anomalies and anomaly groups in the region occurring at or near the contact between the Proterozoic basement rocks and either the Gilberton Formation or Kennedy Province volcanic rocks and intrusive dykes related to the Kennedy Province volcanics.

Gold deposits of the Etheridge Goldfield occur typically as quartz veins or quartz-sulphide veins with associated carbonate and mica. Sulphide minerals include pyrite, arsenopyrite, galena, chalcopyrite and sphalerite. Gold mineralising events are related to periods of acid igneous intrusive activity ranging in age from Silurian to Permian.

Other exploration targets in the vicinity of EPM 14827 have included Kidston and Mt Leyshon style gold deposits, and porphyry copper-molybdenum deposits similar to Mount Turner.

7.0 Exploration Targets

Mega and DRA/JKO have very different target models for the Georgetown area. DRA focusses on gold and associated base metal deposits while Mega focusses on uranium with associated molybdenum and fluorite.

7.1 Mega's Target Models

Mega's primary target models are Maureen style deposits hosted by sediments above the unconformity between the Gilberton Formation siliciclastic rocks or epiclastic rocks at the base of the Permo-Carboniferous volcanics and the crystalline basement rocks of the Georgetown Inlier. Secondary targets are structurally hosted uranium deposits similar to The Lineament Central 50 (LC50) deposit or the mineralisation hosted by the Apollo Structure at Twogee.

Mega's exploration techniques include processing of regional airborne geophysical data and geological mapping, acquisition of high resolution airborne radiometric and magnetic data, interpretation of radiometric anomalies, acquisition of SPOT and ALOS satellite imagery, interpretation of structural settings from airborne geophysical data and satellite imagery, ground geological and radiometric follow up of selected anomalies, detailed ground radiometric surveys with geological mapping, and RC and diamond drilling.

7.2 DRA/JKO's Target Models

DRA/JKO have concentrated on finding gold deposits similar to the Red Dam and Electric Light deposits where the gold is hosted by silicified rocks or quartz veins within fault or fracture systems close to Palaeozoic acidic intrusives. Other secondary targets are gold + base metal deposits in structural settings and porphyry hosted gold deposits ± copper.

DRA's exploration procedures included selective rock chip sampling of outcropping mineralisation, traditional soil sampling, recognition of positive and negative aeromagnetic anomalies possibly related to intrusive porphyries, reconnaissance geological follow up of aeromagnetic anomalies, MMi soil sampling and RC and diamond drilling.

8.0 WORK COMPLETED IN THE RELINQUISHED AREA OF EPM 14827

Exploration within the report area is summarized as:

- Compilation of previous exploration data relevant to uranium mineralisation
- Interpretation of structures and targets from the regional data
- Acquisition of SPOT satellite imagery.
- Acquisition of high resolution Airborne Radiometric and Magnetic data – UTS survey A775 flown in October-December 2006.
- Interpretation of linear features on satellite images, radiometric images, aeromagnetic images and regional geology
- Identification of target areas for uranium mineralisation using all available data.
- Classification of all targets and ground follow up of selected anomalies with reconnaissance geological mapping and ground radiometric surveys
- Ground reconnaissance follow up and literature review of selected anomalies. (W Herrmann)
- Further processing and interpretation of airborne radiometric data (Grant Donnes).
- Acquisition of ALOS imagery over the area.
- Ground radiometric surveys over selected anomalies.

Work undertaken by GML/DRA/JKO involved:

- Compilation of the results of previous exploration of the area.
- Interpretation of radiometric and aeromagnetic images supplied by Mega

There was no ground exploration activity by GML/DRA/JKO within the report area.

8.1 Regional exploration

Regional data sets including government geological mapping, regional airborne geophysical data and the results of previous exploration were compiled and interpreted. A high resolution airborne radiometric and magnetic survey, UTS A775 was commissioned. Data were processed and imaged by Geoimage, and subsequently by Grant Donnes.

8.2 Anomaly Selection and Classification

Following the acquisition of the UTS A775 airborne radiometric and magnetic data, Wall and Herrmann recognised the V set of radiometric anomalies. Herrmann classified these according to their radiometric, geological and structural characteristics and gave them a numerical ranking. No V series anomalies lie within the report area.

In 2008, Donnes reinterpreted all available geophysical data and recognised a Z set of anomalies. These were ranked Priority 1, Priority 2 and Priority 3 based on their radiometric characteristics. All airborne radiometric anomalies recognised within the report area are tabulated in Section 9.2 below.

8.3 Interpretation of Drummer Fault ground radiometric data

In 2008, Mega Georgetown field crews conducted ground radiometric surveys over the Lineament Prospect (LC50) and extensions of the Drummer Fault Zone east and west of LC50. Initially a

DoseRate survey was read at nominal five metre spacing along north-south lines 40m apart. This line spacing was reduced to 20m in selected area. Dose rate data were collected using a GT Instruments Gamma Surveyor multi channel gamma ray spectrometers in continuous DoseRate mode at waist height. Reading times were set to five seconds and personnel walked at a slow walking pace along flagged north-south lines. Location control was by Garmin GPSMAP 60Cx GPS receivers linked directly to the spectrometer.

Selected areas were also surveyed using the high resolution Assay Mode. First pass readings were collected at 5m intervals along north-south lines 40m apart. Line spacing was reduced to 20m over the main part of the anomaly. For Assay Mode, the instruments were set to Assay Setting reading in point mode for one minute intervals. During reading time the instrument was placed on a folding canvas stool approximately 40cm above ground level. Again all data were reported in Mathison et al (2009).

In early 2009, Dr Bretan Clifford compiled data sets over the areas covered by Mega's ground radiometric surveys and produced several sets of images. Data from GSQ geological mapping, Mega's UTS A775 airborne radiometric and magnetic survey, historical drill hole locations, and Mega's 2008 "Assay Mode" ground radiometric surveys were combined in MapInfo.

These images and an interpretation of the results are given as Section 9.3 below.

In late 2009 and early 2010 Dr Clifford revisited the data sets and by improving data processing techniques improved the 2009 interpretation. His report is appended as Appendix 1.

8.4 Ground Radiometric Surveys

Z140

Survey grids were laid out over the Z140 and Z153 radiometric anomalies recognized by Donnes (2008). North-south survey lines at 50m spacing were read at paced intervals approximately 5m apart. Following Mega's normal procedures in the Georgetown area, GF Instruments Gamma Surveyor Gamma Ray Spectrometers were used in assay mode with a one minute read time. The instruments rested on a folding canvas camp stool 40cm above ground level while reading. Locational data was collected by a Garmin GPSmap 60Cx connected directly to the spectrometer. During the one minute reading interval, the field technicians compiled a soil log describing soil colour, soil type and commented on the outcrop, vegetation and float around the survey point.

In the office, survey data and soil logs were collated and eU values were thematically mapped using MapInfo. Maps of each grid area and an interpretation of the survey results follow in Section 9.4.

LE72 or LE74

Additional assay mode stations were read at LE72/LE74 during 2013.

The combined 2008 and 2013 data set for LE74 was processed using MapInfo 10.5.1 and Discover 2011 software. Data was imaged using Ordinary Kriging with a cell size of 10m and a elliptical search ellipse generally 70m east-west and 30m north-south. As the main data set, the 2008 data, did not include soil data, the 2013 soil data were not used. Results are presented in section 9.4.

Correlation between the GT Gamma Ray Spectrometers and GPS instruments was checked by surveying marked points along a pegged line near the FW5 prospect on EPM 8452.

LW30

The western five lines of the LW30 GRAD survey lies within the relinquished area. The survey for this area was conducted using the same methodology as for Z140. Data was processed and images for eU, eTh, K and Doserate were produced.

Somerset

The northern part of the Somerset GRAD survey also lies within the relinquished area. The survey for this area was conducted using the same methodology as for Z140. Data was processed and images for eU, eTh, K and Doserate were produced.

8.5 3D Interpretation LE74

Preliminary interpretation of ESSO's drilling data using Leapfrog software produced models of the logged porphyries and dolerites. A broad outline of the mineralized zone was also modelled. However the available data did not allow detailed modelling of the uranium mineralization.

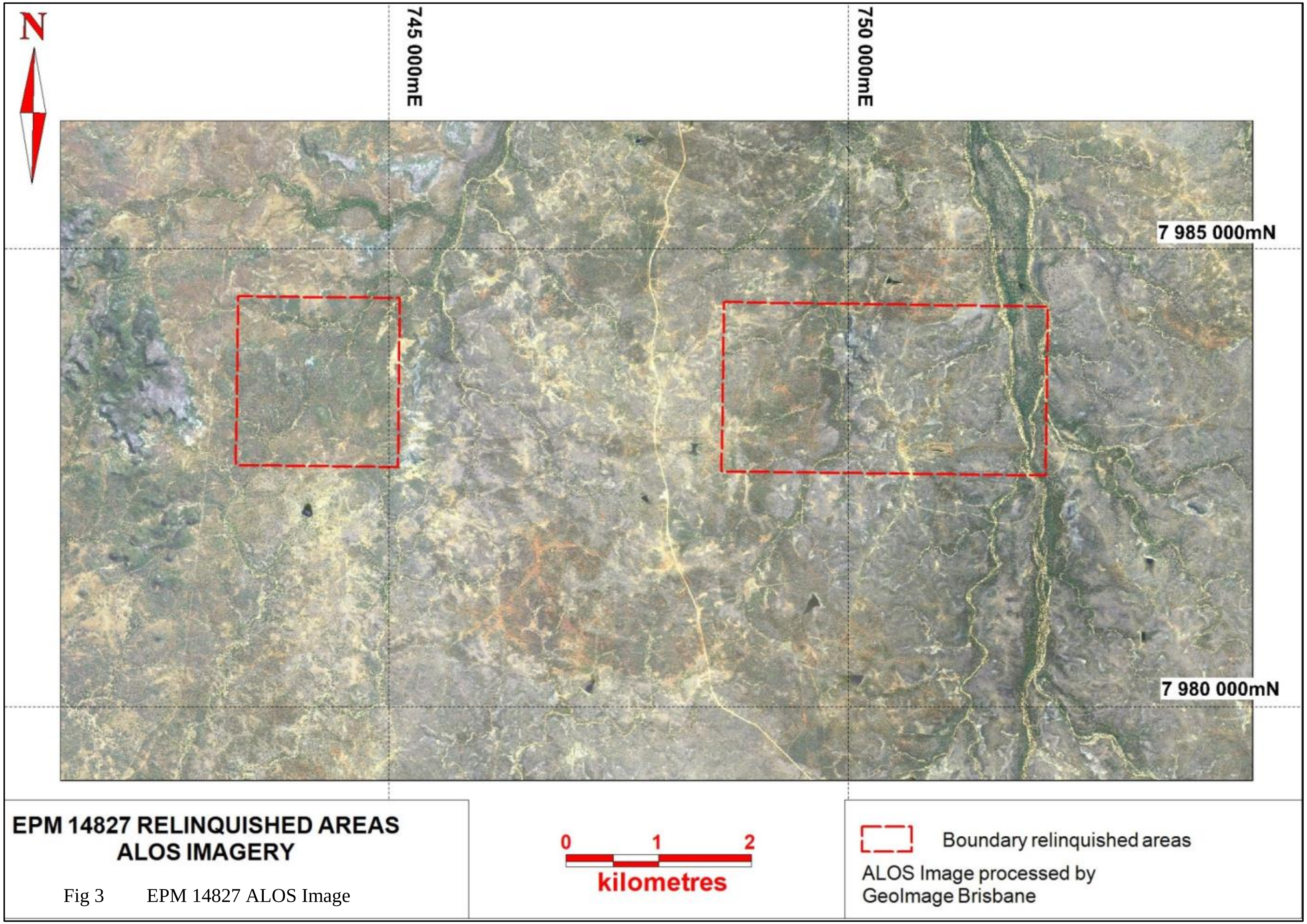
9.0 Results Received

Results of the work completed as reported in relevant annual reports are illustrated and discussed below. Satellite imagery and images of Airborne Radiometric Data and Aeromagnetic Data from the UTS A775 Airborne Survey are presented. Raw data from the A775 survey have been lodged with the Geological Survey of Queensland.

All relevant radiometric and drillhole data are appended as text files.

9.1 Regional Exploration

Processed images from SPOT satellite data, ALOS satellite data and UTS-A775 airborne radiometric and magnetic data are presented below.



EPM 14827 RELINQUISHED AREAS
ALOS IMAGERY

Fig 3 EPM 14827 ALOS Image

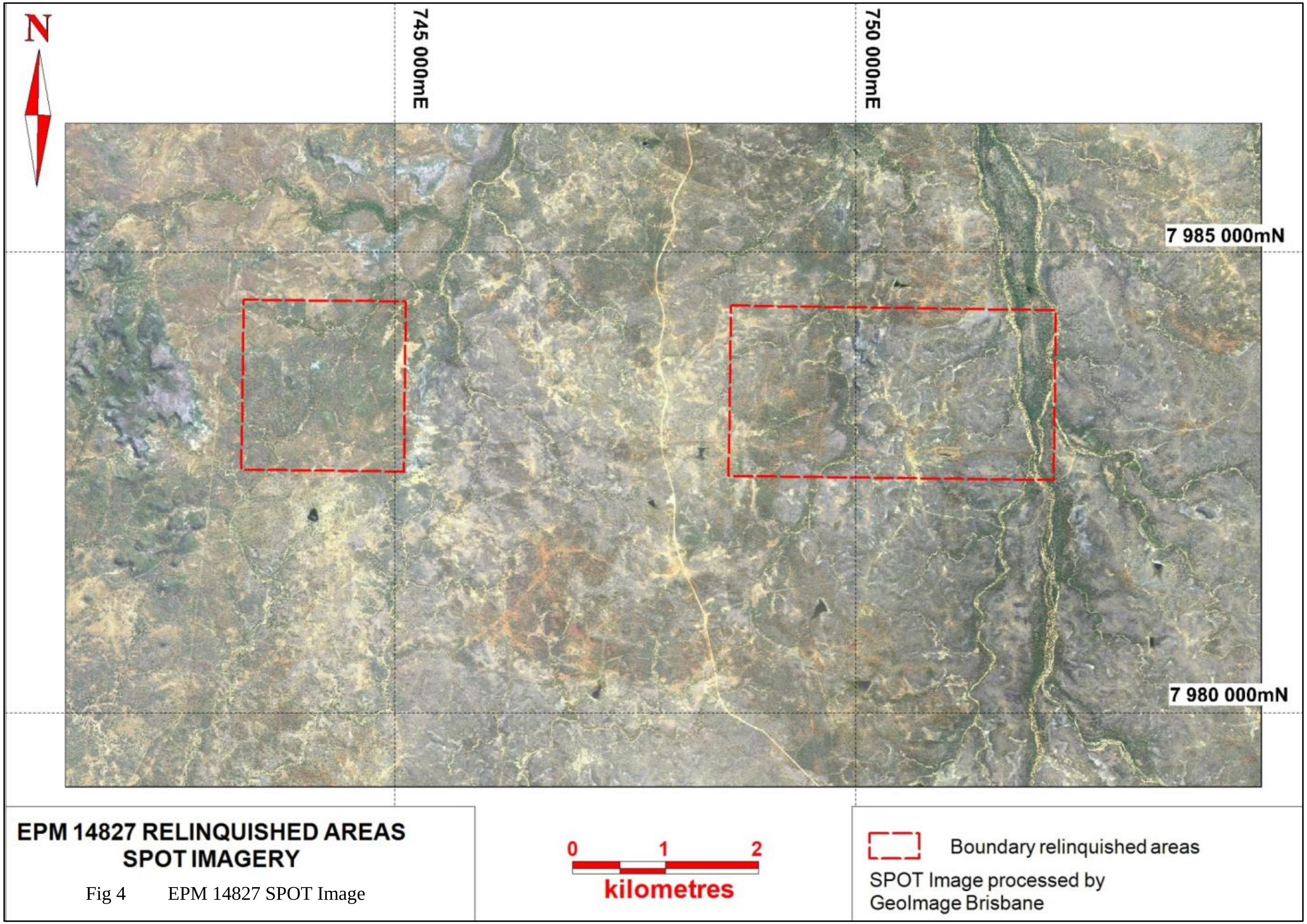
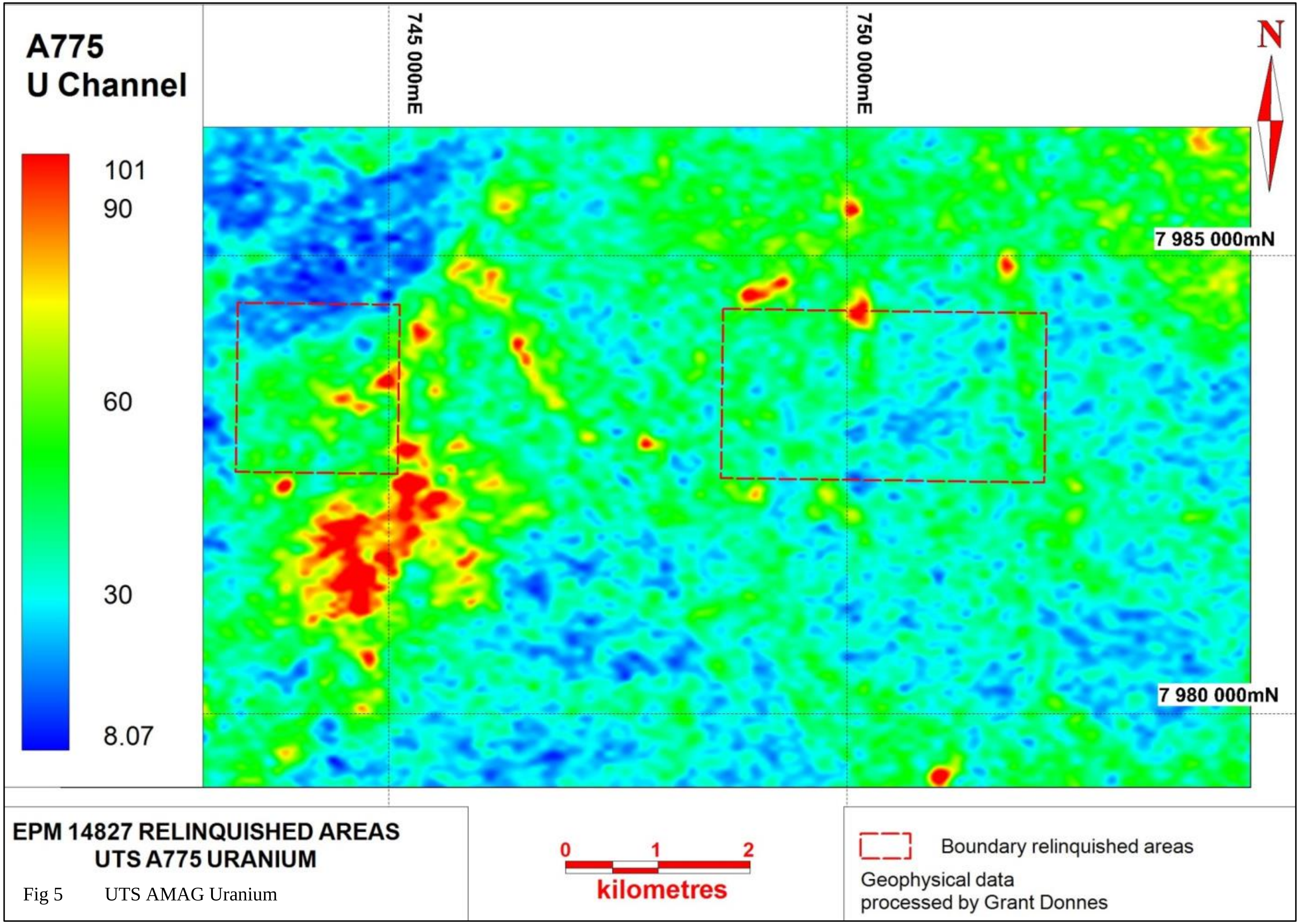
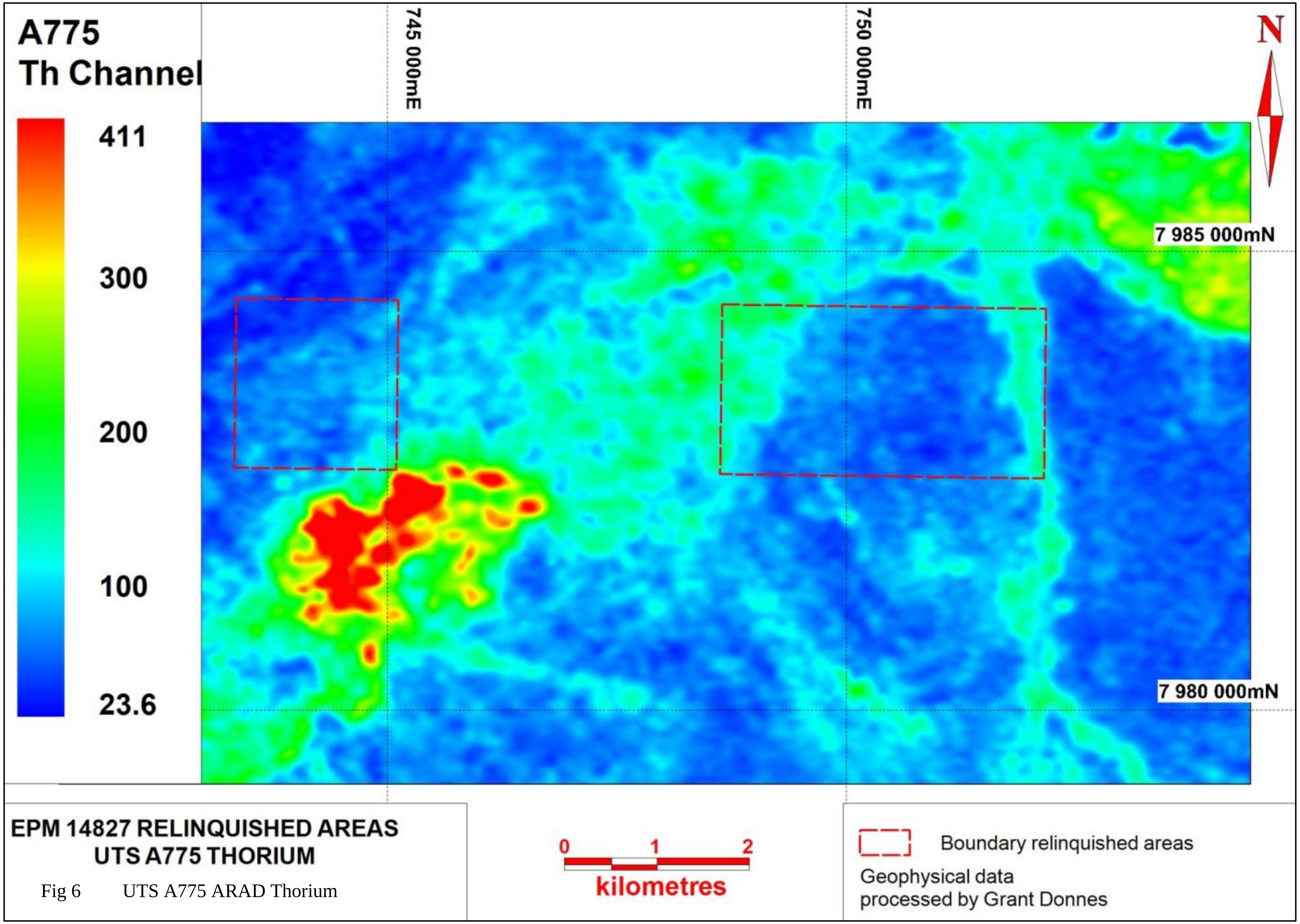


Fig 4 EPM 14827 SPOT Image



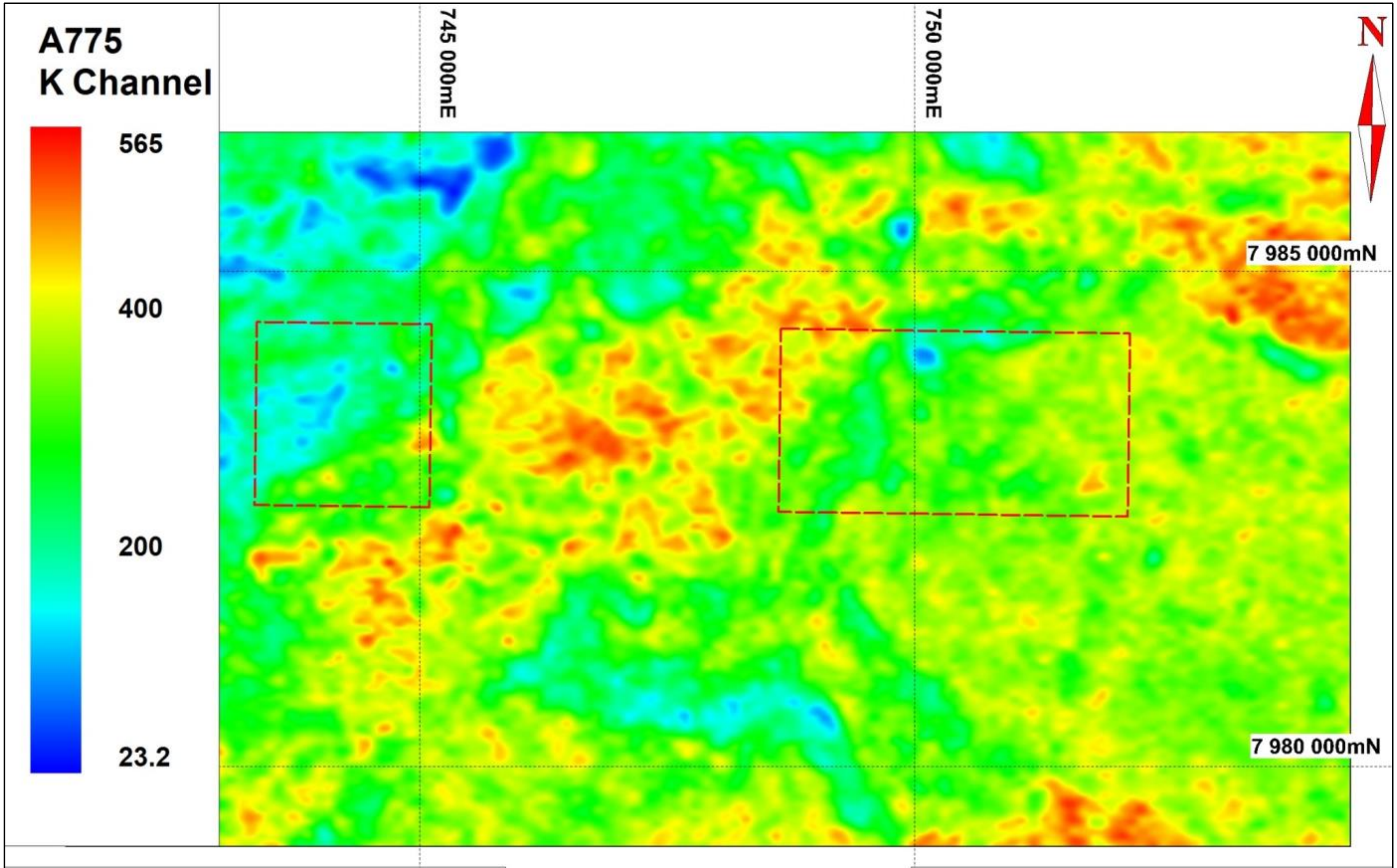
EPM 14827 RELINQUISHED AREAS
UTS A775 URANIUM

