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EL 4280 – EL 4282

WARANA HILL AREAS 1-3

JOINT ANNUAL REPORTS TO LICENCES' EXPIRY/SURRENDER, FOR THE PERIOD 30/6/2009 TO 29/6/2011

Submitted by
SA Beach Sands Pty Ltd
2011

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