Fig 5 UTS AMAG Uranium



EPM 14827 RELINQUISHED AREAS
UTS A775 THORIUM

Fig 6 UTS A775 ARAD Thorium



EPM 14827 RELINQUISHED AREAS
UTS A775 POTASSIUM

Fig 7 UTS A775 ARAD Potassium

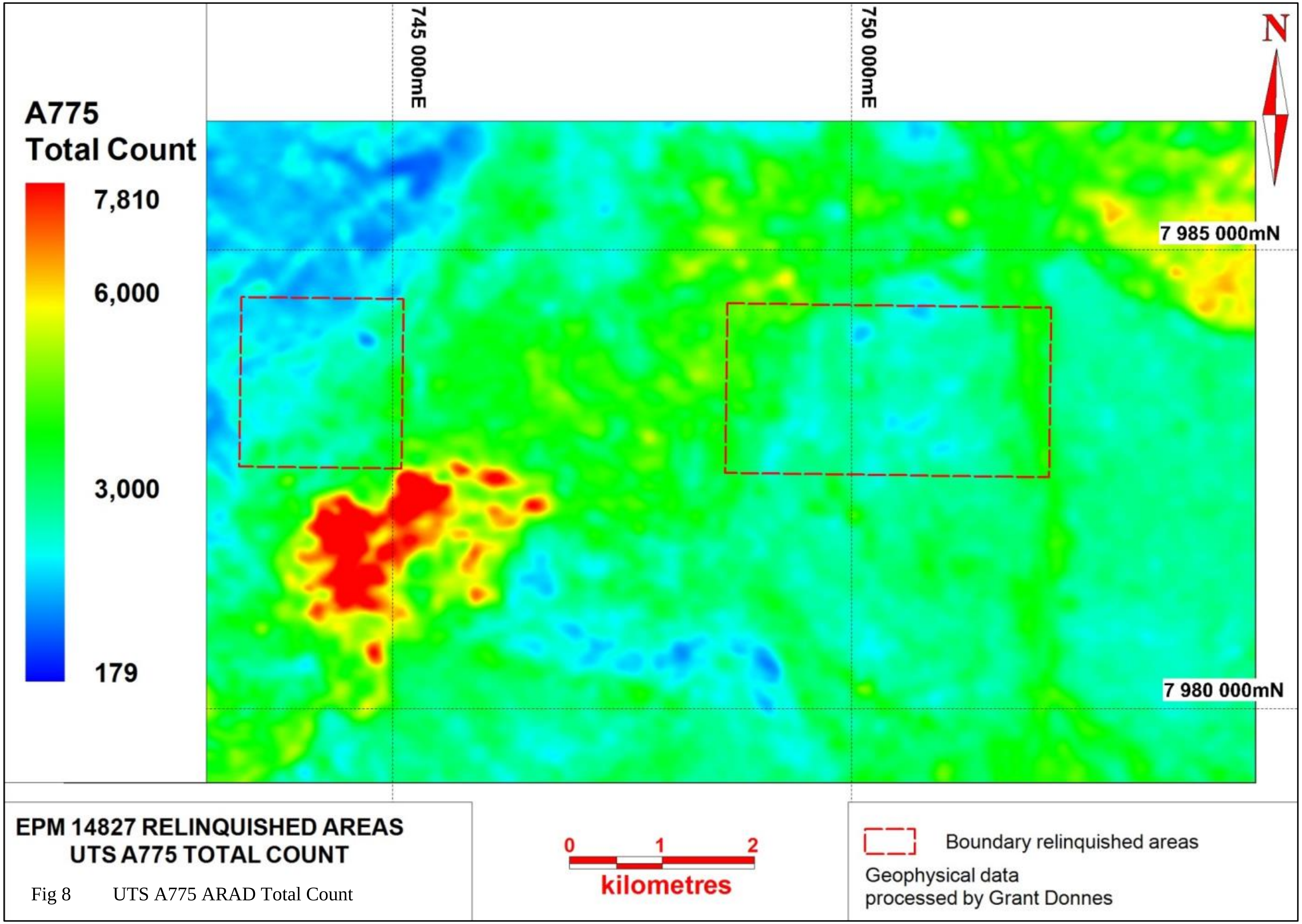


Fig 8 UTS A775 ARAD Total Count

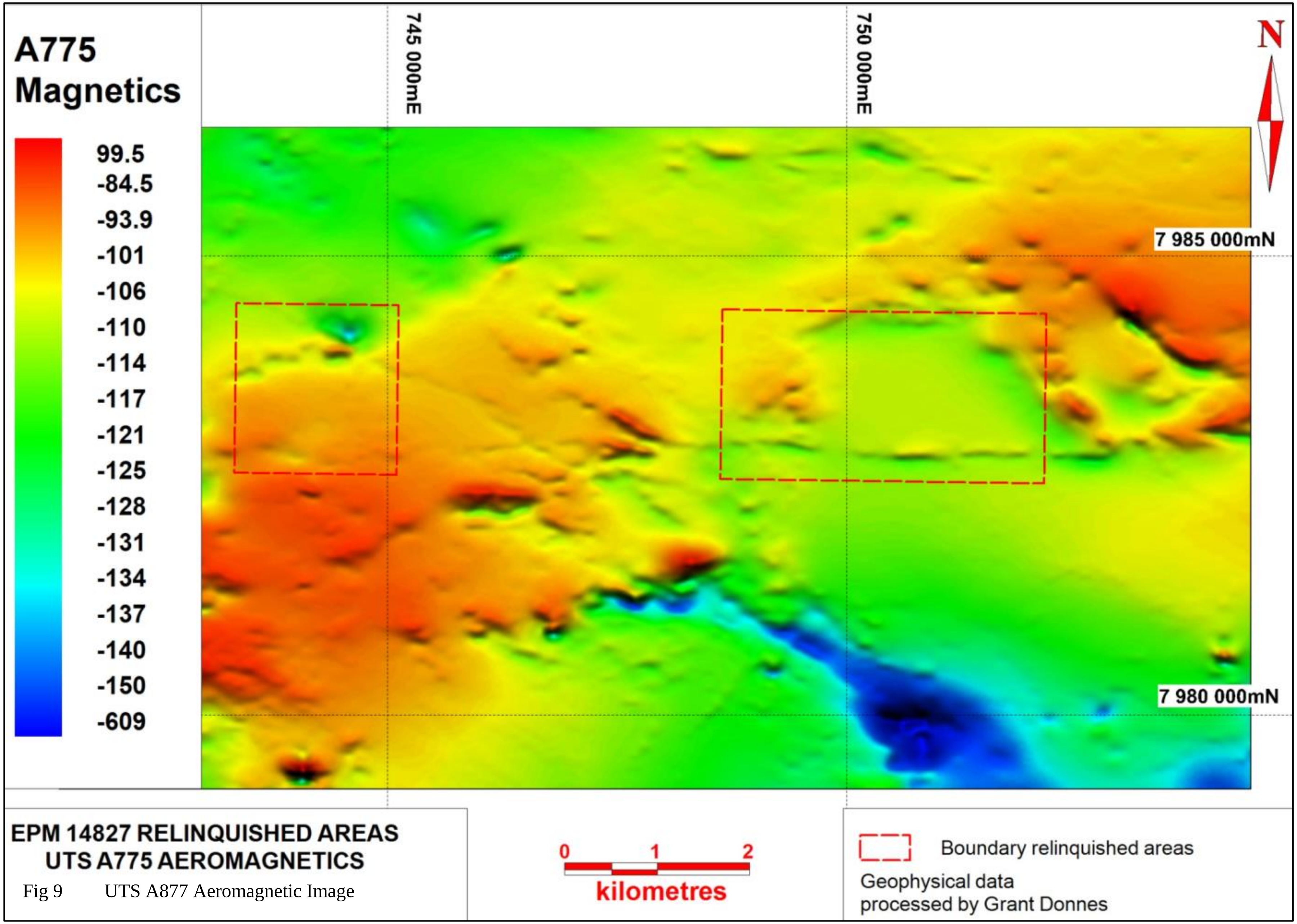


Fig 9 UTS A877 Aeromagnetic Image

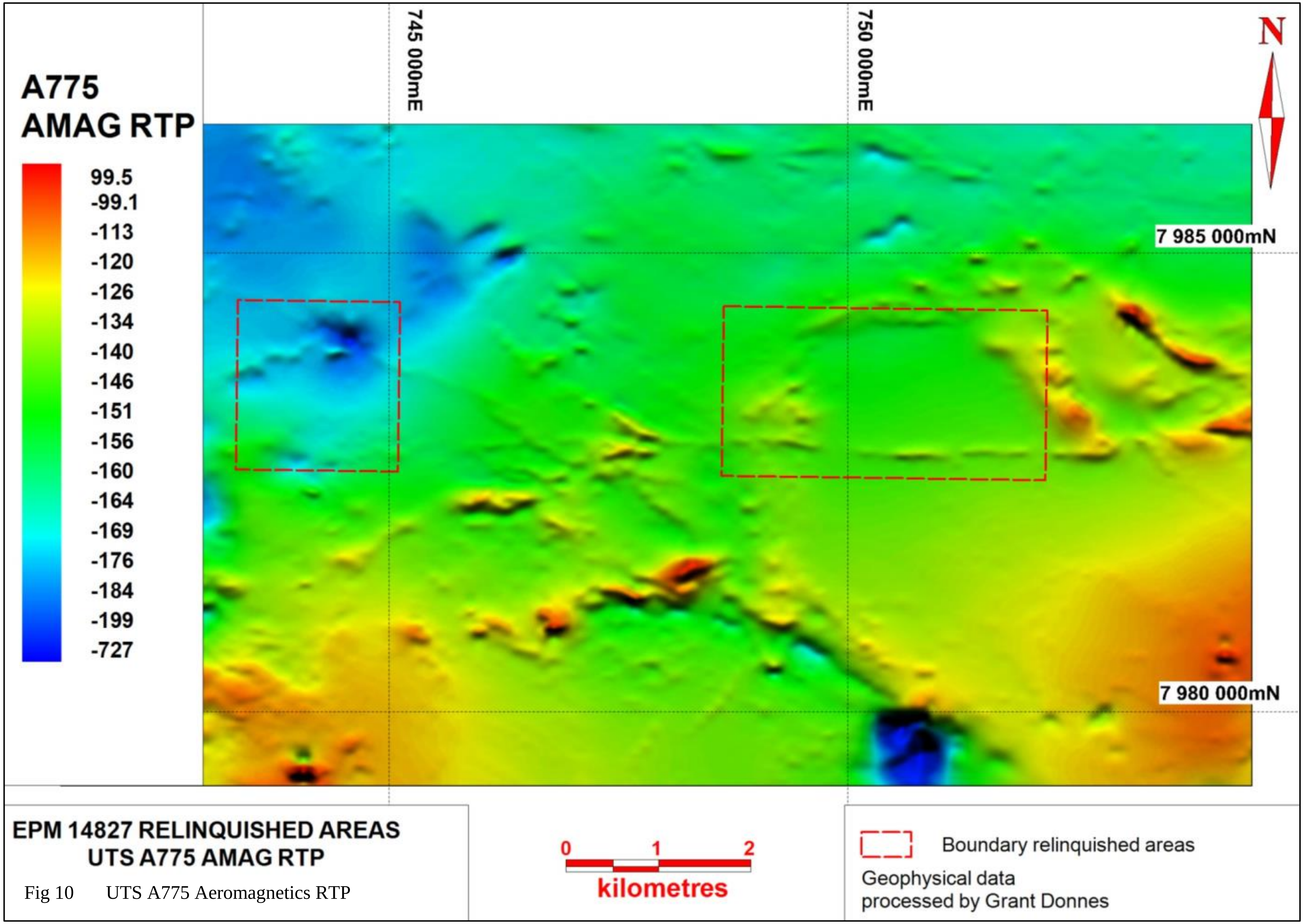


Fig 10 UTS A775 Aeromagnetics RTP

9.2 Airborne Radiometric Interpretation

Donnes 2008 recognised the following airborne anomalies within the report area.

Table 3 EPM 14827 Report Area - airborne radiometric anomalies.

Prospect ID	MGA East	MGA North	Location	ORIGINATOR	GD Priority	2009 Ground Radiometrics	Mega GRAD Grid
Z140	744503	7983445		GD	1	Yes	Z140
Z141	744990	7983627		GD	1		
Z147	750133	7984379		GD	1		
Z153	744697	7983352		GD	2	Yes	Z140

9.3 Drummer Fault Zone Interpretation

Although only part of the survey lies within the report area, the interpretations are presented in full except for sections which were entirely dedicated to retained areas and could be readily excised.

The figures presented in this section were compiled by Bretan Clifford. Comments are by Ian Mathison.

Dr Clifford further manipulated and interpreted the data in late 2009 and early 2010. This more detailed interpretation is appended as Appendix 1.

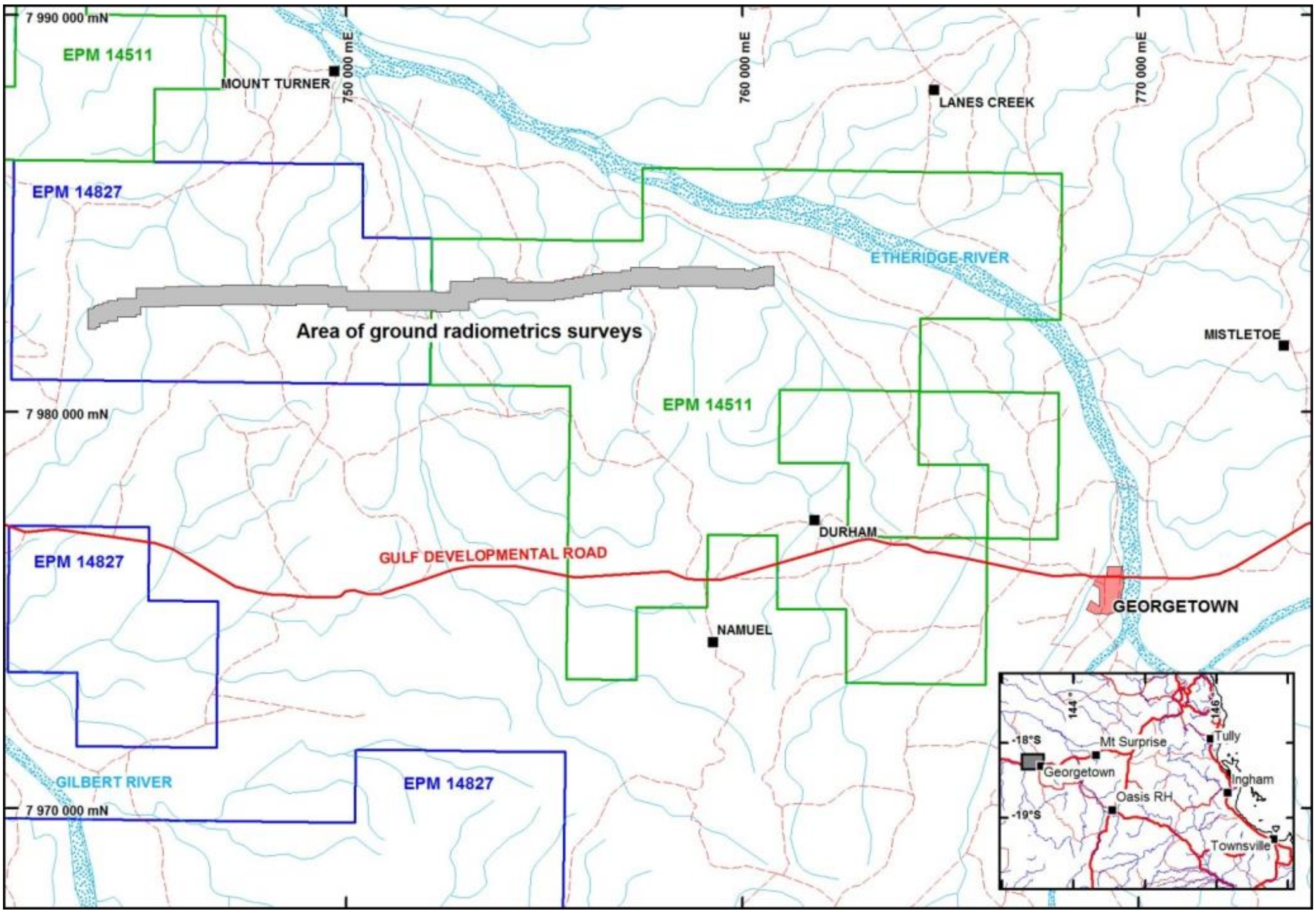


Fig 11 Location of Mega's 2008 Ground Radiometric Surveys

The survey covers parts of EPMs 14827 and 14511. Only the 14827 section is reported here.

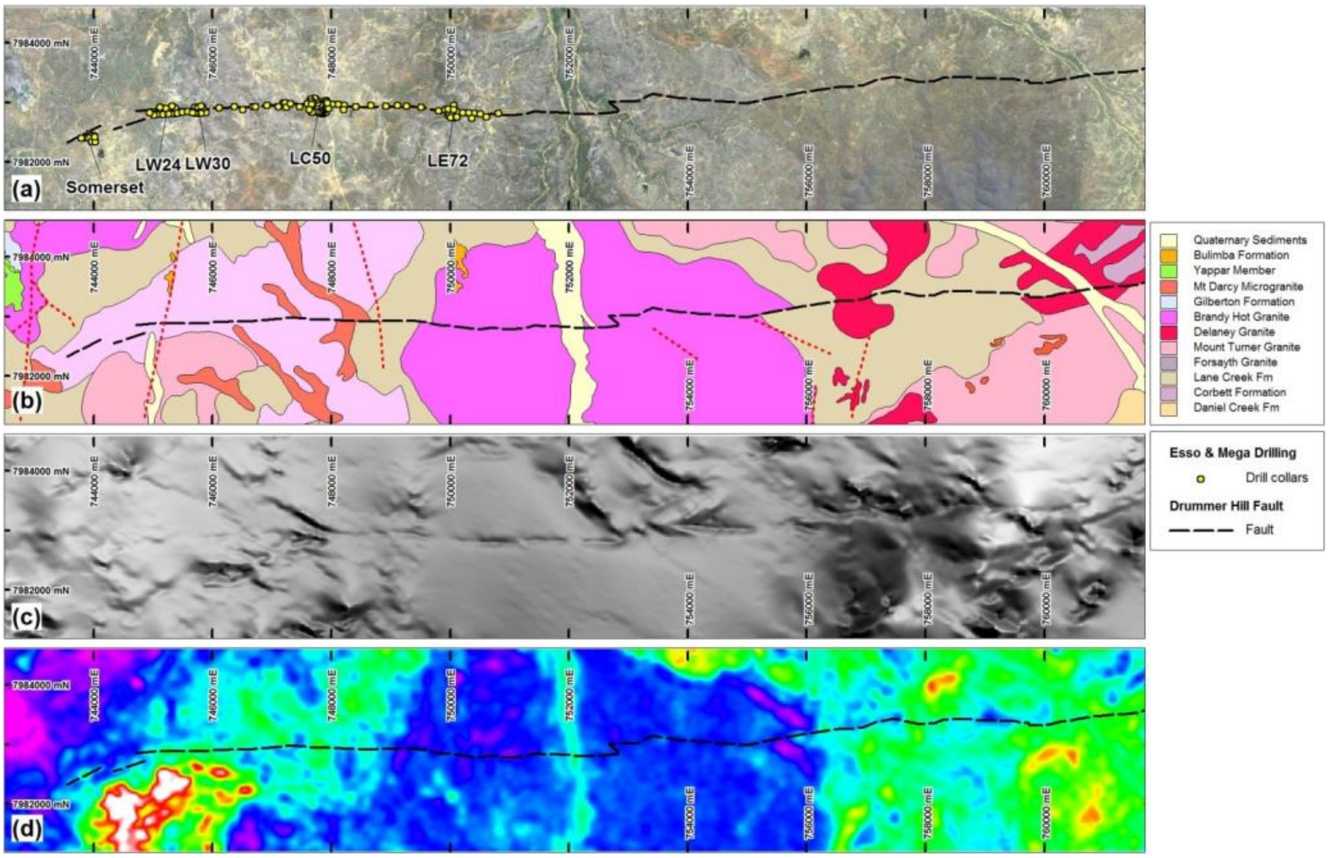


Fig 12 Location of survey areas on SPOT, Geology, and airborne geophysical images.

Yellow dots are historical drill collars and dashed line is the trace of the Drummer Fault Zone. Locations of Esso's historical prospects: Somerset, LW24, LW30, LC50 and LE72 are marked.

Previous drilling by Esso would appear to have comprehensively tested the western part of the area surveyed. That is, the portion within EPM 14827. Untested areas lie within EPM 14511 further east. Mega's drilling at LC50 suggests that the mineralisation occurs as a series of steeply plunging narrow shoots. Comprehensive 3D evaluation of the surface data and the sub surface extent of the drill holes is necessary to thoroughly assess the effectiveness of the Esso drilling.

The two sets of images below, Fig 3 and Fig 4 compare the radiometric responses along the Drummer Fault Zone. These emphasise the relatively subdued radiometric response of the LC50 mineralisation and the other Esso prospects.

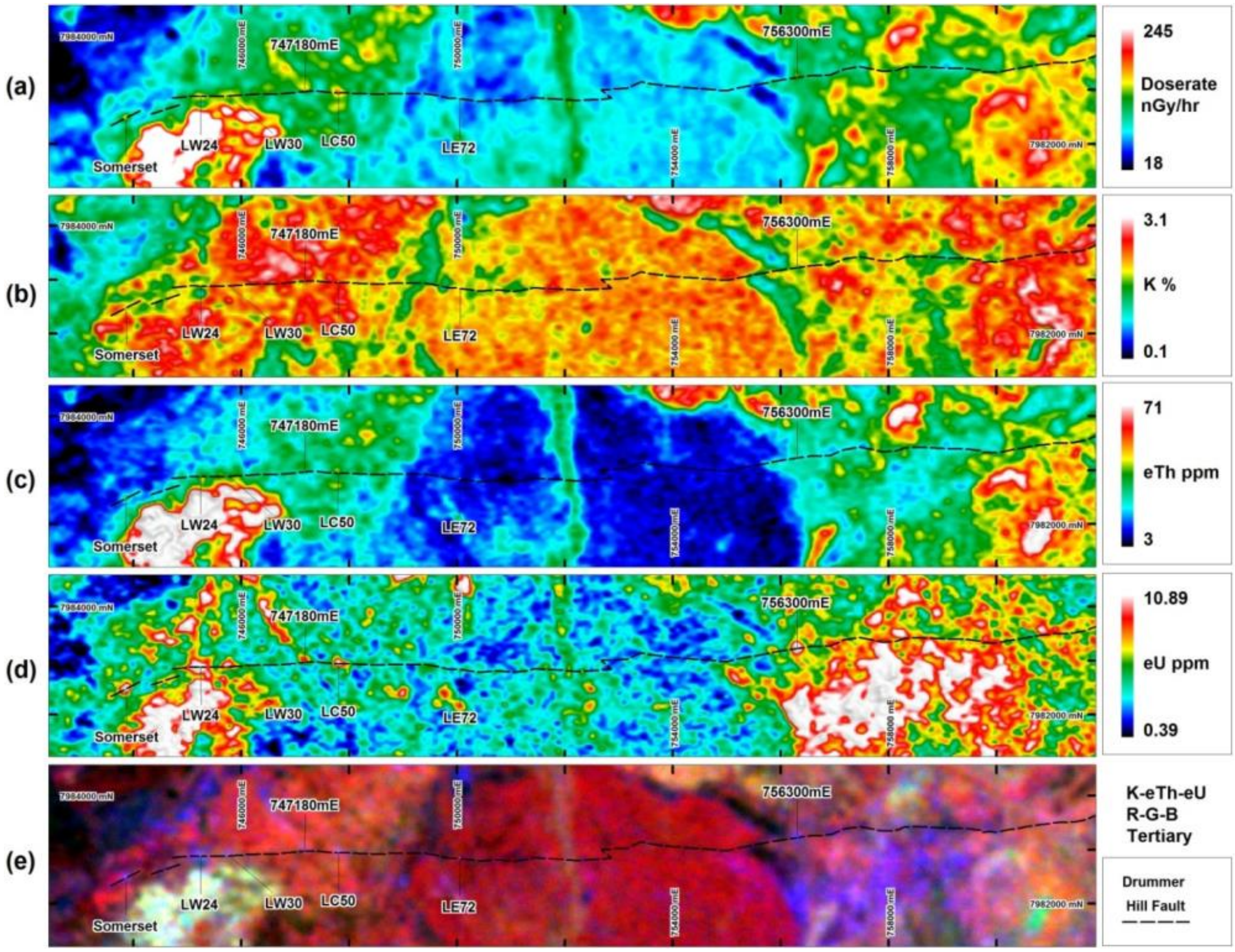


Fig 13 Airborne Radiometric Data along the Drummer Fault.

Images processed from the UTS A775 airborne survey data; (a) DoseRate; (b) Potassium channel in %; (c) Equivalent thorium in ppm; (d) Equivalent uranium in ppm; and (e) K, Th, U ternary image in red green blue.

Note the weak radiometric signal from the anomalies LE72, LC50, LW30, LW24 and Somerset recognised along the Drummer Fault Zone.

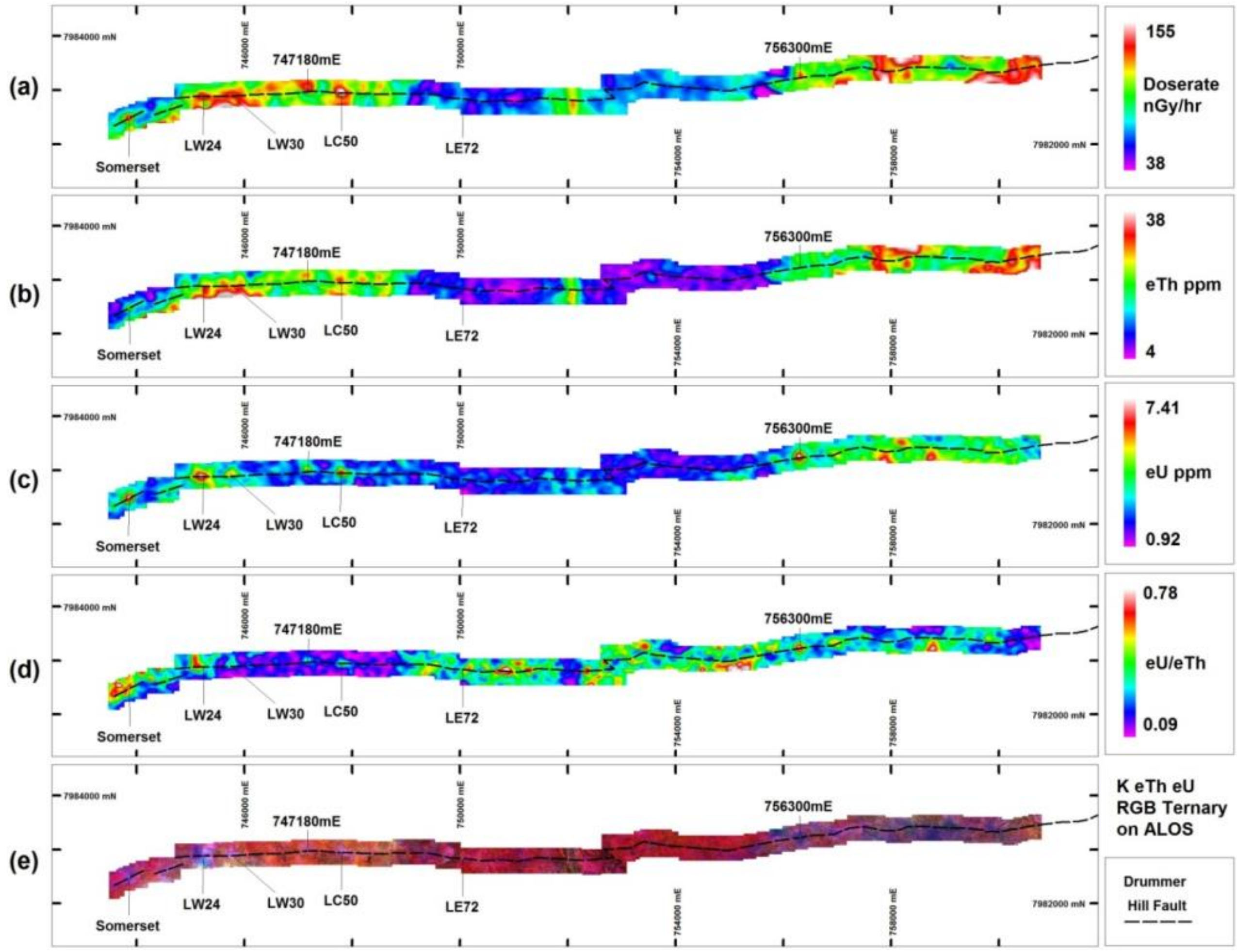


Fig 14 Airborne radiometric data clipped to ground survey area.

Images have been reprocessed to give better definition of the clipped area.

These clipped images provide useful comparison over the small area covered by the ground surveys. The weak radiometric signal from the anomalies LE72, LC50, LW30, LW24 and Somerset is more evident in these images.

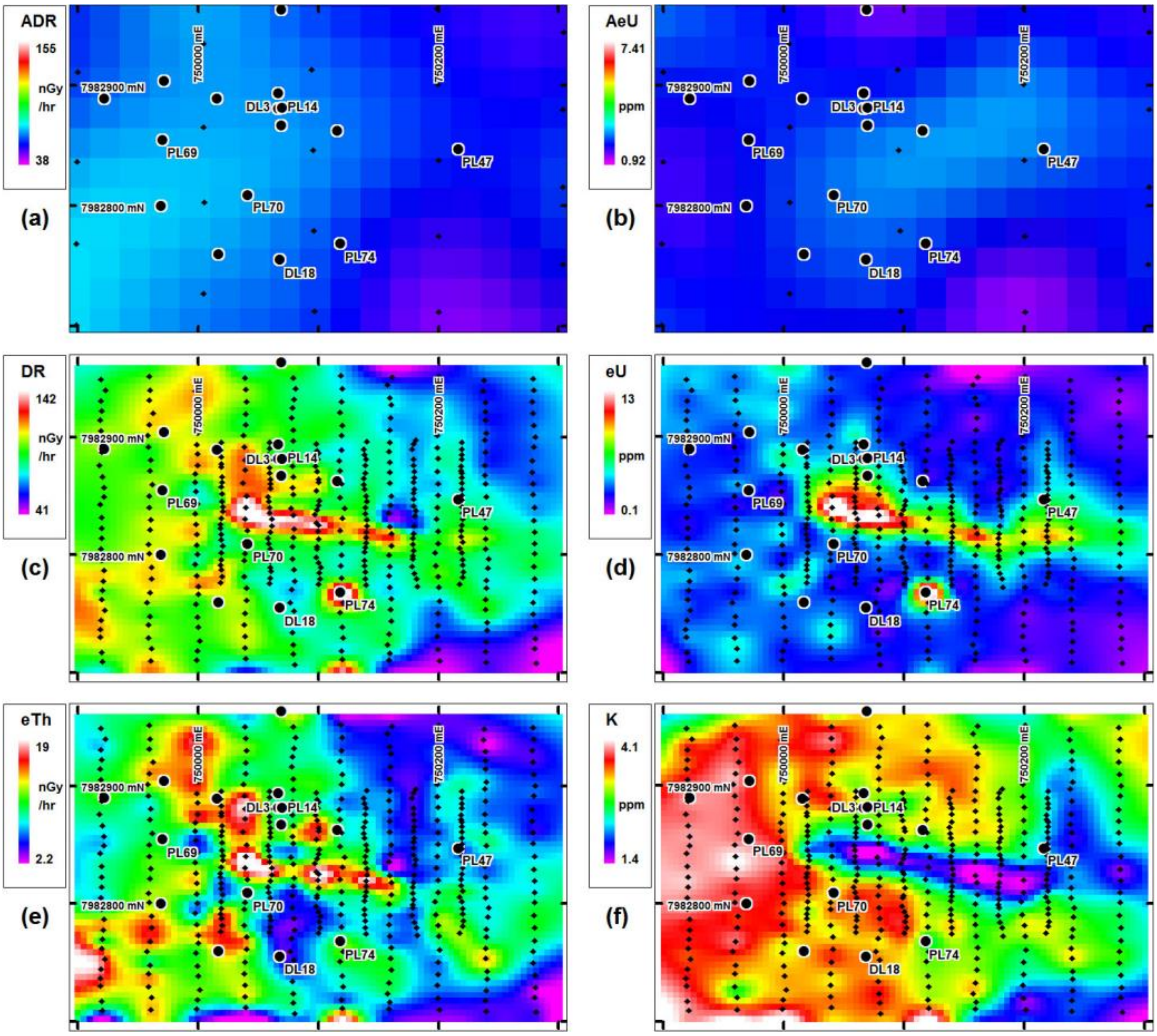


Fig 15 Comparison of Airborne and Ground Radiometric Data – LE72 Prospect.

Large black dots are Esso drill collar and closely spaced small black dots are ground survey points.

Detailed 3D interpretation of the drilling results is required to assess whether this small anomaly has been adequately tested.

9.4 Ground Radiometric Surveys

Z140 Grid

(From Mathison 2009)

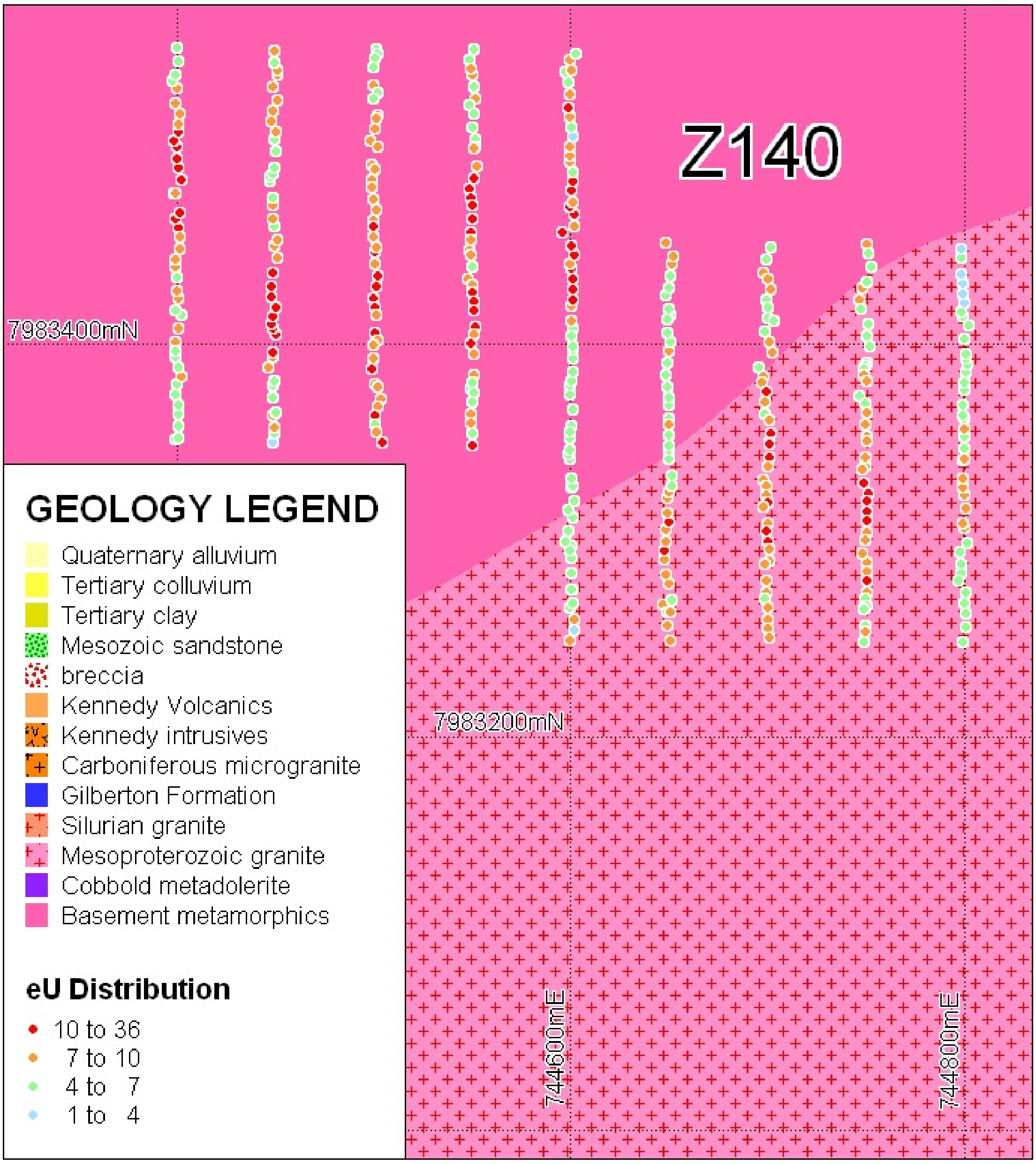


Fig 16 Z140 Ground Radiometric Grid – eU Ranges on 100K GSQ Geology.

This grid covers two airborne radiometric anomalies, Z140 and Z153, near the intrusive contact between the Lane Creek Formation metasediments and the Forsayth Granite. Ground radiometric eU values in the vicinity of these anomalies are generally weakly elevated. Highest values up to 36ppm eU were recorded 60m west-south-west of the plotted position of Z140 anomaly.

Some in fill ground radiometric surveying and geological ground follow up of these values is warranted.

LE74

Esso tested this area with an array of drillholes with only sporadic success. Mega's GRAD data delineates a zone along the DHFZ with weakly anomalous eU (Fig 19). The isolated eU high south of this zone is near the collar of a drillhole and represents contamination from down hole. Soil cover here is similar to that at LC50. Any mineralized zone here reaching the surface would be evident in the

GRAD results. Nevertheless the weak eU highs follow the trace of the fertile DHFZ across the survey area,

eTh values are also relatively low. A high in the north-east is probably lithological. (Fig 20)

K values show the common inverse relationship with eU and DoseRate values are a combination of eU, eTh and K with no one element dominant.

No further work appears warranted at LE74.

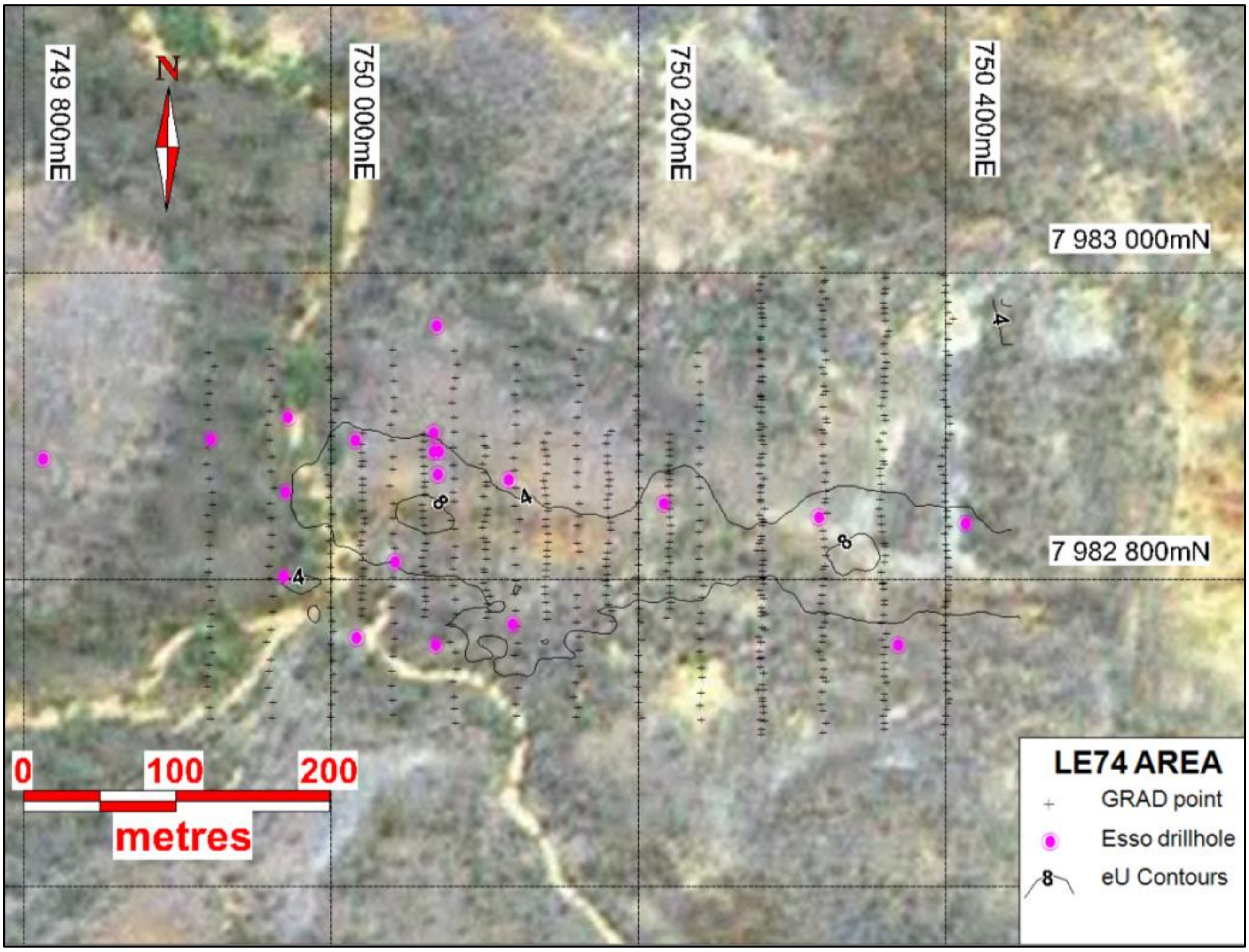


Fig 17 LE74 ALOS satellite image

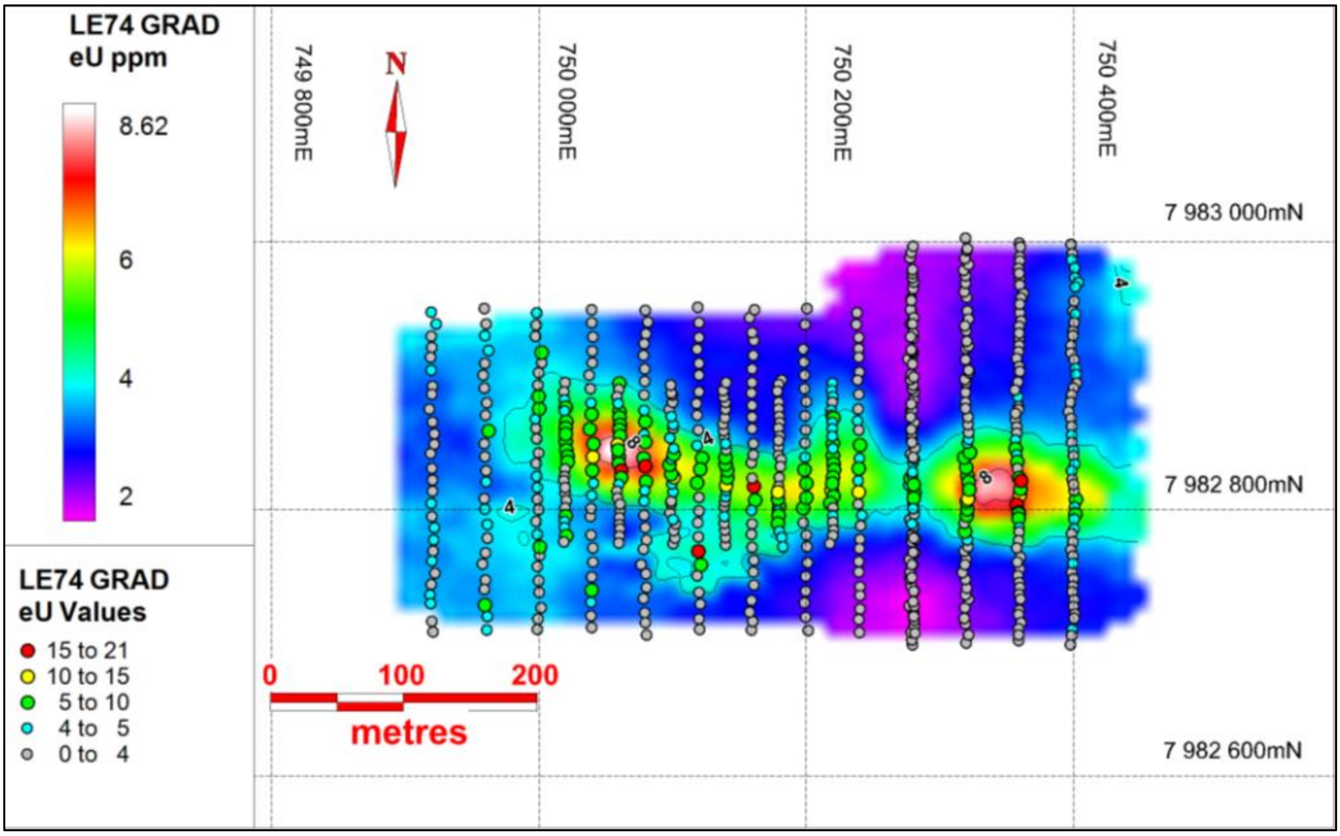


Fig 18 LE74 GRAD eU under eU contours

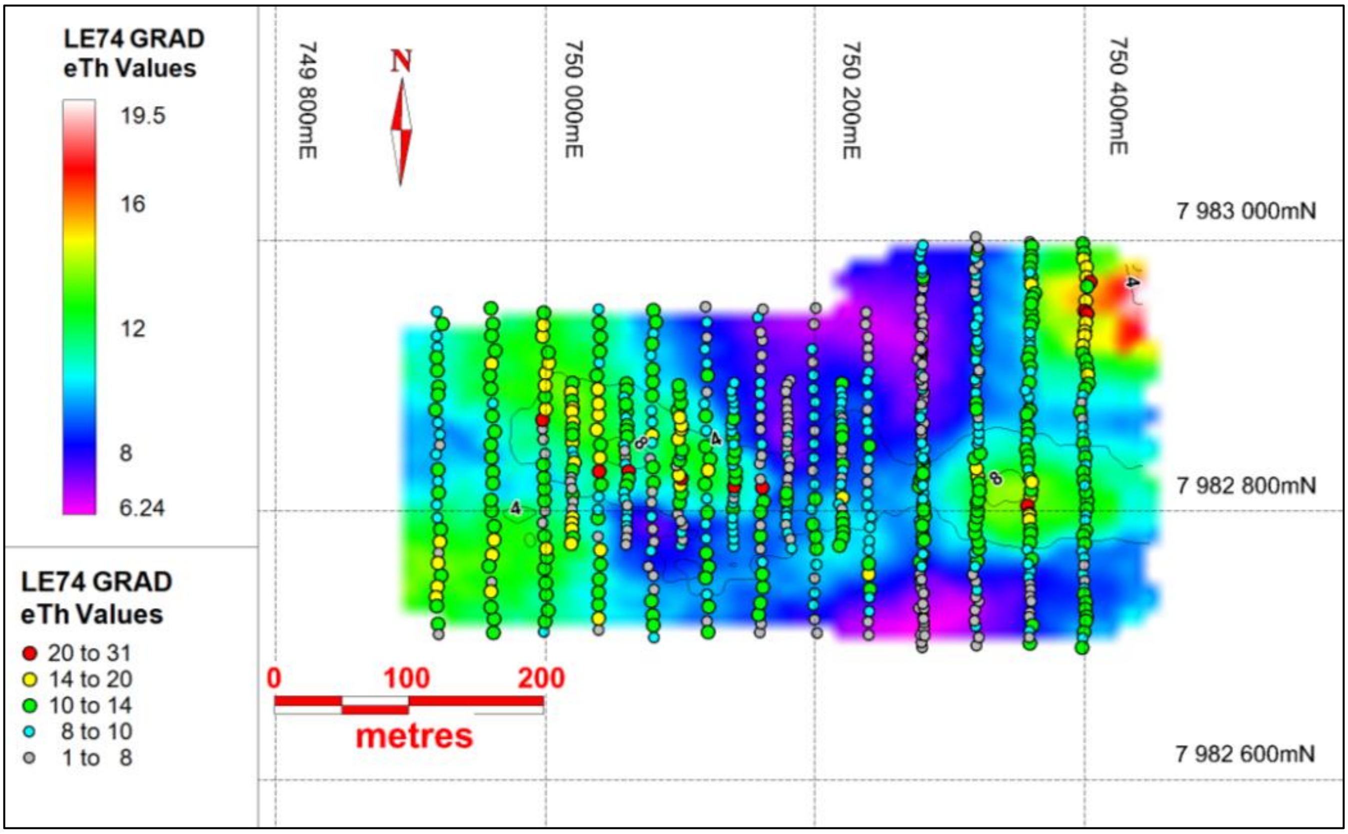


Fig 19 LE74 GRAD eTh under eU contours

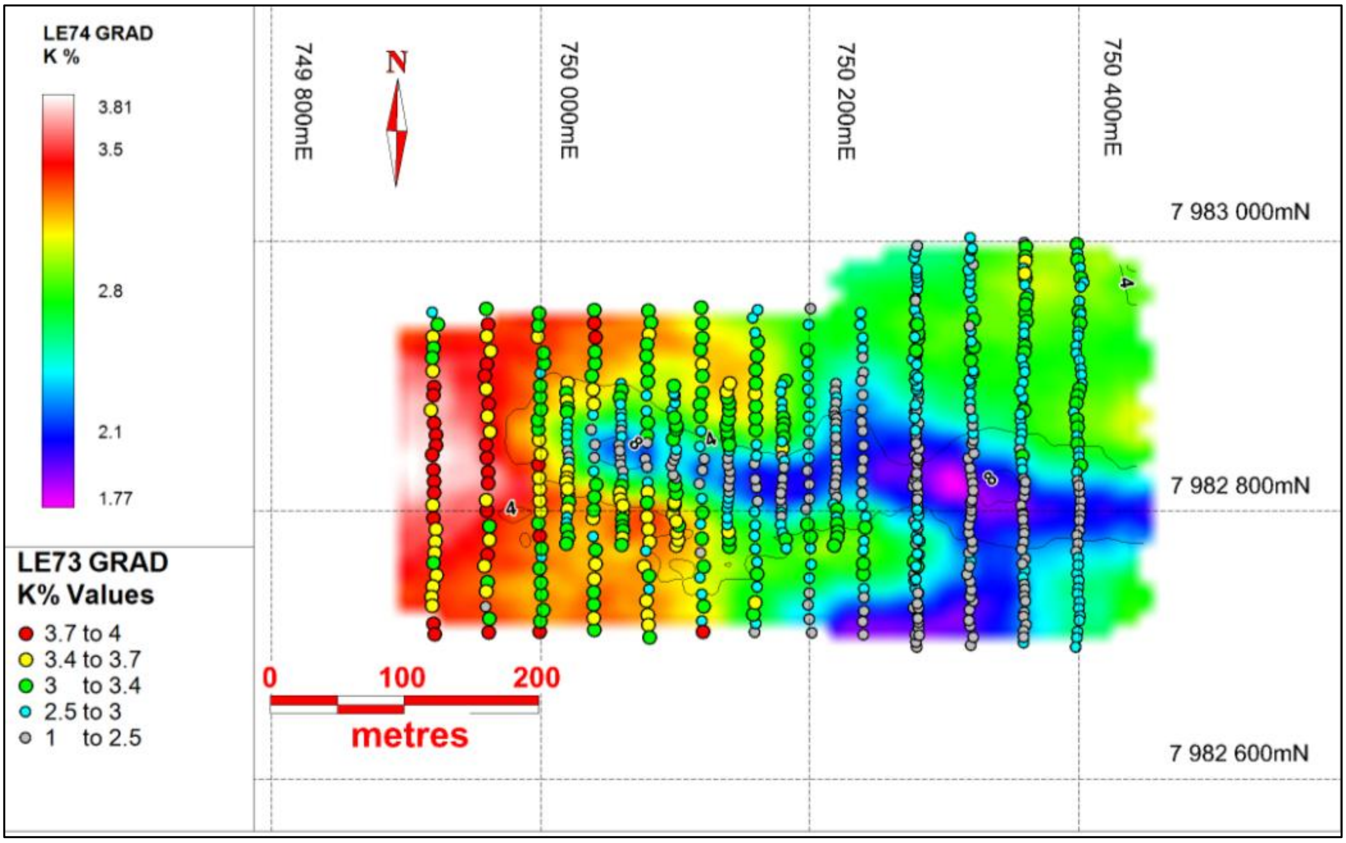


Fig 20 LE74 GRAD K under eU contours

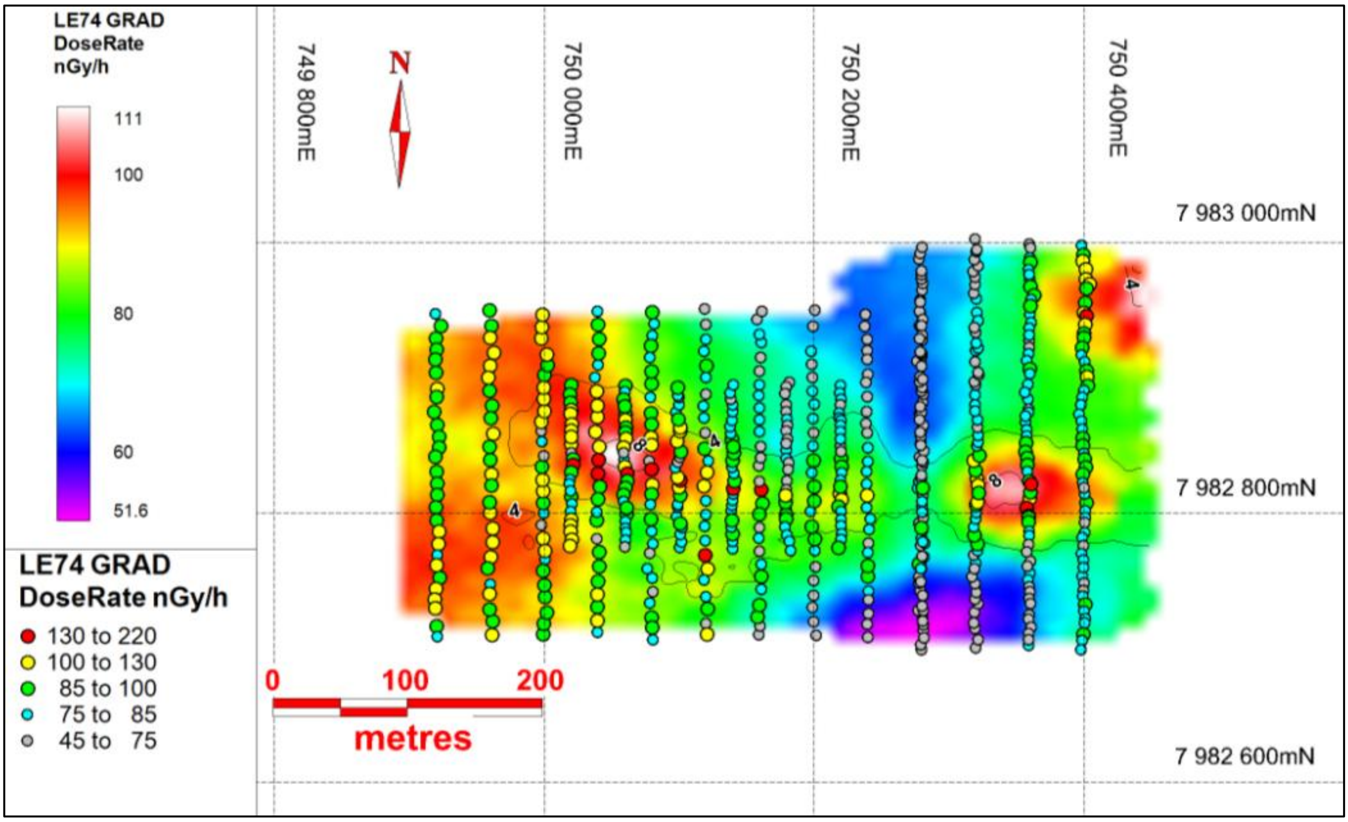


Fig 21 LE74 GRAD DoseRate under eU contours

Somerset

GRAD data from the relinquished portion of the Somerset GRAD survey have been extracted and thematically mapped below. Point ranges for the data are based on the statistics for the entire GRAD survey. Not just the relinquished area. This emphasizes the low level of eU values with all points recording <12ppm eU.

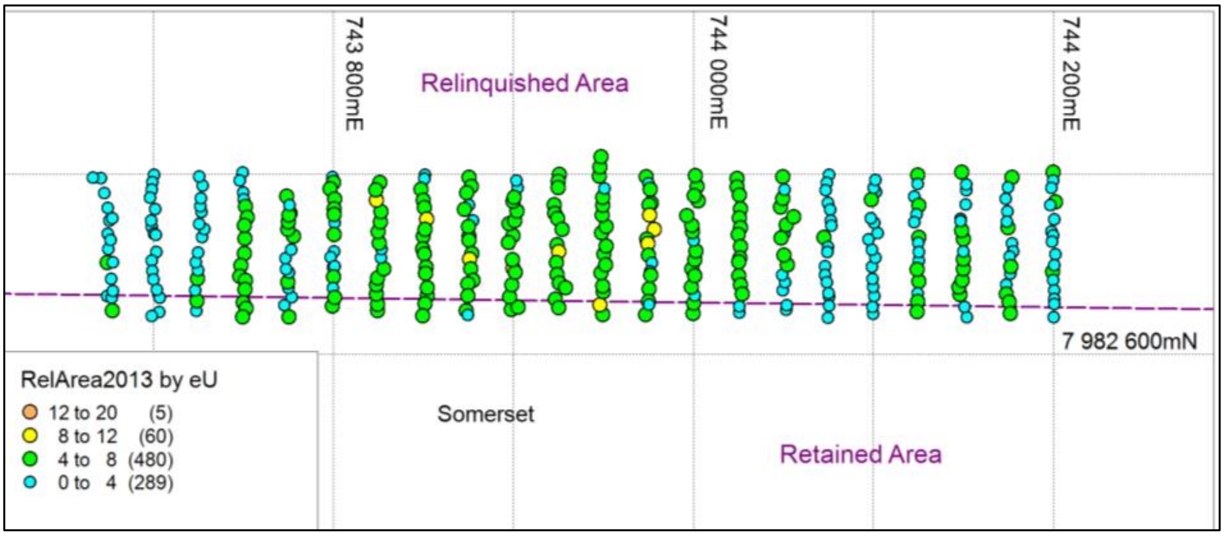


Fig 22 Relinquished Part Somerset GRAD – eU values

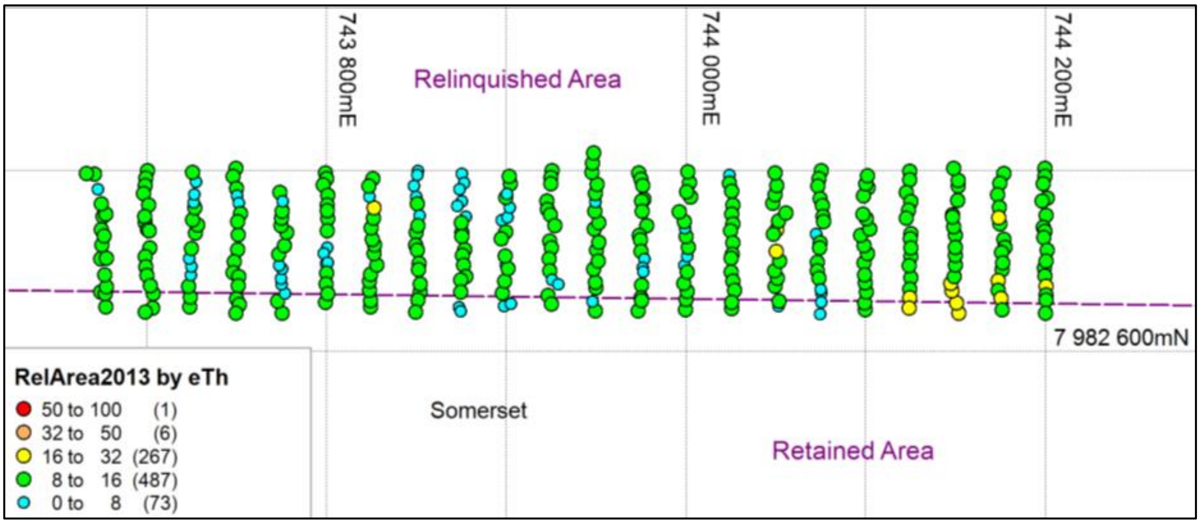


Fig 23 Relinquished Part Somerset GRAD – eTh values

Thorium values are also low with the vast majority of points recording <16ppm eTh.

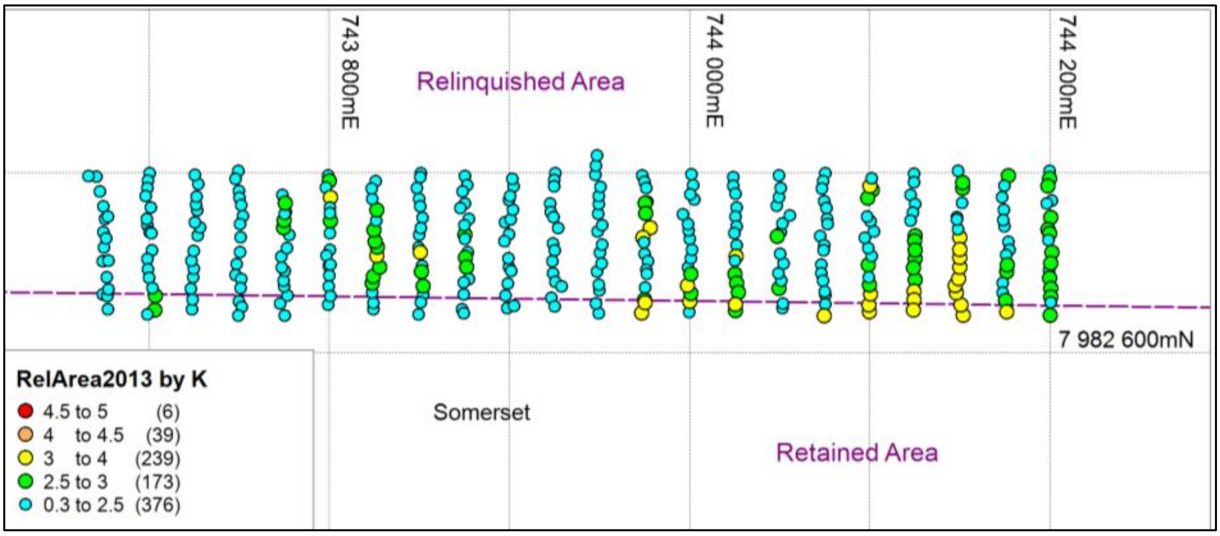


Fig 24 Relinquished Part Somerset GRAD – K% values

Moderately elevated K values of 3 to 4% were recorded across the relinquished area. These values correlate with mapped granites.

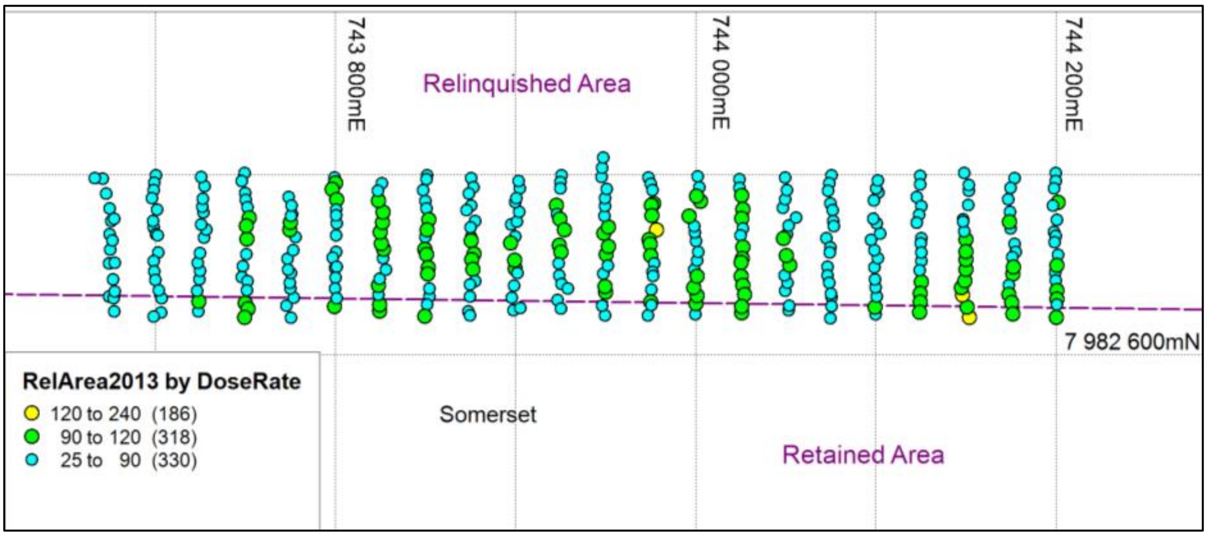


Fig 25 Relinquished Part Somerset GRAD – Doserate values

Doserate values are predominantly <120 nGys/h. The distribution of values suggests that most radioactivity in the relinquished area is sourced from potassium.

LW30

GRAD data from the relinquished portion of the LW30 GRAD survey have been extracted and thematically mapped below. Point ranges for the data are based on the statistics for the Somerset GRAD survey.

eU values within the relinquished portion of LW30 are very low with most points recording <8ppm eU. Values increase along the line 745 100mE along the eastern boundary of the relinquished area with some points recording between 12 and 20ppm eU.

Comparison of eTh, K5 and Doserate plots indicate that most radioactivity in the relinquished area is related to weakly elevated Th and K within specific lithologies.

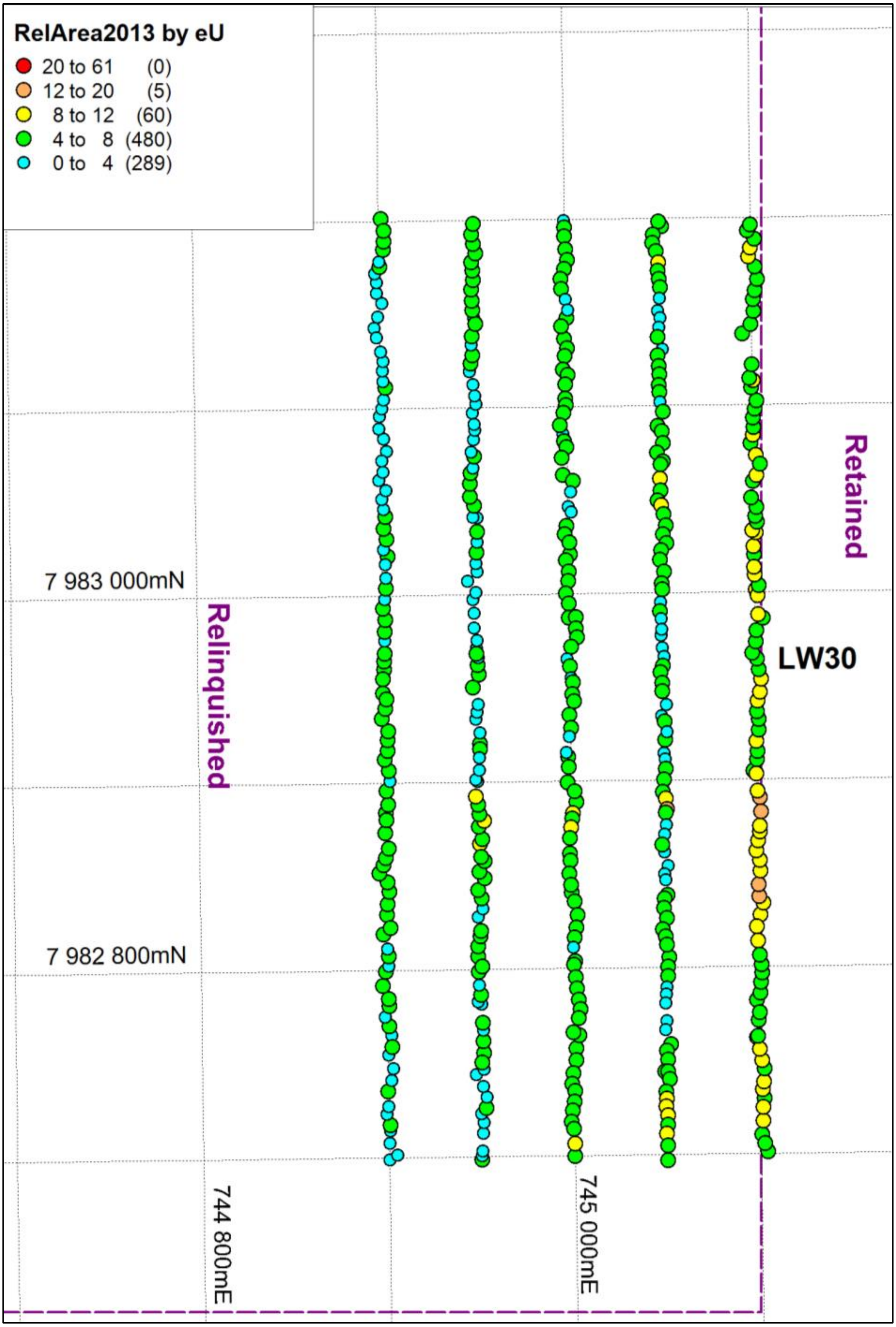


Fig 26 Relinquished Part LW30 GRAD – eU values

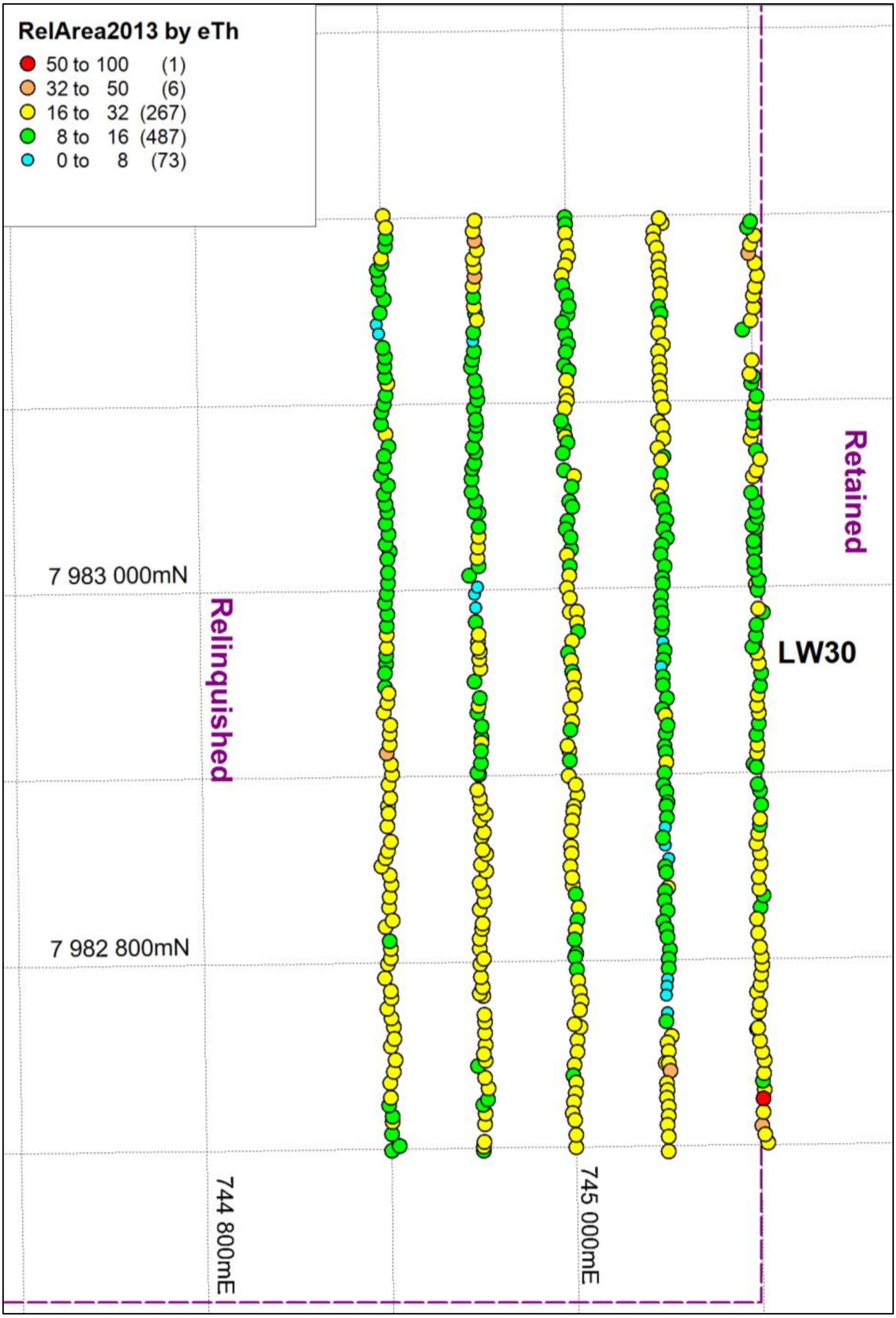


Fig 27 Relinquished Part LW30 GRAD – eTh values

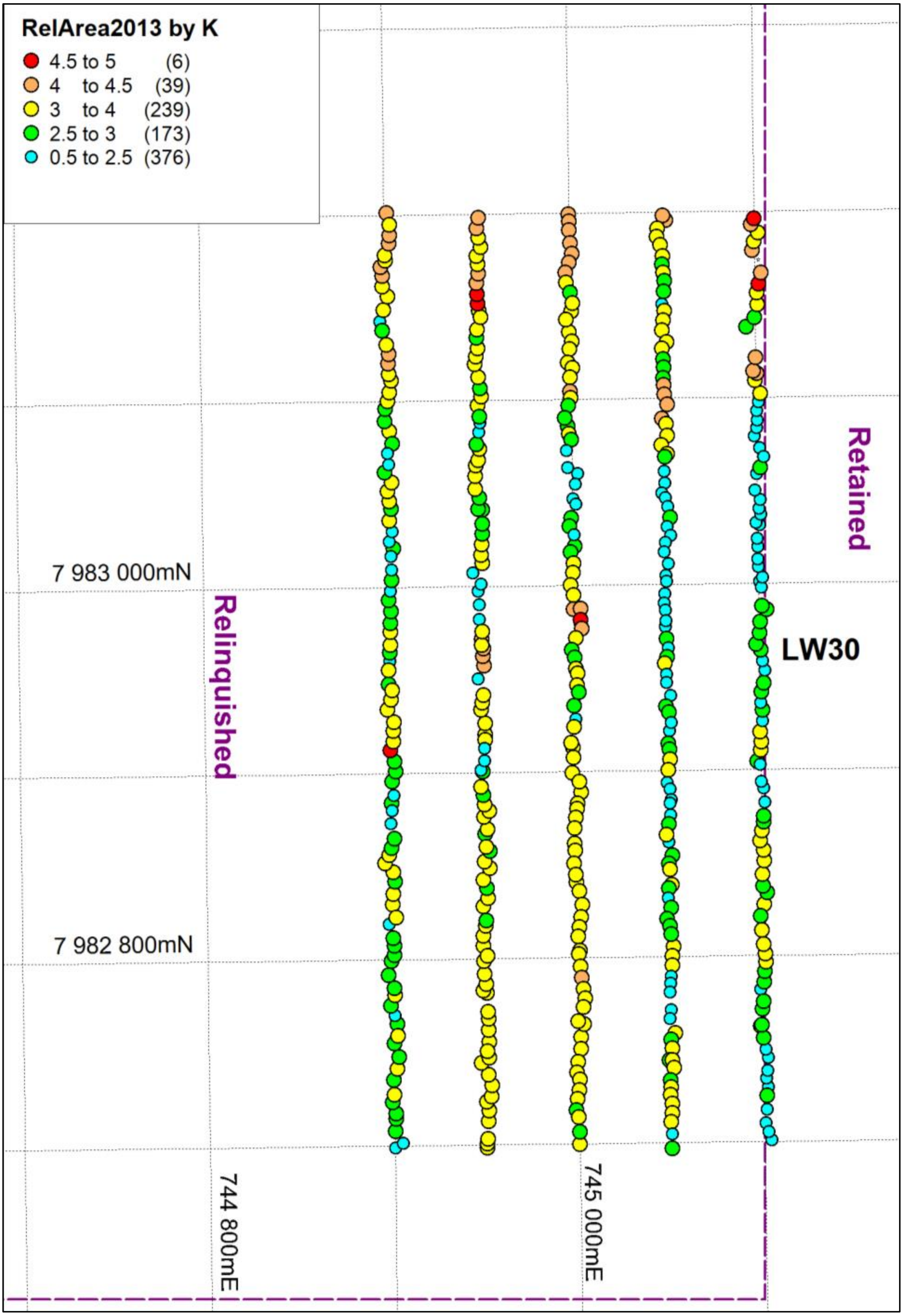


Fig 28 Relinquished Part LW30 GRAD – K% values

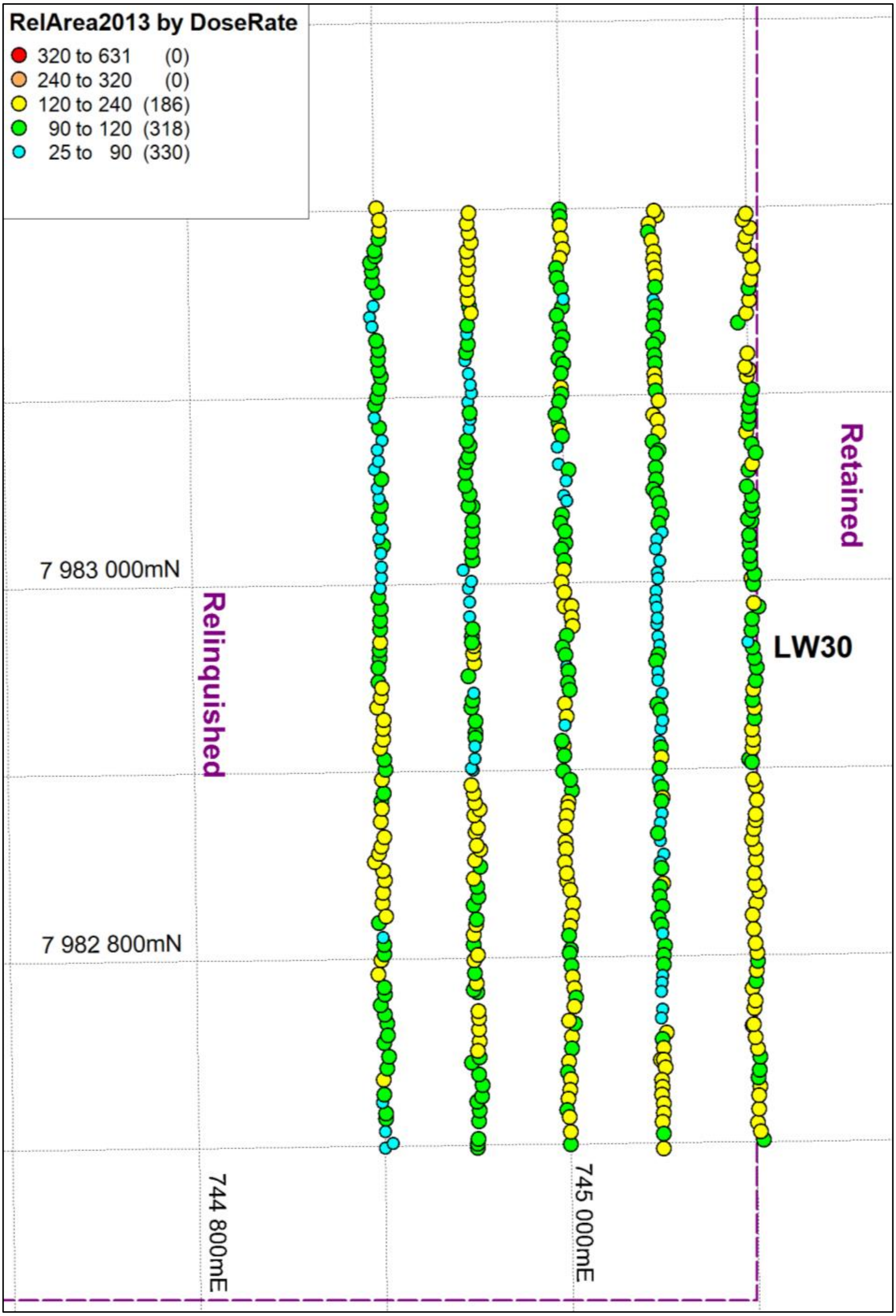


Fig 29 Relinquished Part LW30 GRAD – Doserate values

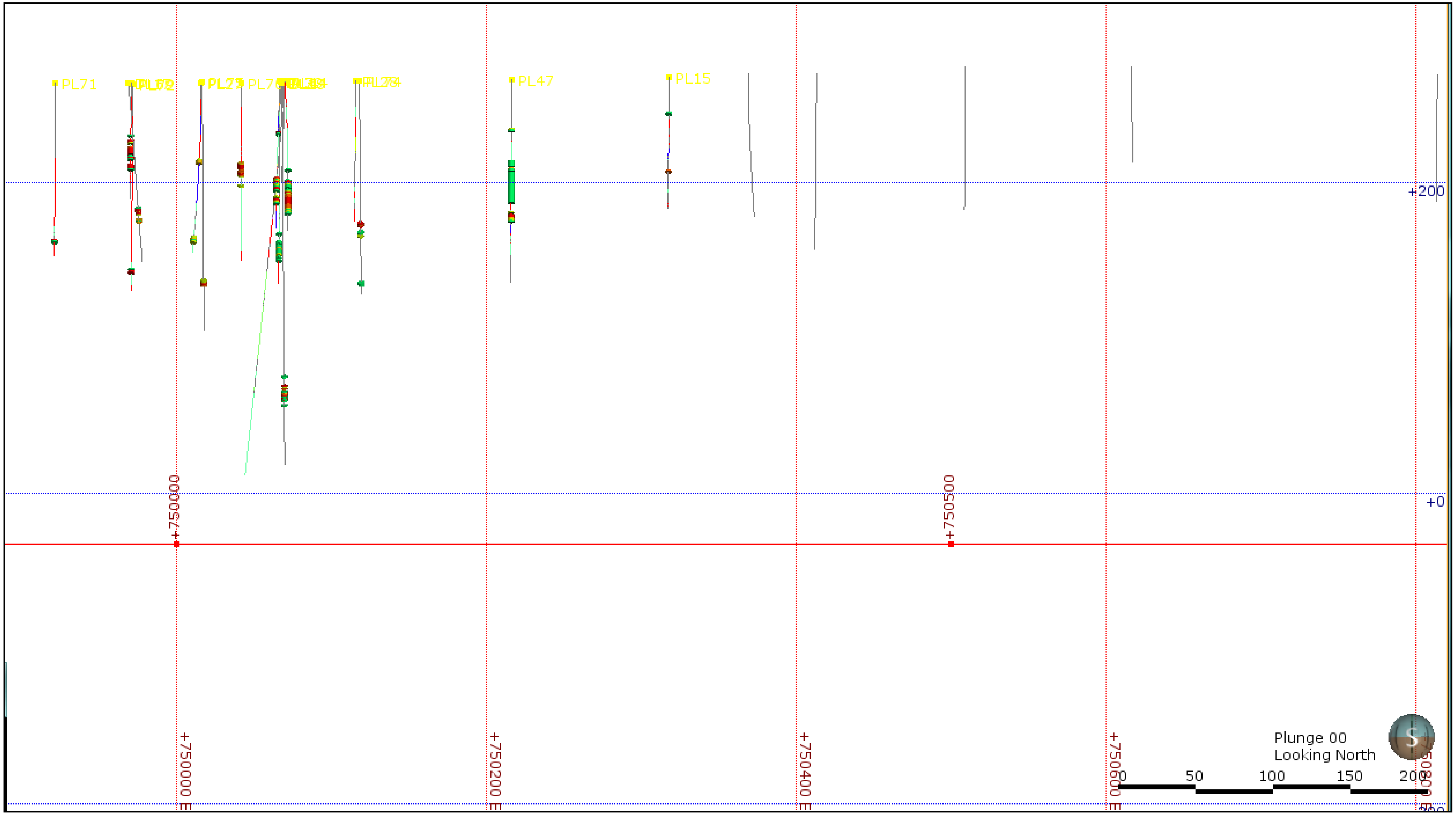


Fig 30 LE74 hole traces with assays

Red>500ppm, yellow >200-500ppm, green >80-200ppm. Continuity of mineralization between holes is not obvious. Steeply plunging lenses similar to those at LC50 are either not developed or very narrow.

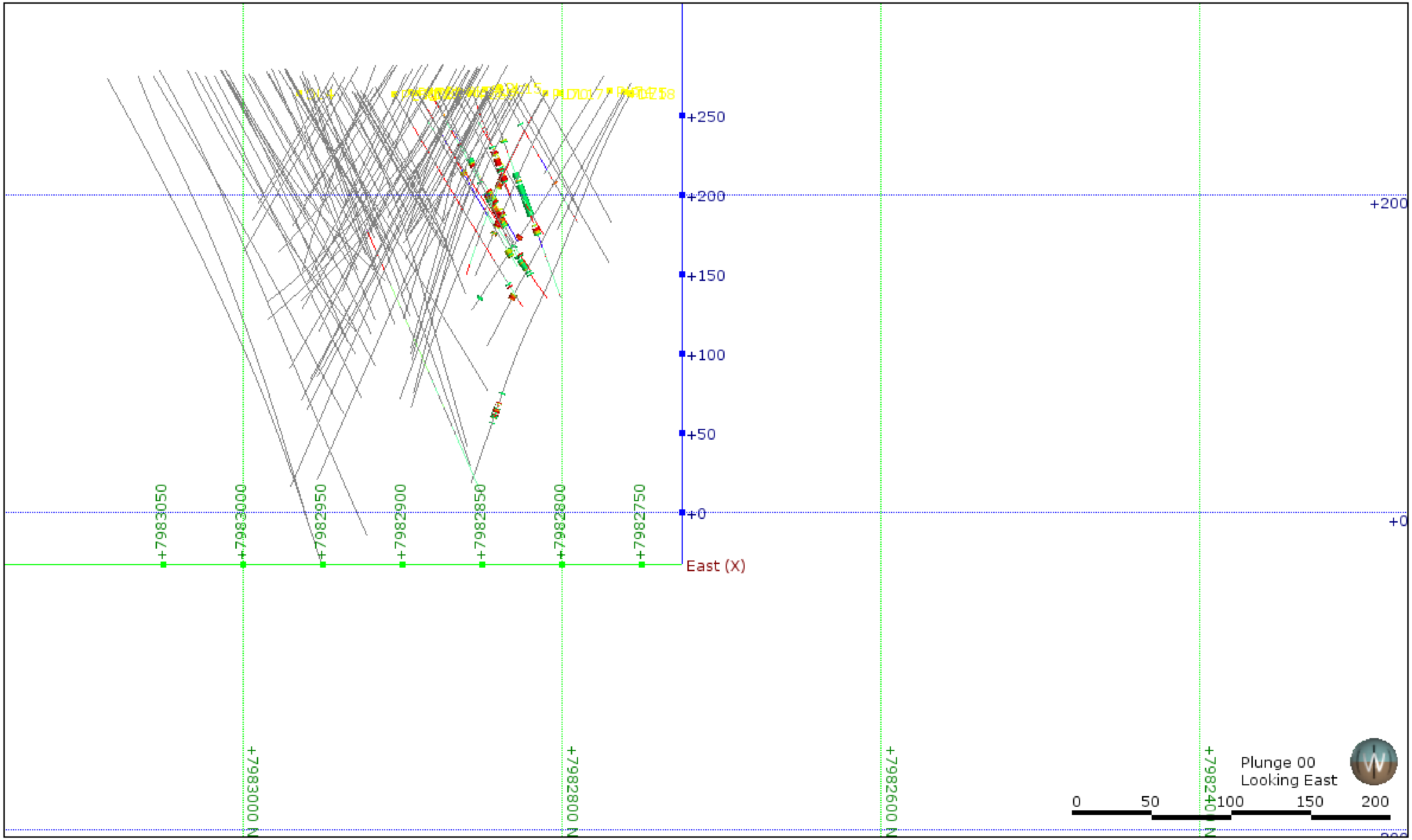


Fig 31 LE74 looking east, barren holes east and west of mineralized holes

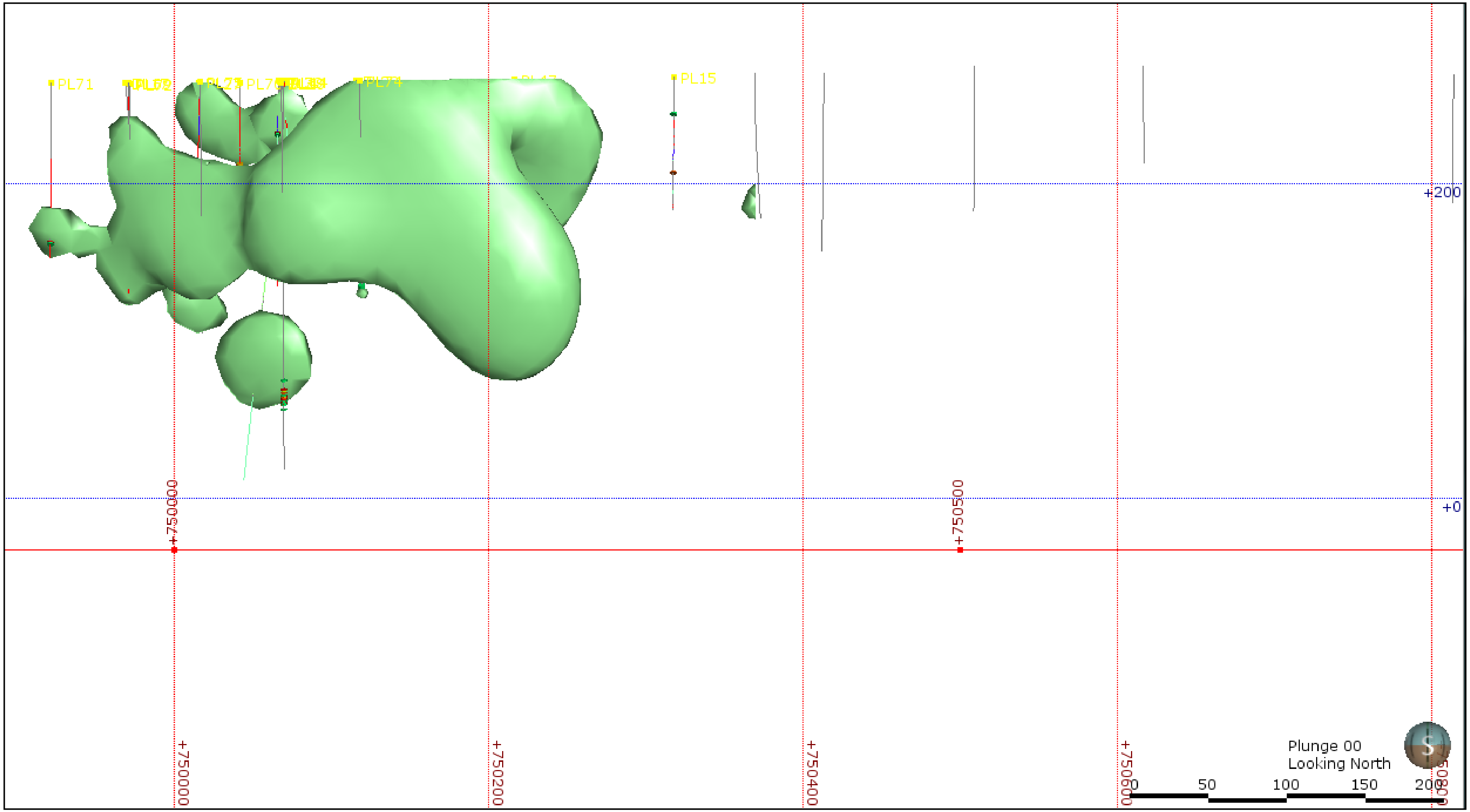


Fig 32 LE74 looking north - logged porphyries.

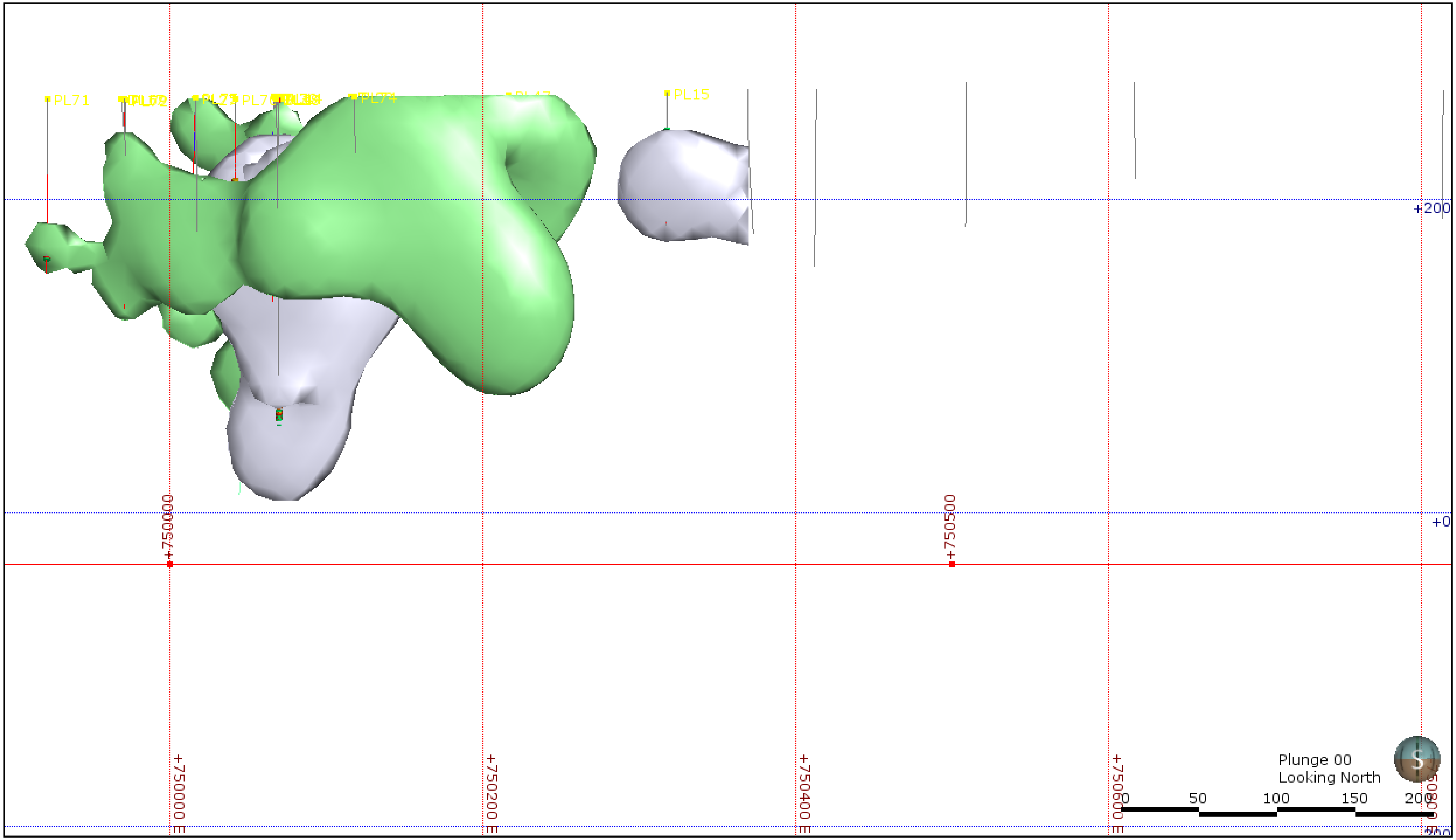


Fig 33 LE74 looking north – logged dolerite (grey) and porphyries (Green)

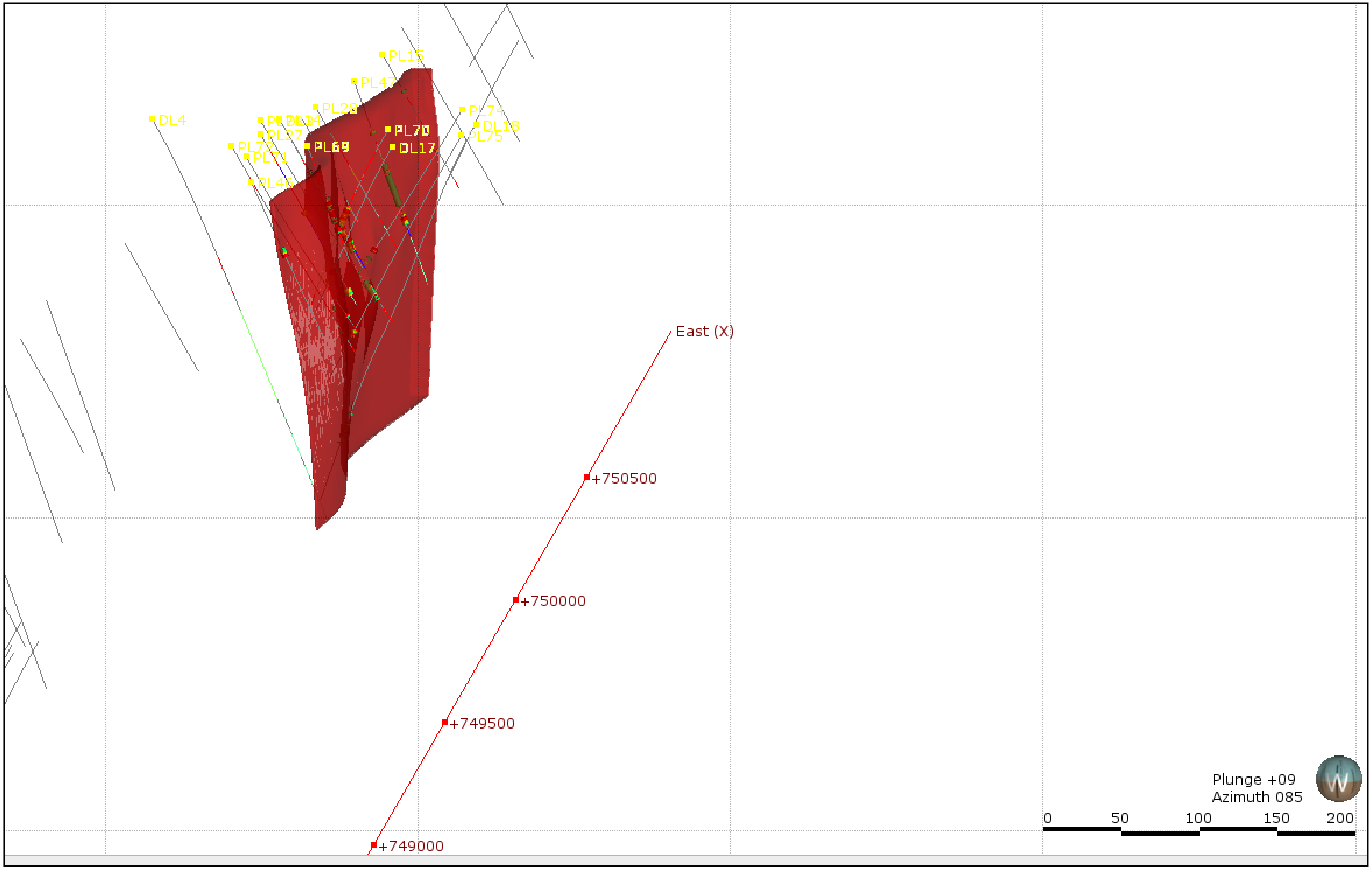


Fig 34 LE74 looking down to north-east – mineralized zone.

Table 4 Reported drillhole assays LE74

HoleID	mFrom	mTo	Metres	Grade		HoleID	mFrom	mTo	Metres	Grade
DL17	89.3	93.8	4.5	495		PL28				
DL17	97	99.4	2.4	250		PL3				
DL18	215.8	218.3	2.5	826		PL46	50	53	3	630
DL19						PL47	91	97	6	448
DL3	72.1	81.5	9.4	651		PL69	39	42	3	882
DL3	88	91	3	723		PL69	44	49	5	828
DL4						PL69	56	59	3	763
PL14	74	77	3	425		PL70	57	67	10	630
PL14	81	97	16	465		PL71				
PL15						PL72				
PL16						PL73				
PL27	57	60	3	307		PL74	107	110	3	725
PL27	114	119	5	250		PL75	145	149	4	563

Table 10 lists all U3O8 assays reported for the LE74 drilling. Averages include all assays greater than 200ppm, internal intervals (Maximum 2m) with assays near 200ppm, maximum internal waste intervals of 1m and minimum interval of 3m. Table illustrates the patchy nature of the mineralization, the predominantly narrow widths and the low grade of the LE74 mineralization.

10.0 CONCLUSIONS AND RECOMMENDATIONS

Mega and DRA/GML exploration within the relinquished area of EPM 14827 detected no indications of potentially economic uranium, gold or base metal mineralization. The patchy mineralization at LE72/LE74 intersected by close spaced ESSO drilling appears to have been comprehensively tested.

No further exploration of these areas appears warranted. Active exploration in the retained portions of EPM 14827 is continuing.

11.0 REFERENCES

Denaro, T.J., Withnall, I.W., Bain, J.H.C. and Mackenzie, D.E., 1997. Mineral resource assessment - Georgetown-Croydon area. Queensland Minerals and Energy Review Series, Queensland Department of Mines and Energy.

Donnes, G, 2008. Georgetown Project Target Report. Internal Mega Georgetown company report.

Herrmann, W, 2007. V12 Anomaly - Radiometric Reconnaissance, D3 Prospect, EPM 14827. Unpublished Herrmann Geoscience report for Mega Georgetown 10/07/2007

Mathison, I., Clifford, B. and Singh, B., 2008. Annual report for EPM 14827 – Rockys Project for the period ended 13 September 2008. Unpublished Mega Georgetown report submitted to the DME Queensland.

Mathison, I, 2009. Annual report for EPM 14827 – Rockys Project for the period ended 13 September 2009. Unpublished Mega Georgetown report submitted to the DME Queensland.

Mathison, I, 2010. Annual report for EPM 14827 – Rockys Project for the period ended 13 September 2010. Unpublished Mega Georgetown report submitted to Queensland Mines and Energy – DEEDI, Queensland

Mathison, I, 2011. Annual report for EPM 14827 – Rockys Project for the period ended 13 September 2011. Unpublished Mega Georgetown report submitted to Queensland Mines and Energy – DEEDI, Queensland

Mathison, I, 2012. Annual report for EPM 14827 – Rockys Project for the period ended 13 September 2012. Unpublished Mega Georgetown report submitted to Queensland Mines and Energy – DNRM, Queensland

Mathison, I, 2013. Annual report for EPM 14827 – Rockys Project for the period ended 13 September 2013. Unpublished Mega Georgetown report submitted to Queensland Mines and Energy – DNRM, Queensland

Singh, B. and Mathison, I., 2006. EPM 14827 - Rockys Project. Annual report for period ending 13 September 2006. Unpublished Mega Georgetown report submitted to DME, Queensland.

Singh, B. and Mathison, I., 2007. Combined annual report for EPMs 14827, 14828, 14829, 14830, 14831, 14843, 14844, 14845, 14852 & 14853 for period ending 13 September 2007. Unpublished Mega Georgetown report submitted to DME, Queensland.

APPENDIX 1

Interpretation of Drummer Fault Zone Ground Radiometric Surveys

Bretan Clifford

February 2010

Drummer Hill Fault Ground Radiometric Surveys, EPMs 14827 and 14511

Bretan Clifford
February 2010

Summary

Reconnaissance surface assessment of the DH Fault in EPMs 14827 and 14511 for uranium mineralisation potential was completed with a 40m line-spaced ground radiometric doserate survey. Orientation ground radiometric assay grids in four prospects preceded the doserate survey and indicated that variation in the background radiometric response of host lithologies restricts the effectiveness of identifying anomalies from the gridded doserate survey data.

Statistical normalisation of the doserate data set, based on available geological mapping, enhanced anomaly detection. Follow up exploration recommended is limited to eastward extension of ground assay grids in two drill tested prospects and assessment of two low intensity doserate anomalies. Further evaluation of the remaining potential for U mineralisation on the DH Fault will require subsurface assessment.

Introduction

This report provides details of exploratory ground radiometric work conducted by Mega Georgetown (Mega) on the Drummer Hill Fault (DH Fault) within Exploration Permits for Minerals (EPMs) 14827 and 14511 during 2008. The DH Fault and SW extension were identified as hosting uranium mineralisation by Esso Exploration & Production Aust Inc. (Esso) during the late 1970s.

The DH Fault is located on Mt Turner Station and the Cumberland Holding, in the northern section of EPM 14827 and the central portion of EPM 14511, 12-27 kilometres NW of the township of Georgetown, North Queensland (Fig 1). The main access to the central portion of the area is the access road for Mt Turner station that intersects the Gulf Development Road at 750,080mE 7,975,480mN (MGA) and passes through the prospect 9.4 km to the north. Station tracks are used for access elsewhere.

Mega's exploration of the DH Fault in the zone 743,480–760,800mE is aimed at identifying uranium occurrences on the structure, with the potential for small high grade deposits to be economically viable satellites to the Maureen Deposit 27 km to the NNE.

Previous Work

The DH Fault and surrounds was explored extensively during the late-1970s and early-1980s by Esso Exploration & Production Aust. Inc. (Esso) in association with joint venture partners (AtoP 1596M, 1799M and 1996M - Fleming, 1976; Billington, 1977a & b, 1978a & b, 1979a-e, 1980a-c; Okill, 1981). Minor additional uranium exploration work was conducted by Goldfields Exploration Pty Ltd (AtoP 2779M - Stevens- Hoare, 1982a & b; Owen, 1983). This exploration included conducting and interpreting geological, geochemical and geophysical surveys:

Geological - aerial photo interpretation and ground mapping 1:25,000, 1:10,000 and 1:2,500.
Geochemical - stream sediment, soil, rock chip and costean sampling.
Geophysical - helicopter & ground radiometrics, alpha cup, ground magnetic and EM surveys.

The helicopter radiometric coverage involved a flight height of 61m (200 feet) in all cases, but highly variable grid spacing. In the case of the Somerset Prospect (west of 745,100mE) N-S lines were flown at a nominal 20m line spacing. Elsewhere the N-S lines were spaced at 200m over the DH Fault. In the case of A to P 1996M (east of 752,150mE) an addition grid oriented E-W at 200m line spacing was flown. The spatial control, based on post-flight aerial photograph correlation, show line spacing variations to +/-50% were not unusual. The aerial survey coverage identified four of the five U occurrences (Somerset, LW24, LW30 and LC50 – Fig 2) although spatial control placed 3 of the anomalies >100 metres from their location.

Ground radiometric coverage of the DH Fault included: (1) a 10 x 100m spectrometer grid, with 25m spaced E-W point readings on the interpreted structure (744,820–750,820mE); (2) a detailed 10 x 20m spectrometer grid (747,420-748,200mE); (3) 757,100-758,300mE, 10 x 50m spectrometer grid; and (4) localised aerial anomaly follow up. The ground radiometrics identified four of the five major occurrences (Somerset, LW24, LW30 and LC50) with good spatial control. Costeans on known prospects and 200m spaced trenching over the DH Fault in the zones 746,820-748,420mE and 749,420-751,820mE were also covered with radiometric logging.

Alpha detection coverage was also extensive including: (1) 200 x 50m track etch alpha cup survey (745,820-748,820mE); (2) a 200 x 50m electronic alpha cup survey (744,820mE-750,820mE); and 3) a 10 x 50m track etch alpha cup survey (745,320mE-750,820mE) focussing on DH Fault. A critical review of the alpha survey work shows no significant advantage over the surface spectrometer surveys with the possible exception of the zone 750,080mE-750,420mE where a significant alpha anomaly was highlighted.

The outcome was a focus on the western portion of the DH Fault (744,900-750,900mE) and a SW extension of this structure into the Somerset Prospect (743,800mE). A total of 31 diamond and 84 percussion drill holes, for 16,260m of drilling was completed, with a 200m space testing along the majority of the zone and five prospects with more intense drilling (Fig 2). A drill indicated reserve was determined for Lineament Central 50 prospect (LC50) of 374,500 tonnes at an average grade of 0.155% U3O8 and an average width of 4.4m, at a cuff off grade of 0.0452% U_3O_8 and minimum true width of 1.5m (Okill, 1981).

Mega's exploration of this area was initiated with an aerial survey over a large portion of the Georgetown region, centred near Georgetown (UTS, 2007). The aerial survey was flown at 40m flight height, on a 100m line spaced N-S grid. Aerial radiometric anomalies were identified and prioritised, with ground follow up in the DH Fault including the Somerset and LC50 prospects (Herrmann, 2007). This reconnaissance work did not define any additional targets outside of those previously tested.

In 2007 drilling was conducted to test for extensions to the LC50 prospect mineralisation with eight RC drill holes for 1,524m of drilling (Clifford 2009a). Significant mineralisation was extended 125m to the west at -150m depth. In 2008 four diamond drill holes, for a total of 914.7m, and three reverse circulation drill holes, for a total of 503m, at LC50 tested for lateral and vertical extensions to known uranium mineralisation (Clifford, 2009b).

Geology

EPM 14827 is within the western portion of the Georgetown Region, an area dominated by outcropping Mesoproterozoic granitoids intruding Palaeoproterozoic metasediments, subordinate Silurian granitoids and widespread Carboniferous to Permian volcanics and intrusives. The 1:250,000 scale mapping by Bain et al. (1985) with additional documentation by Bain & Draper (1997) and GSQ (2000) provide a detailed regional geological framework.

Bain and Draper (1997) define this portion of the Georgetown Region as the Forsayth Subprovince. The subprovince is composed of a metasedimentary succession deposited in an intracratonic rift between 1700 and 1650Ma. The succession was deformed, metamorphosed to lower-middle amphibolite grade, and intruded by the Forsayth and Forest Home Supersuites around 1550Ma. White Spring Supersuite granitoids were intruded in the Silurian to Early Devonian in association with deformation, retrogressive metamorphism and gold mineralisation.

Late Devonian to Early Carboniferous intracratonic rift sedimentary rocks and volcanics of the Gilberton Formation are locally preserved. Carboniferous subaerial felsic volcanics and associated intrusives outcrop extensively within the subprovince. Localised Late-Carboniferous to Permian intrusives and volcanics are associated with Au and base metals mineralisation. Mesozoic, Tertiary and Quaternary sediments locally overlie the older components of the succession.

The focus of this report is the mineralised DH Fault (Bain et al. 1985). This E-W oriented, sub vertically dipping structure extends for 19km. It has a complex history of deformation, intrusive activity, hydrothermal alteration and mineralisation. Recorded mineralisation includes localised high grade uranium mineralisation over the western 5 kilometres (Billington, 1979a; Okill, 1981), previously mined, small scale Au-(Ag-Pb-Zn) deposits in the eastern 14 kilometres of the DH Fault and porphyry Cu-Mo mineralisation 2 km to the south of the structure at Mt Turner at 759,000mE (Bain et al., 1985; GSQ, 2000).

The formal regional geological framework provided by Bain et al. (1985), Bain and Draper (1997) and GSQ (2000), and the lithologies identified during Mega's drilling program within the prospect are summarised in Table 1. The 1:250,000 geology in the area of the radiometric survey is shown in Figure 2, together with ALOS imagery, a reduced to pole aerial magnetic (AMAG RTP) image and an aerial total count radiometrics (ARAD TC) image. The style of mineralisation and associated alteration documented by previous workers, best known at LC50 prospect, are summarised in Clifford (2009a & b).

Table 1: Summary of geological units

Age	Geological Units Bain et al. (1985), GSQ (2000)	Lithologies
Quaternary	Floodplain Alluvium	Gravel, sand, silt and clay
Tertiary	Bulimba Formation	Poorly indurated sandstone
L. Jur-E. Cret	Yappar Member	Quartzose sandstone and siltstone
Perm-Carb	Miscellaneous Acid, Intermediate & Basic Rocks	Dolerite, Rhyolite to Andesite Porphyries
M-L Carb	Mt Darcy Micrograndiorite	Kennedy Province Intrusives
L Dev-E Carb	Gilberton Formation	Purple-red sandstone, conglomerate, and mudstone
p€-Sil?	Brandy Hot Granite	Etheridge/Pama Province Granitoids
p€	Delaney Granite	Etheridge Province Granitoids
p€	Mount Turner Granite	Etheridge Province Granitoids
p€	Forsayth Granite	Etheridge Province Granitoids
p€	Lane Creek, Corbett and Daniel Creek Formations	Etheridge Province Mica Schists/Metasediments

The aerial magnetics, processed as RTP, highlights the DH Fault due to it being intruded by dolerite intrusives. Minor additional faults defined by regional workers do not emphasis a group of generally subtle NW trending structures visible on the AMAG RTP image. These NW structures are intruded by the Mt Darcy Microgranite in LC50 prospect and may influence the distribution of uranium mineralisation where they intersect the DH Fault.

The ARAD TC image shows the variation in radiometric response of the various major lithologies and supports the geological interpretation. The contrasting background radiometric response of the Brandy Hot Granite (low) and the Mt Turner Granite (high) combine to reduce the effectiveness of broader area imaging of aerial radiometrics to identify the localised and moderate intensity radiometric response of the uranium prospects.

Drummer Hill Fault Exploration Model

Outside of the obvious DH Fault control, features of potential significance to an exploration model include:

(1) Geological associations – Known significant uranium mineralisation is restricted to Forsayth and Brandy Hot Granites, although the DH Fault also intersects the Delaney Granite and Lane Creek Formation. On a local scale the dominant hosts of uranium mineralisation are brittle fractures in the Mt Darcy Microgranite and the fault brecciated northern margin of the dolerite intrusive, although the host granitoids are also mineralised. The dolerite intrudes the DH Fault over a significant portion of its length with an E-W, sub-vertically dipping geometry. The Mt Darcy Microgranodiorite geometry is not well documented, but appears to be controlled by NW-SE trending, steeply dipping structures.

(2) Mineralisation Geometry – the mineralisation at LC50 occurs as a steeply pitching zone within the sub-vertically dipping DH Fault. The maximum strike extent at surface of known significant mineralisation is 210 metres with a maximum width of 25 metres.

(3) Alteration mineralogy – Multiphase alteration has been documented to occur in association with uranium mineralisation in the DH Fault. Of potential exploration significance is localised intense alteration: (1) carbonate alteration of the dolerite, with magnetite destruction; (2) intense albite alteration of felsic lithologies; and (3) intense apatite alteration in zones of brittle fracture. Magnetite destructive alteration of the dolerite intrusive, suggested by variations in magnetic intensity in the image, may prove useful in prioritising prospects.

(4) Alteration geochemistry – A notable association with uranium mineralisation is elevated thorium values related to intense apatite alteration. A secondary guide is reduced K in felsic rocks. Alteration features with a radiometric response, such as elevated eTh and reduced K may prove useful, although the latter is more likely to be an indicator of outcropping dolerite.

(5) Geomorphology - The radiometric response of mineralised prospects is potentially strongly influenced by attenuation of radiometric signature by thin (>0.5m) proximal colluvium cover from adjacent non-mineralised rocks.

Drummer Hill Fault Aerial Geophysics Radiometrics

An evaluation of the effectiveness of Mega's gridded aerial radiometric images over the DH Fault was conducted. There are numerous technical considerations to ensure the quality of aerial radiometric survey results (Horsfel, 1997; Minty, 1997) that were addressed during data collection and processing stages. The Mega survey involved data collection on 100m flight-line spacing with measurements recorded at 70m intervals at a flight height of 50m (UTS Geophysics Ltd, 2007). It is important to note that while sampling is 70m spaced along lines significant resolution is lost due to the unfocussed nature of gamma radiation and the overlap between sample points.

Documentation by Dickson and Scott (1992) indicate that an approximately 2/3 of measured radiation at 50m sensor height and 70m sampling points corresponds with an elliptical cone of 50 x 120m. With 100m between flight-lines there is a zone of 50m between lines with reduced radiometric contribution. In this context the DH Fault mineralisation a fundamental limitation is survey resolution as the target size is small (largest known potential surface expression 25m N-S x 200m E-W at LC50) and the radiometric anomaly area is likely to be reduced by thin cover. The narrow width of the mineralisation, relative to the N-S flight lines, reduces the ability to identify all but intense, wide eU anomalies.

Figure 3 shows images generated from the Georgetown regional aerial survey. These images, based on a 99% clip linear stretch are used on the scale of the Georgetown district for targeted reconnaissance exploration. The dynamic range of the data set is extended by some strongly radioactive Proterozoic granitoids, such as the Th-U enriched Mt Turner Granite, and the low radiometric response of Mesozoic sediments such as the Yappar Member (Figs 2 & 3). The K and Ternary images provide useful geological information, but do not assist in specific targeting. The eU, TC and eTh images provide targeting information, but the dynamic range of the data set result in only the eU image effectively highlighting the known Somerset, LW24, LW30 and LC50 prospects, and an area centred on 756,300mE, as clear anomalies in the context of known location of U mineralisation in the DH Fault.

Figure 4 images used data set clipping to the area over the DH Fault to attempt to reduce the dynamic range of the data set and highlight anomalies more clearly. The outcome is a significant improvement as lithological radiometric highs away from the DH Fault do not distract from the localised anomalies on the host structure, although some lithological anomalies are present in the east. The refined doserate image clearly highlights prospects in the western portion of the DH Fault and anomalies at 747,180mE and 756,300mE. Thorium anomalism is seen to be associated with U occurrences in the western portion of the DH Fault and the additional anomaly at 747180mE. Somerset, LW24 and LC50 occurrences are strongly highlighted in the clipped eU image. The LW30 occurrence and an additional anomaly at 756,300mE are clearly defined eU anomalies. At 747,180mE and 756,990mE eU anomalism, although not intense, is evident. The lack of an aerial radiometric expression for the LE72 U occurrence is notable.

Additional processing of the radiometric data to produce a eU/eTh ratio image did not effectively highlight known U occurrences in the western portion of the fault, although localised elevated values are evident. The U occurrence at LE72, lacking an anomaly on individual radiometric channels, is associated with a subdued eU/eTh anomaly. A strong eU/eTh anomaly is associated with the previously identified eU anomaly at 756,300mE and a less pronounced eU anomaly at 756,990mE. Four eU/eTh anomalies occur between 750,860-752,740mE, with the anomaly at 750,860mE being the most intense eU/eTh along the DH Fault with a peak value of 0.62.

Drummer Hill Fault Ground Radiometrics

The nature and geomorphic setting of uranium mineralisation along the Drummer Fault in the Lineament Prospect, EPMs 14511 and 14827, is such that the aerial geophysical survey is not considered to provide adequate resolution to ensure effective radiometric targeting. Previous work on the structure has included extensive and intensive ground radiometric surveys over the zones 743,480-751,820mE and 757,100-758,300mE by Esso such that 55% of the structure would have to be described as a very mature exploration target. However, previous workers also acknowledge potential difficulties in exploring for the small surface expression of the steeply pitching mineralisation in the context of anomaly scale and attenuation by thin surficial cover. This acknowledgement is in the form of extensive coverage by alpha detectors, trenching and pattern drilling on a 200m spacing in the western portion of the structure.

During 2008 Mega Georgetown conducted a 40m line-spaced ground doserate survey over 17.2 km of strike length of the fault. Four ground scintillometer assay grids, two over known uranium mineralisation and two over aerial doserate/eU survey prospects, were completed to enhance the understanding of the effective resolution of Mega's aerial survey.

Method

The ground radiometric surveys were conducted using a GF Instrument's Gamma Surveyor, linked to a Garmin GPS SMap60cx for location control. Multiple GPS units were used. The four Gamma Surveyor units owned by Mega were checked for cross calibration in advance, with three of the four units being selected as suitable. Spectrometer sampled grids were completed following the standard methodology used by Mega elsewhere within the Georgetown region.

The assay grid lines were flagged in advance with location control using a Garmin GP SMap60cx. The readings were taken with the instrument on a folding camp stool at a nominal height of 40cms above the ground surface. The Gamma Surveyor was in assay mode, with a one minute reading taken. Assay grid design included N-S lines, a line spacing of 20-40m, lines varying from 120-400m in length and a sample spacing of 5-10m.

The doserate grid was designed with N-S lines, a line spacing of 40m, lines varying from 400-660m in length and a sample spacing of 5 seconds, corresponding with readings at a nominal 5 metres spacing. Field assistants walked the grid with the Gamma Surveyor in doserate mode on a shoulder strap at waist level. Average productivity rates per Gamma Surveyor units are estimated at: 1.7 line km/day for 10 x 40m assay grids, 1.0 line km/day for 5 x 40m infill assay grids, and 4.5-7.5 line km/day for doserate grids. The variance in doserate productivity reflects variations in access and terrain.

Work completed:
10 x 40m assay grids - 13.32 line km
5 x 40m infill assay grids – 4.5 line km
40m line-spaced doserate grid – 180.2 line km

Ground Radiometric Assay Grids

Four ground assay grids were completed in advance of the doserate assessment of the DH Fault. Two known uranium occurrences the LC50 (747,840mE) and LE72 (750,100mE) prospects, one drill tested but 'barren' prospect at 747,180mE and one gold prospect that had been costeaned but with no drill testing at 756,300mE. The aim of these grids was to gain a higher resolution understanding of identified aerial eU and doserate anomalies and to determine the potential effectiveness of ground doserate gridding.

In addition brief ground reconnaissance was conducted to inspect highlighted eU/eTh anomalies on the DH Fault, centred on 750,860mE and 756,990mE. These two locations both correspond with abandoned small Au mines listed in the Queensland Minerals Database. Ground inspection of both locations confirmed they are abandoned small open pit mines; Rocky Reward Mine hosted by Brandy Hot Granite (750,860mE) and Drummond Hill Mine hosted by the Delaney Granite (756,990mE).

The data from the survey was gridded at 5m and colour images produced for presentation using MapInfo 8.5 and Discover 8.1 software.

LC50 Prospect (747,840mE) Ground Radiometric Assay Grid

A ground radiometric assay grid was conducted over the LC50 prospect, located on the DH Fault within the Forsayth Granite and proximal to outcropping areas Mount Darcy Microgranodiorite. The prospect is a prominent anomaly on aerial radiometric images for eU and doserate, with less well defined anomalism in the case of eTh and eU/eTh images (Fig 3 & 4). The aerial anomaly has a gridded doserate peak of 155nGy/hr (2.5 x background), a peak eU of 7.4ppm (2.5 x background) and a peak eU/eTh ratio of 0.31. The additional data from an E-W tie-line over the exposed mineralisation is significant as it reinforces and enlarges (E-W) the aerial anomaly.

A review of previous work shows that the LC50 radiometric anomaly was not identified from historic BMR surveys or during initial helicopter radiometric reconnaissance by Esso (Billington, 1977a). Ground inspection indicates that there may have been limited exposure of mineralised basement in an erosion gully, but the radiometric signature has been strongly enhanced by basement exposure due to costeaning.

Documentation is not sufficiently detailed to determine whether additional detailed helicopter radiometrics conducted by Esso identified this prospect before or after ground disturbance (Billington, 1978a).

The ground radiometric assay grid was conducted with an initial 5 x 40m grid over an area of 320 x 400m, in part infilled to 20m line spacing, with lines of 5m spaced sample points (Fig 5). The grid was then extended west and east with 10 x 40m sampling to ensure full coverage. The major eU anomaly (peak 106ppm) and three subsidiary anomalies are present, and are also highlighted in the doserate grid (peak 813 nGy/h). Elevated eTh (peak 89ppm) may contribute to the coincident doserate anomaly, but the corresponding K depletion (1.5-3%) in the alteration zone tends to counter the influence of the elevated eTh in the doserate values.

All four of the eU and doserate anomalies are associated with ground disturbance. The major anomaly, centred on 747 820mE, is an erosion gully and the remnant Esso costean. The anomaly around the collar of drill hole PL79 is readily interpreted as historical contamination relating to this Esso percussion drill hole. Two assay points within 5m of PL79 collar in August 2007 had eU values of 18 and 50ppm, pre-dating any ground disturbance by Mega. The anomaly at 747,900mE corresponds with the formed gravel Mt Turner access road. The eastern most anomaly is an Esso costean exposing shallow bedrock.

The surface projection of known shallow mineralisation, relative to the surface radiometric signature, clearly illustrates that thin (<2m) surficial cover is strongly attenuating the radiometric signature of this uranium mineralised prospect. It is not possible to determine if a significant aerial radiometric anomaly was present before ground disturbance. However, there is adequate evidence to conclude that this prospect would have been highlighted by a ground doserate grid.

LE72 Prospect (750,100mE) Ground Radiometric Assay Grid

A ground radiometric assay grid was conducted over the LE72 prospect, located on the DH Fault within the Brandy Hot Granodiorite. This prospect does not have a significant eU or doserate aerial radiometric response (Fig 3 & 4), but a minor anomaly in the eU/eTh ratio image (peak 0.46) is partially coincident with ground eU and doserate anomalism. Previous work (Billington, 1977a & 1978a) indicates that the LE72 prospect was not identified from historic BMR radiometric surveys, helicopter radiometric reconnaissance or detailed helicopter radiometrics conducted by Esso. Documentation indicates that geological mapping and ground radiometrics, followed up with alpha cup and costeaning defined the prospect as a drilling target.

The ground radiometric assay grid was conducted with an initial 10 x 40m grid over an area 240 x 360m, in part infilled to 20m line spacing, with lines of 5m spaced sample points (Fig 6). A small (60 x 30m) well defined low level eU anomaly (peak 18.6ppm) and two proximal, strike extension subsidiary anomalies are present, and are also highlighted in the doserate grid (peak 203 nGy/h). While subdued, the anomaly has similar characteristics to the LC50 anomaly, with elevated eTh (peak 28.7ppm) and K depletion (1.2-3%) in the alteration zone. A fourth eU and doserate anomalies is associated with ground disturbance. The anomaly around the collar of drill hole PL74 is readily interpreted as historical contamination relating to this Esso percussion drill hole. A single assay point value of 19ppm eU at the drill hole collar is the cause of the anomaly.

The largely laterally continuous anomaly with 3 significant eU and doserate highs is a radiometric response to subcropping mineralised basement. The radiometric response within this prospect clearly illustrates that ground doserate grids have the capability to define subdued radiometric anomalies associated with U mineralisation that are not evident in the aerial radiometric survey data.

747,180mE Ground Radiometric Assay Grid

A ground radiometric assay grid was conducted to refine the understanding of a 125 x 75m EW trending aerial radiometric anomaly located 40m to the north of the interpreted DH Fault, 600m to the west of LC50 prospect. The anomaly is in the Forsayth Granite and is centred 90m to the NW of a local focus of drill testing. The aerial anomaly has a doserate peak of 133nGy/hr (2 x background), a peak eU of 5ppm (2 x background) and a peak eU/eTh ratio of 0.26. Elevated eTh with a peak value of 21ppm (1.5 x background) contributes to the doserate anomaly. The drill tested area to the immediate southeast of the aerial anomaly has previously been costeaned (peak assay 249ppm U), but Esso's four drill holes were radiometrically logged and described as 'barren'. Intersected dolerite and sheared lithologies are interpreted to indicate successful testing of the DH Fault (Billington, 1978a & 1979c).

The ground radiometric assay grid was conducted with an initial 10 x 40m grid over an area of 300 x 360m, and then in part infilled to 20m line spacing, with lines of 5m spaced sample points (Fig 7). This work highlighted a local eU peak (54ppm) associated with exposed minor U mineralisation within an Esso costean. However, outside of the area of ground disturbance there is elevated eU (10ppm, 3 x back ground) within soils and subcrop overlying the DH Fault and extending over 180m E-W.

The aerial doserate anomaly is largely a response to elevated eTh (2-3 x back ground) in soils. The displacement of the weak aerial eU anomaly is in part a response to gridding and distribution of the aerial survey sampling points, with the presence of an E-W tie-line being significant in this case. The higher resolution ground doserate radiometrics proved effective in defining the area of minor uranium mineralisation.

756,300mE Ground Radiometric Assay Grid

A ground radiometric assay grid was conducted to assess a 200m diameter bulls-eye aerial eU ARAD anomaly located on the DH Fault in the Lane Creek Formation, 3 kilometres NW of Mt Turner. The anomaly is well defined on aerial radiometric eU, doserate and eU/eTh images (Fig 4). The aerial anomaly has a gridded doserate peak of 103nGy/hr (1.5 x background), a peak eU of 7.4ppm (2.0 x background) and a peak eU/eTh ratio of 0.54. Previous workers identified this anomaly with helicopter radiometrics (anom 48/4090) and conducted a brief ground assessment (Billington, 1979e). The source of the anomaly was described as an E-W quartz blow with gossanous material in a costean. No additional information was provided and no follow up work was recommended.

The ground radiometric assay grid was conducted with a 10 x 40m grid over an area of 280 x 340m and 5m readings over the length of the costean (Fig 8). The primary eU anomaly (peak 33ppm) and a subsidiary anomaly are clearly evident, and are also highlighted in the doserate grid (peak 245 nGy/h). The whole area of the anomaly is disturbed ground; a central costean, a subsidiary shallow costean to the north and the weathered metasediments of the Lane Creek Formation, excavated from the costeans, spread over the ground surface.

The anomaly is readily interpreted as being a radiometric response to low-level uranium mineralisation in quartz veins and metasediments within the DH Fault zone. Ground disturbance has strongly enhanced the aerial radiometric response of this mineralisation, not only by exposing mineralisation, but by spreading the mineralised lithology over a larger area. In examples such as this, broad surface areas of low-grade mineralisation, ground radiometric assessment offers no detection advantage over aerial radiometrics.

750860mE and 756990mE Ground Assay Reconnaissance

Ground reconnaissance was conducted to inspect highlighted eU/eTh anomalies on the DH Fault, centred on 750860mE and 756990mE. These two locations both correspond with abandoned small Au mines listed in the Queensland Minerals Database. Ground inspection of both locations confirmed they are abandoned small open pit mines; Rocky Reward Mine hosted by Brandy Hot Granite (750,860mE) and Drummond Hill Mine hosted by the Delaney Granite (756,990mE).

In both cases elevated eU levels were associated with alteration on the DH Fault, but with peak values of less than 30ppm eU. The exposed fresh lithologies have expected subdued eTh values relative to surrounding residual surfaces, as weather associated Th enrichment is absent. Thus the observed anomalous eU/eTh values are explained by ground disturbance and do not highlighting significant U prospectivity.

Results: Ground Radiometric Assay Grids

The ground assay grids over specific prospects show the advantage of higher resolution spectral evaluation of radiometric anomalies over aerial radiometrics. Broad aerial radiometric anomalies are refined to multiple smaller, higher intensity anomalies corresponding directly with outcropping mineralisation. Some smaller scale radiometric anomalies not visible on the aerial radiometrics images are readily identified at higher resolution. The significant attenuation of radiometric signatures by thin surficial cover is also clearly illustrated.

An examination of the eU anomalies and corresponding ground radiometric doserate response shows a strong correlation, although doserate generally shows a lower contrast. In the aerial radiometric data set broad eTh anomalism in areas adjacent to mineralisation can mask U mineralisation, but a direct correlation is evident in the ground radiometrics. These results support the conclusion that ground doserate assessment can contribute to identifying additional exploration targets on the DH Fault, if present.

Ground Doserate Grid

A 40m line-spaced ground doserate grid was completed over 17.2km of strike length of the DH Fault, from 743,520mE to 760,760mE, with N-S lines of 400-600m length and a total of 180.2 line-km being completed. A sample spacing of 5 seconds, corresponding with readings at a nominal 5 metres spacing, was used. The resultant data set was gridded at 10m and colour images produced for presentation using MapInfo 8.5 and Discover 8.1 software. The results of the survey, compared to aerial radiometric coverage are shown in Figures 9a and 9b.

Some of the outcomes predicted from the ground assay grids, the area of doserate anomalies generally being reduced and anomaly intensity enhanced, are evident. The survey clearly identifies and enhances anomalies at the majority of known prospects, with the exception of the prospect LE72 where no clear anomaly is defined. In the case of LC50 the doserate anomaly is influenced by relatively high K and eTh to the immediate NW of the U mineralisation, although a secondary anomaly to the west is differentiated. In addition, four minor anomalies of potential interest are present at 748,200mE, 748,360mE, 749,520mE and 755,890mE.

The absence of anomalism associated with LE72 in the ground doserate image, in the context of the observed anomalism in the ground assay images (Fig 6), highlights a potential weakness in the approach to gridding and imaging the ground doserate data set. The dynamic range of the data set, in part due to significant variation in the background radiometric response of the host lithologies, needs to be taken into account. The approach taken to resolve this challenge involved selecting subsets of the ground doserate data based on the geological mapping shown in Figure 2b, normalising the subsets using the Discover 8.1 statistical utility, and recombining the subsets for gridding and imaging. The resulting images are shown in Figure 9c and 9d.

The normalisation of the ground doserate data, based on host lithology considerably enhanced the dynamic range of the data in the areas where the Lane Creek Formation and the Brandy Hot Granite are the host lithologies. This enhancement highlights radiometric anomalism known to be present at LE72 prospect and 749,520mE. In addition, three minor anomalies of potential interest are present at 750,360mE, 752,680mE and 753,600mE. Other doserate anomalies overlying the DH Fault outcrop trend are associated with Quaternary alluvium, or to the east of 756,300mE, are readily interpreted to be non-mineralised lithologies. A total of 7 additional radiometric anomalies were identified that may warrant additional assessment.

Doserate anomalies at 748,200mE and 748,360mE have limited potential given previous percussion drill testing this area at 100m spacing. However, they represent an eastward extension of the LC50 mineralisation and expanding the 40m line-spaced LC50 ground assay grid eastward is justified. The doserate anomaly at 749,520mE was directly tested by Esso's drill hole PL13, with the minor mineralisation intersected explaining the observed surface anomaly. Trenching 100m to the east and west also restrict the strike potential of this anomaly and no additional work is justified.

The doserate anomalies at LE72 and to the west (750,360mE) are one of the better examples of subtle ground radiometric anomalies that were more clearly defined by Esso's alpha cup survey (anomaly 750080-750420mE) than by Esso's ground radiometric survey. The secondary doserate anomaly at 750,360mE, identified in this survey, is largely explained by mineralised intersections in surrounding Esso drill holes PL15, PL16 and DL19. While this area has had significant drill testing it is the eastern extension of the LE72 mineralisation and expanding the 40m line-spaced LE72 ground assay grid eastward and evaluation in the context of previous drilling is justified.

Three doserate anomalies were identified to the east of the intense ground assessment of Esso's historic exploration program. The 755,890mE anomaly is explained by trenching associated with previous Au exploration and is considered to be very similar to the 756,300mE prospect. Accordingly, no additional work is justified. Doserate anomalies at 752,680mE and 753,600mE are of low intensity, but some additional assessment is justified. Surface exploration with local radiometric assay grids and geological/ geomorphological mapping would determine prospectivity.

The survey demonstrated the advantage of higher resolution ground doserate assessment over aerial radiometrics. Variations in the dynamic range of the host lithology radiometric response required statistical normalisation to ensure all anomalies are highlighted by gridding and imaging of the data set. Limit additional prospectivity was identified.

Conclusions and recommendations

The ground radiometric doserate survey over the strike length of the DH Fault in EPMs 14827 and 14511, including orientation ground radiometric assay grids at 4 prospects, provided effective surface reconnaissance assessment of the U deposit potential of this mineralised structure. Variations in the background radiometric response of host lithologies required that statistic normalisation be applied to the data set to enhance anomaly detection. The application of this technique to Mega's aerial radiometric data set may also prove effective in other areas of the Georgetown district being explored for U mineralisation.

Follow up exploration recommended is limited to eastward extension of ground assay grids in two drill tested prospects and assessment of two low intensity doserate anomalies:

LC50 – eastward extension of the 10 x 40m assay grid, with infill to 5 x 20m as justified, to 748,440mE.
LE72 – eastward extension of the 10 x 40m assay grid, with infill to 5 x 20m as justified, to 750,440mE.
752,680mE doserate anomaly – a three line 10 x 40m assay grid, with infill to 5 x 20m as justified. Geological and geomorphological mapping required.
753,600mE doserate anomaly – a three line 10 x 40m assay grid, with infill to 5 x 20m as justified. Geological and geomorphological mapping required.

Further assessment of the remaining potential for U mineralisation on the DH Fault will require subsurface assessment ranging from auger drilling through surficial cover to detailed evaluation of previous drill testing.

References

Bain, J.H. and J.J. Draper 1997: North Queensland Geology, AGSO Bull 240 and Qld DME Queensland Geology 9.
Bain, J.C., Withnall, I.W., Oversby, B.S. and D.E. Mackenzie 1985: Geology of the Georgetown Region, Queensland, 1:250,000 Map. Aust BMR.
Billington, W.G. 1977a: Annual Report For A-P 1596M, Mount Turner Project 428. Esso Exploration & Production (Aust) Inc. QDEX CR 6031.
Billington, W.G. 1977b: 50 Percent Relinquishment Report For A-P 1596M, Mount Turner Project 428. Esso Exploration & Production (Aust) Inc. QDEX CR 6032.
Billington, W.G. 1978a: Annual Report For A-P 1596M (4 Volumes). Esso Exploration & Production (Aust) Inc. QDEX CR 6509.
Billington, W.G. 1978b: Mount Darcy Project 440 A-P 1799M, Six Monthly Report to Queensland Department of Mines, Period Feb 1978-August 1978. QDEX CR 6666
Billington, W.G. 1979a: Six Monthly Report to Queensland Mines Department, January 1979, A-P 1799M. QDEX CR 6856.
Billington, W.G. 1979b: A-P 1996, Half-yearly report for period ended February 1979. Esso Exploration & Production (Aust) Inc. QDEX CR 7034.
Billington, W.G. 1979c: Annual Report For 1978, Mount Turner, A-P 1596M, Queensland. QDEX CR 7111.
Billington, W.G. 1979d: Mount Darcy Prospect - A-P 1799M, Six Monthly Report To July 1979 to Queensland Mines Department. Esso Exploration & Production (Aust) Inc. QDEX CR 7211.
Billington, W.G. 1979e: Aspasia Project 448, Half-yearly report for period ended August 1979. Esso Exploration & Production (Aust) Inc. QDEX CR 7485.
Billington, W.G. 1980a: A-P 1596M, Annual Report For 1979, Mount Turner Prospect 428. Esso Exploration & Production (Aust) Inc. QDEX CR 7606.
Billington, W.G. 1980b: A-P 1799M, Mount Darcy, Six Monthly Report to Queensland Mines Department. Esso Exploration & Production (Aust) Inc. QDEX CR 7783
Billington, W.G. 1980c: A-P 1996M Aspasia (Mt Turner), six monthly report to QMD. Esso Exploration & Production (Aust) Inc. QDEX CR 7787.
Clifford, B.A. 2009a: EPM 14827, 2007 Drilling Report For Lineament Central 50 Prospect. Mega Georgetown Pty Ltd.
Clifford, B.A. 2009b: EPM 14827, 2008 Drilling Report For Lineament Central 50 Prospect. Mega Georgetown Pty Ltd.
Dickson, B.L. & K.M. Scott 1992: Interpretation of aerial gamma-ray surveys : notes for technology transfer meetings : AMIRA project 263
Fleming, A.W. 1976: Quarterly Progress Report, A-P 1596M, Georgetown, For Period 01.01.76-March 1976. Dolphin Exploration Company Pty Ltd. QDEX CR 5554
Geological Survey of Queensland 2000: Georgetown 1:250,000 sheet in digital vector format. Natural Resources and Mines, Natural Resource Sciences.
Herrmann, W 2007: V16 & V17 - Somerset-Lineament EPM 14827-Radiometric Reconnaissance. Mega Georgetown Ltd.
Horsfall, K.R. 1997: Airborne magnetic and gamma-ray data acquisition. AGSO Journal of Australian Geology & Geophysics Volume 17(2), p23-30.
Minty, B.R. 1997: Fundamentals of airborne gamma-ray spectrometry. AGSO Journal of Australian Geology & Geophysics Volume 17(2), 39-50.
Okill, R. 1981: A-P 1596M, 1799M, 1996M, Georgetown, Queensland, Final Report. Amdex Mining Ltd. QDEX CR 8426.
Owen, F.T. 1983: A-P 2779M, Georgetown, N. QLD, Final Report. Gippsland Oil & Minerals N. L. QDEX CR 11891.
UTS Geophysics Ltd 2007: Detailed Airborne Magnetic, Radiometric and Digital Terrain Survey Georgetown Project (UTS Job #A775)
Stevens- Hoare, N.P. 1982: A-P 2799M, NW of Georgetown, six monthly report to 15.12.81. Goldfields Exploration Pty Ltd. QDEX CR 10439.
Stevens- Hoare, N.P. 1982: Report on relinquished area of A-P 2779M, NW of Georgetown. Goldfields Exploration Pty Ltd. QDEX CR 10440.

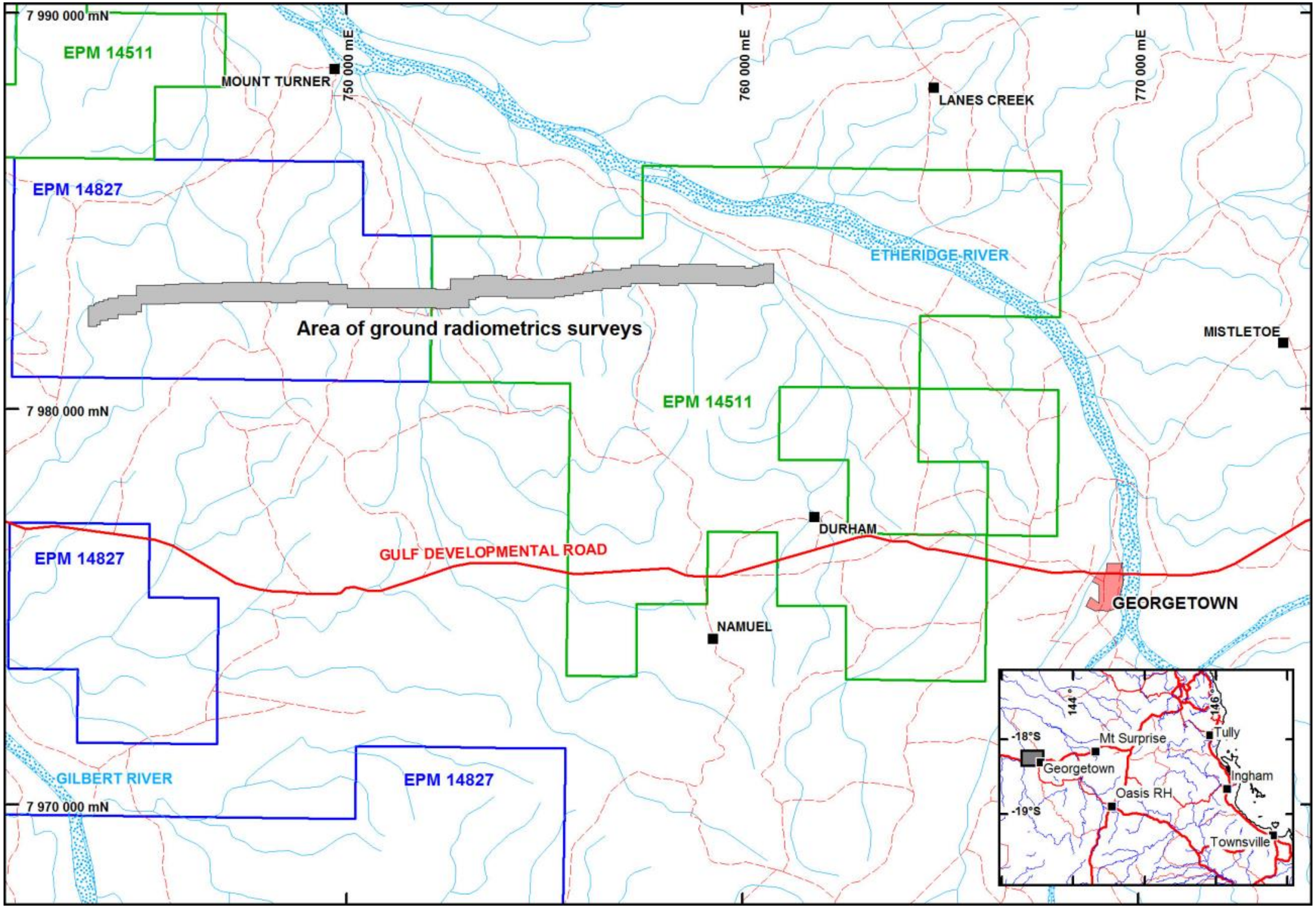


Figure 1: Location of tenements and Drummer Hill Fault ground radiometric surveys.

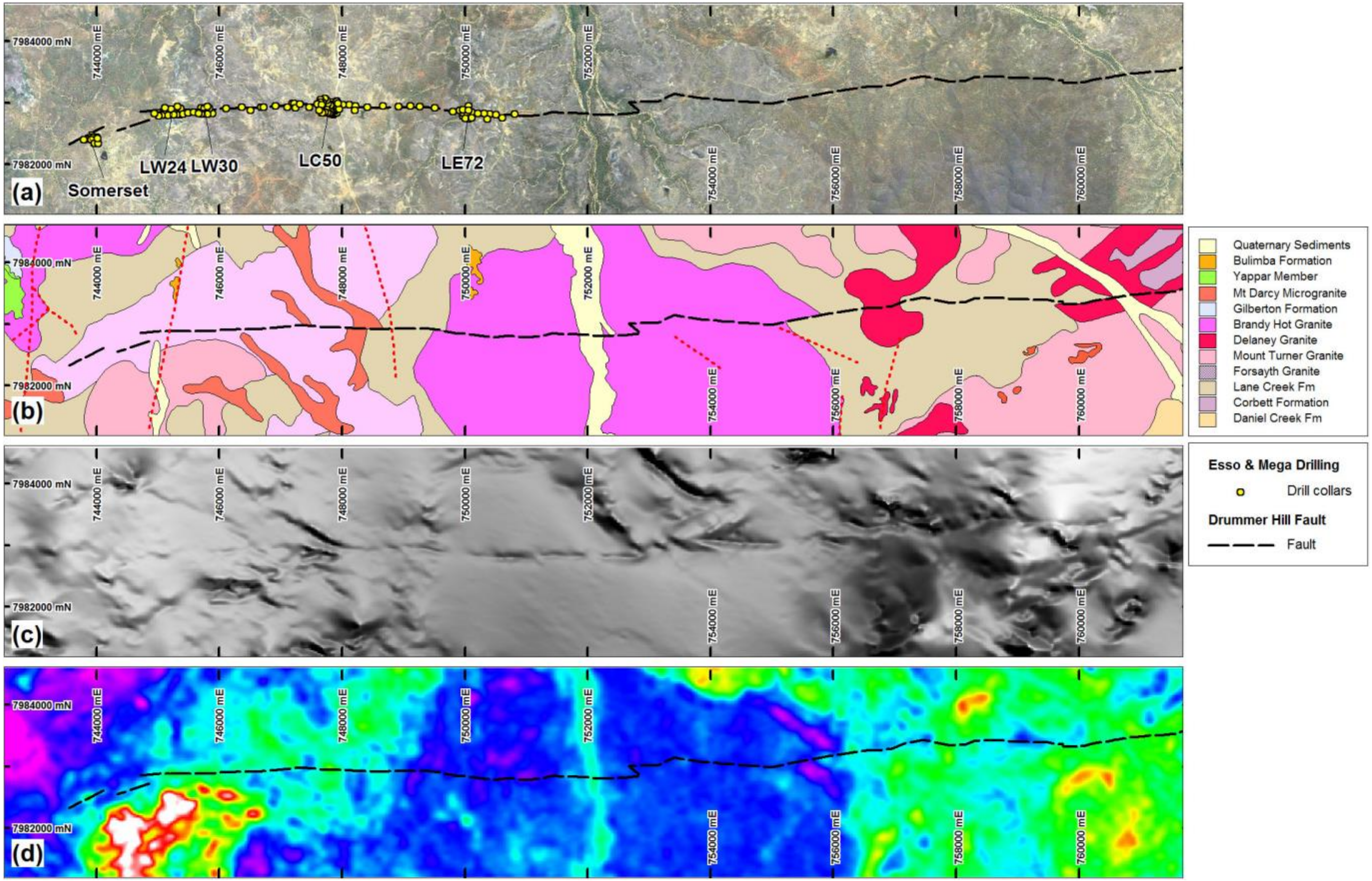


Figure 2: Drummer Hill Fault (a) ALOS, (b) Geology (modified after GSQ, 2000), (c) AMAG RTP and (d) ARAD TC

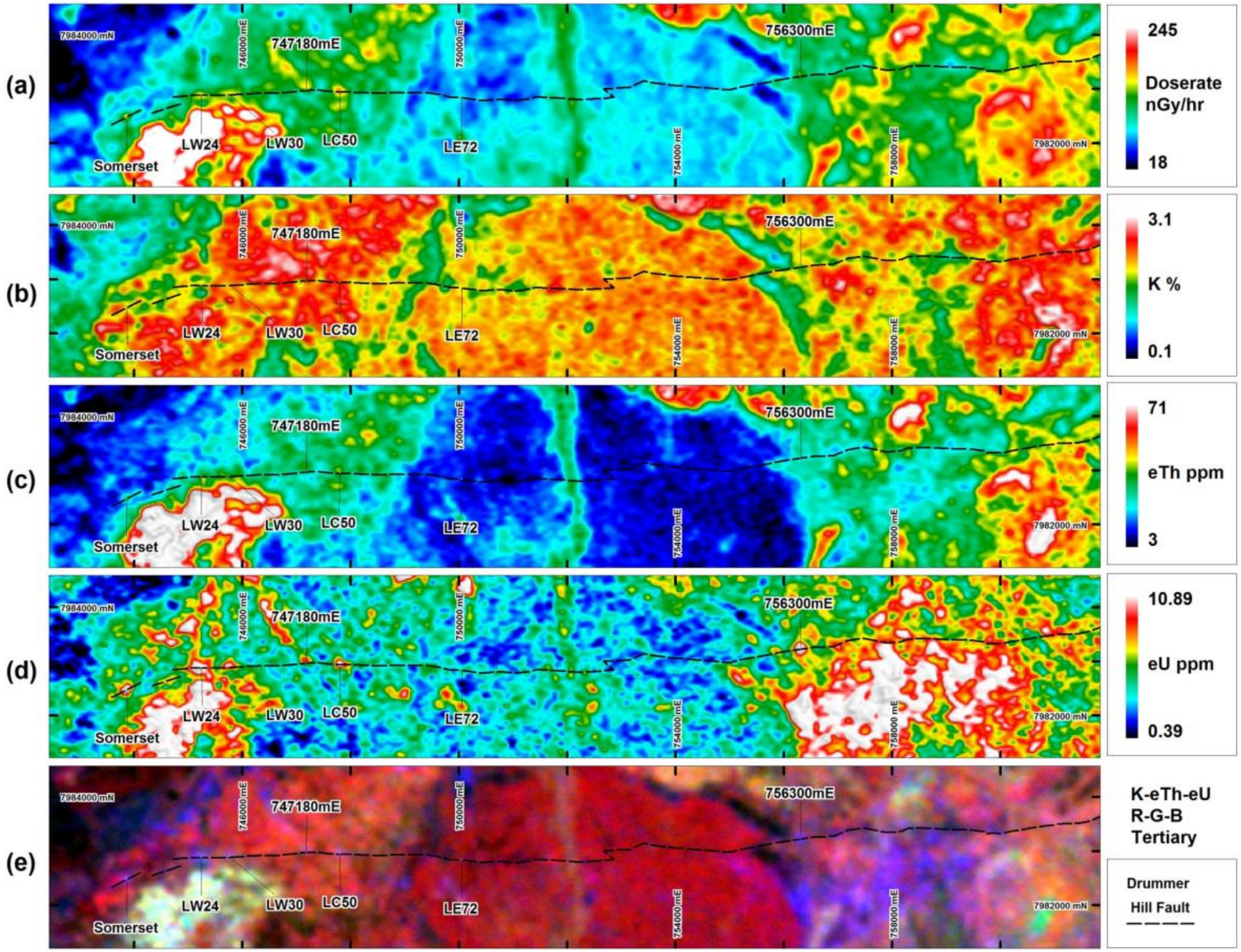


Figure 3: Drummer Hill Fault aerial radiometrics enhance to survey area dynamic range (99% clipped) of individual channels.

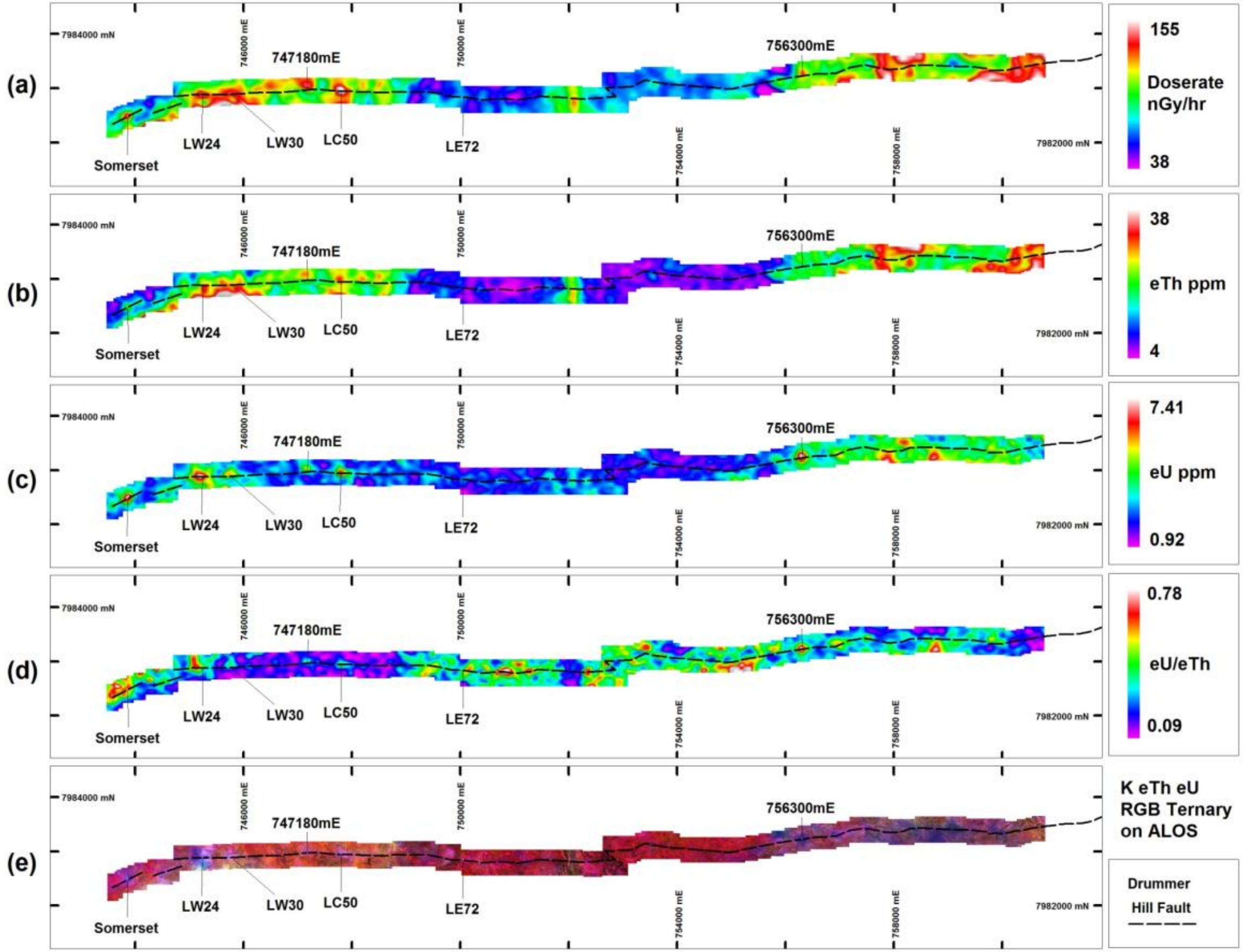


Figure 4: Drummer Hill Fault aerial radiometrics clipped to DH Fault trend to enhance dynamic range of individual channels.

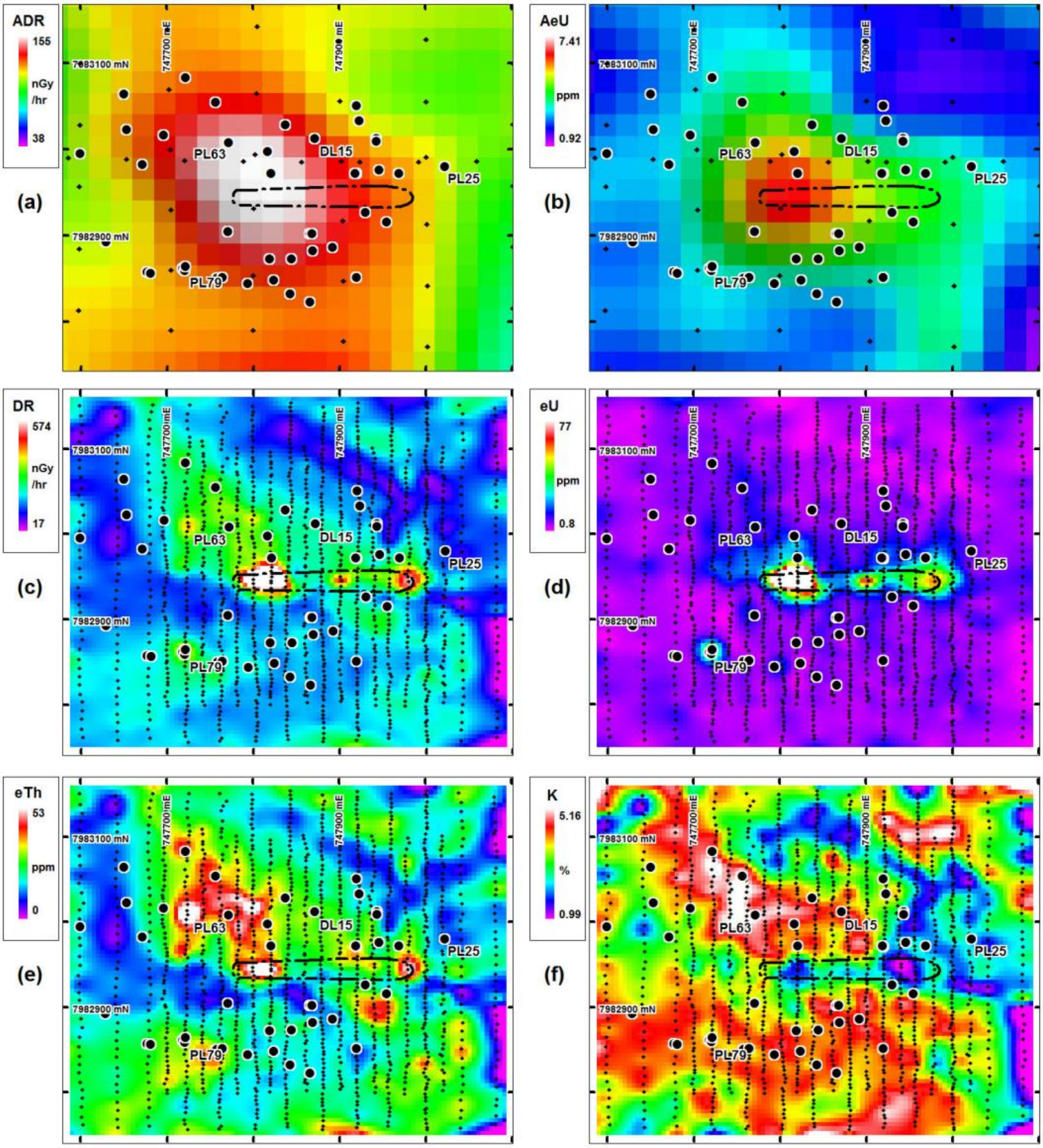


Figure 5: Aerial and ground (assay) radiometrics LC50 prospect, 747 840mE: (a) Mega aerial radiometric survey doserate, (b) Mega aerial radiometric survey eU, (c) Mega ground radiometric survey doserate, (d) Mega ground radiometric survey eU, (e) Mega ground radiometric survey eTh, and (f) Mega ground radiometric survey K. Radiometric sample points and surface projection of high grade uranium mineralisation shown.

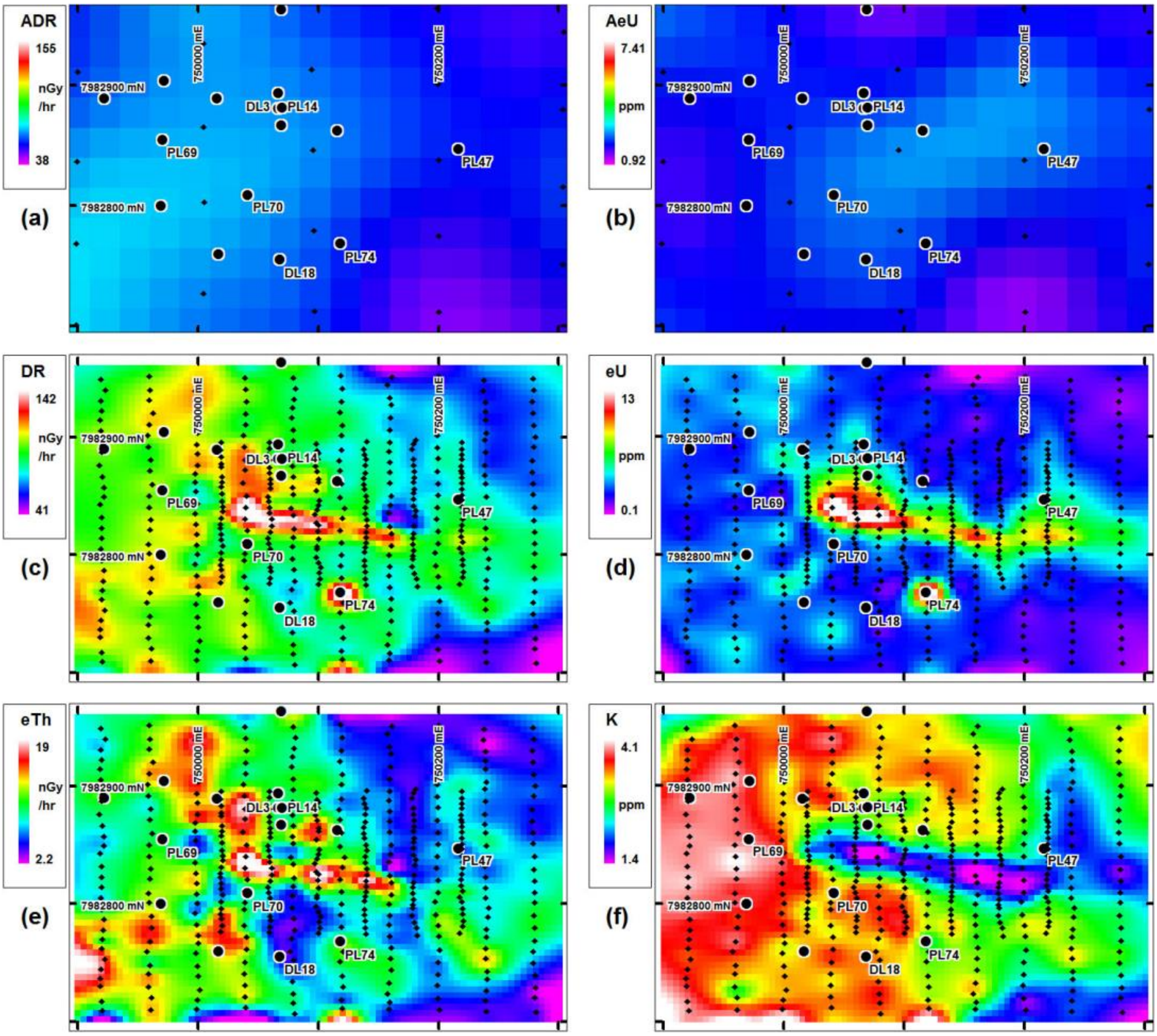


Figure 6: Aerial and ground (assay) radiometrics LE72 prospect, 750 100mE: (a) Mega aerial radiometric survey doserate, (b) Mega aerial radiometric survey eU, (c) Mega ground radiometric survey doserate, (d) Mega ground radiometric survey eU, (e) Mega ground radiometric survey eTh, and (f) Mega ground radiometric survey K. Radiometric sample points shown.

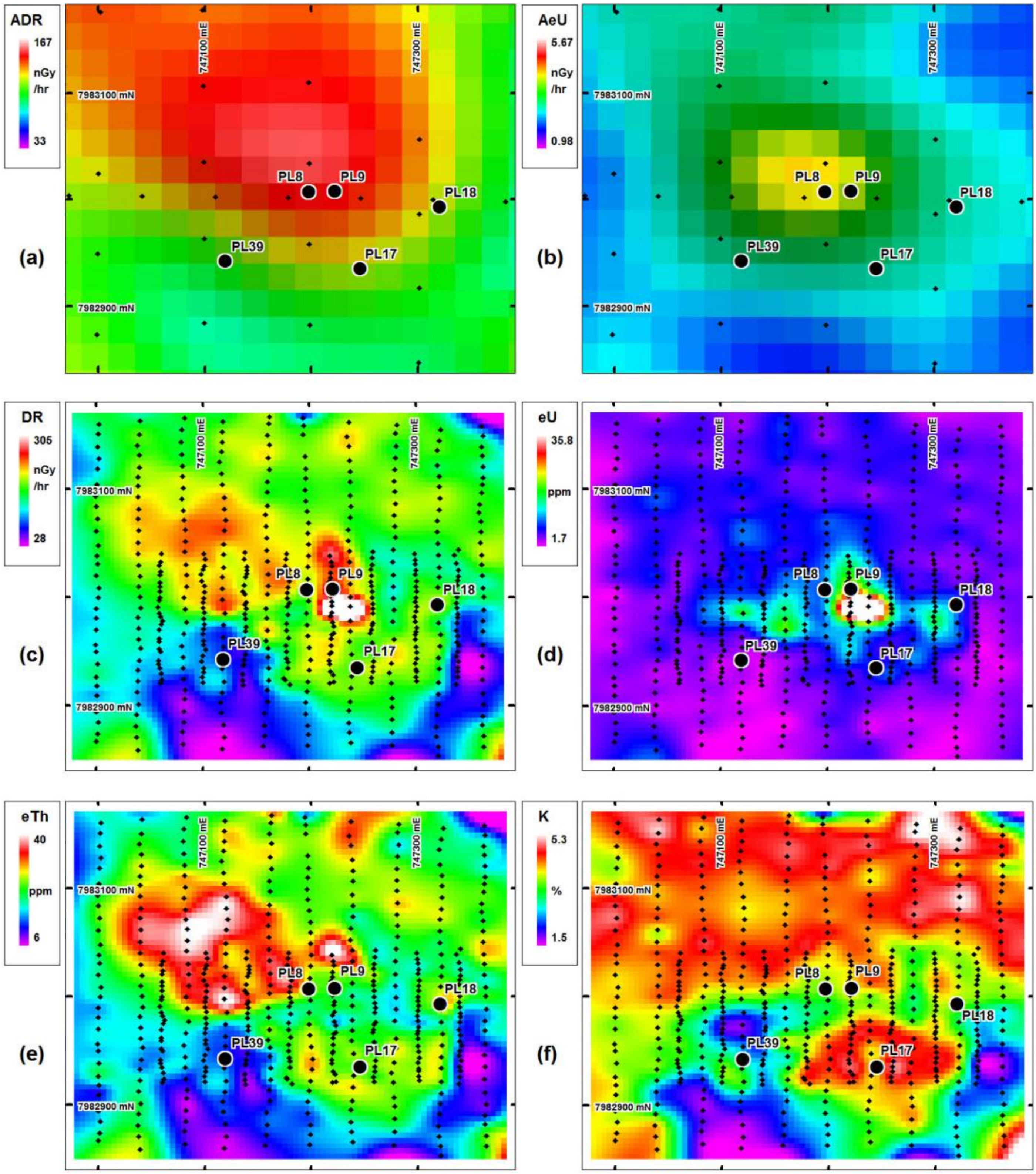


Figure 7: Aerial and ground (assay) radiometrics 747 180mE: (a) Mega aerial radiometric survey doserate (with sampling points including tie-line), (b) Mega aerial radiometric survey eU, (c) Mega ground radiometric survey doserate, (d) Mega ground radiometric survey eU, (e) Mega ground radiometric survey eTh, and (f) Mega ground radiometric survey K. Radiometric sample points shown.

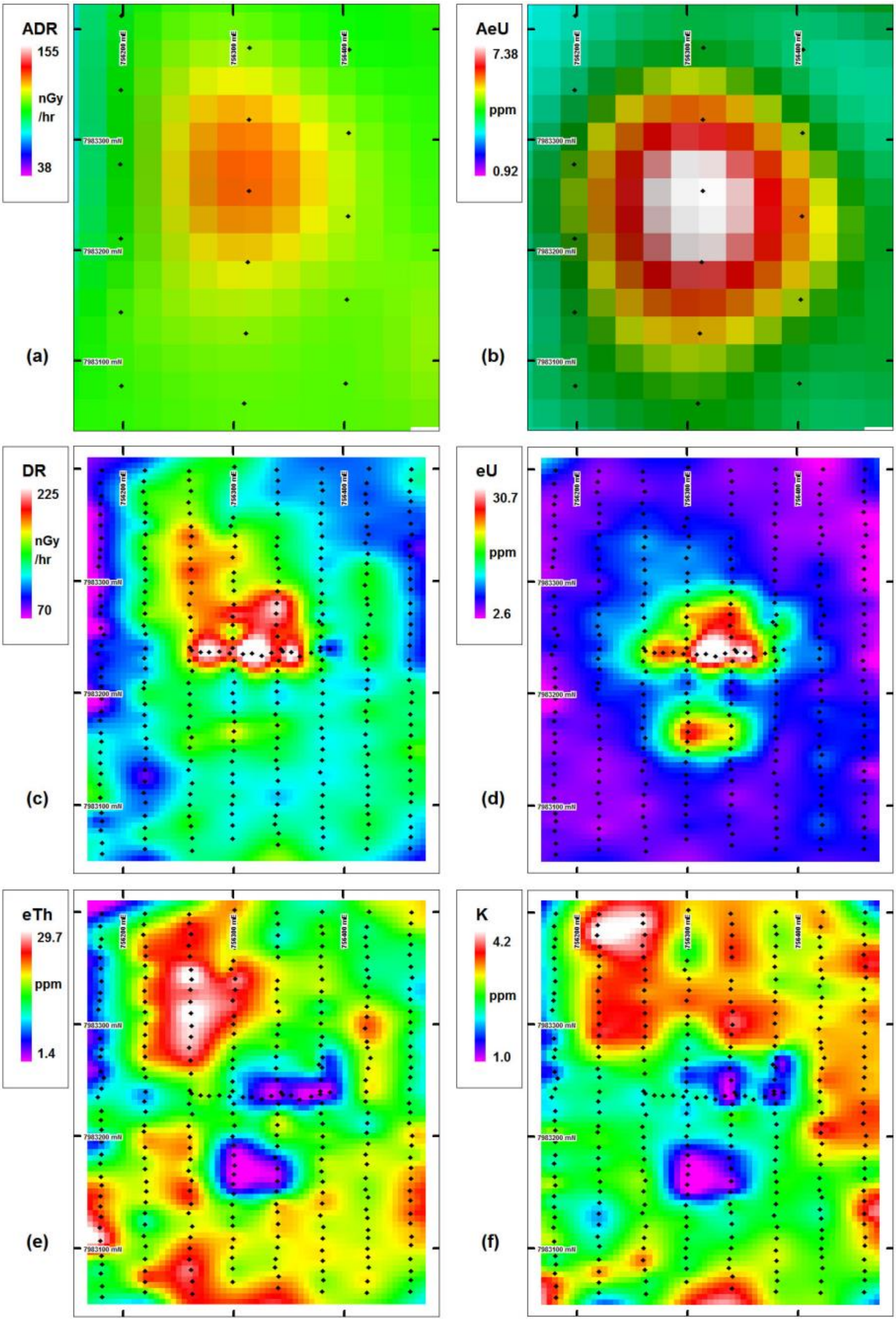


Figure 8: Aerial and ground (assay) radiometrics 756 300mE: (a) Mega aerial radiometric survey doserate, (b) Mega aerial radiometric survey eU, (c) Mega ground radiometric survey doserate, (d) Mega ground radiometric survey eU, (e) Mega ground radiometric survey eTh, and (f) Mega ground radiometric survey K. Radiometric sample points shown.

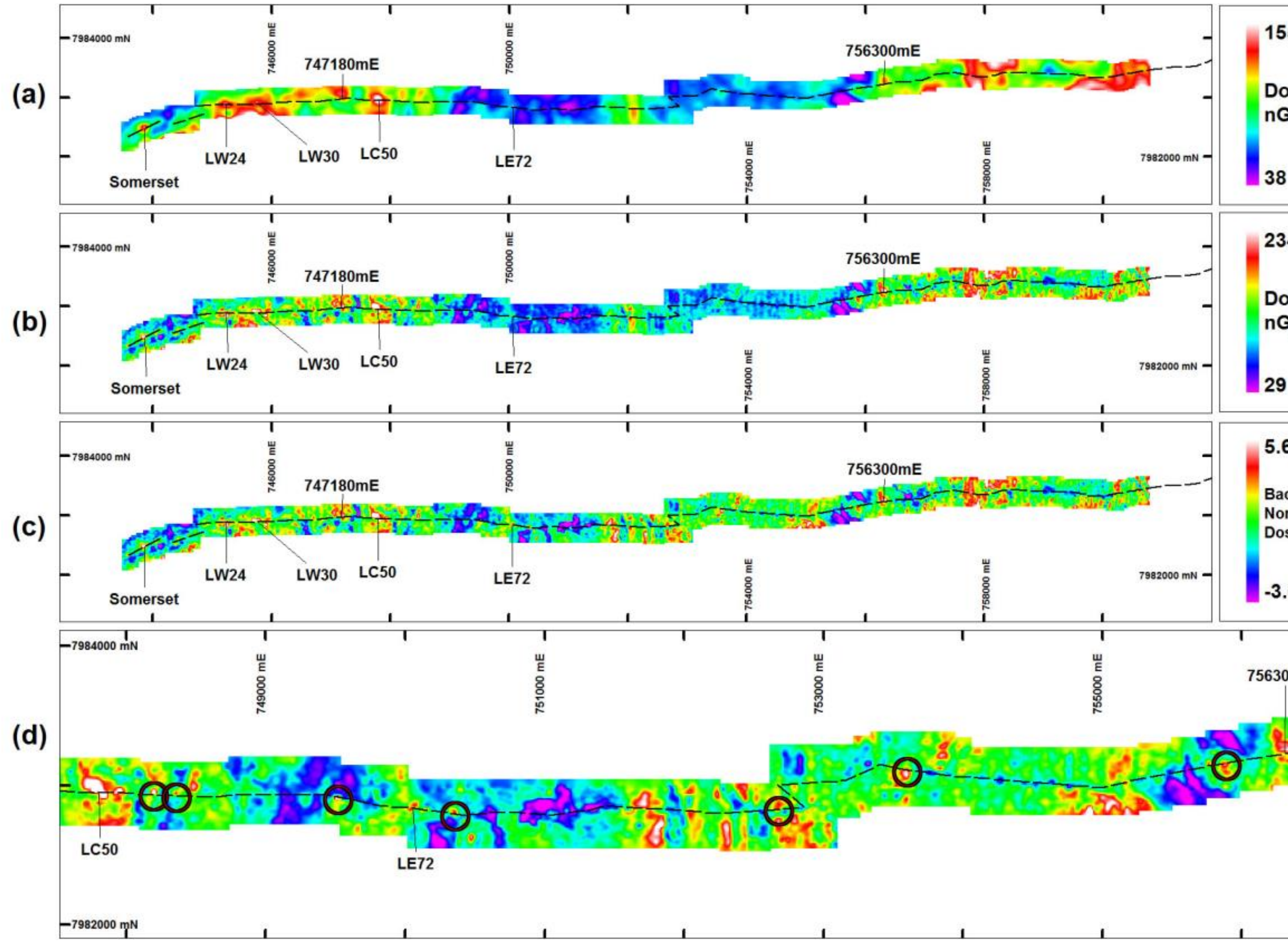


Figure 9: Aerial and ground (doserate) radiometrics: (a) Mega aerial radiometric survey doserate, (b) Mega ground radiometric survey doserate, (c) Mega ground radiometric survey doserate normalised for host lithology, (d) Mega ground radiometric survey doserate normalised for host lithology, expanded central region.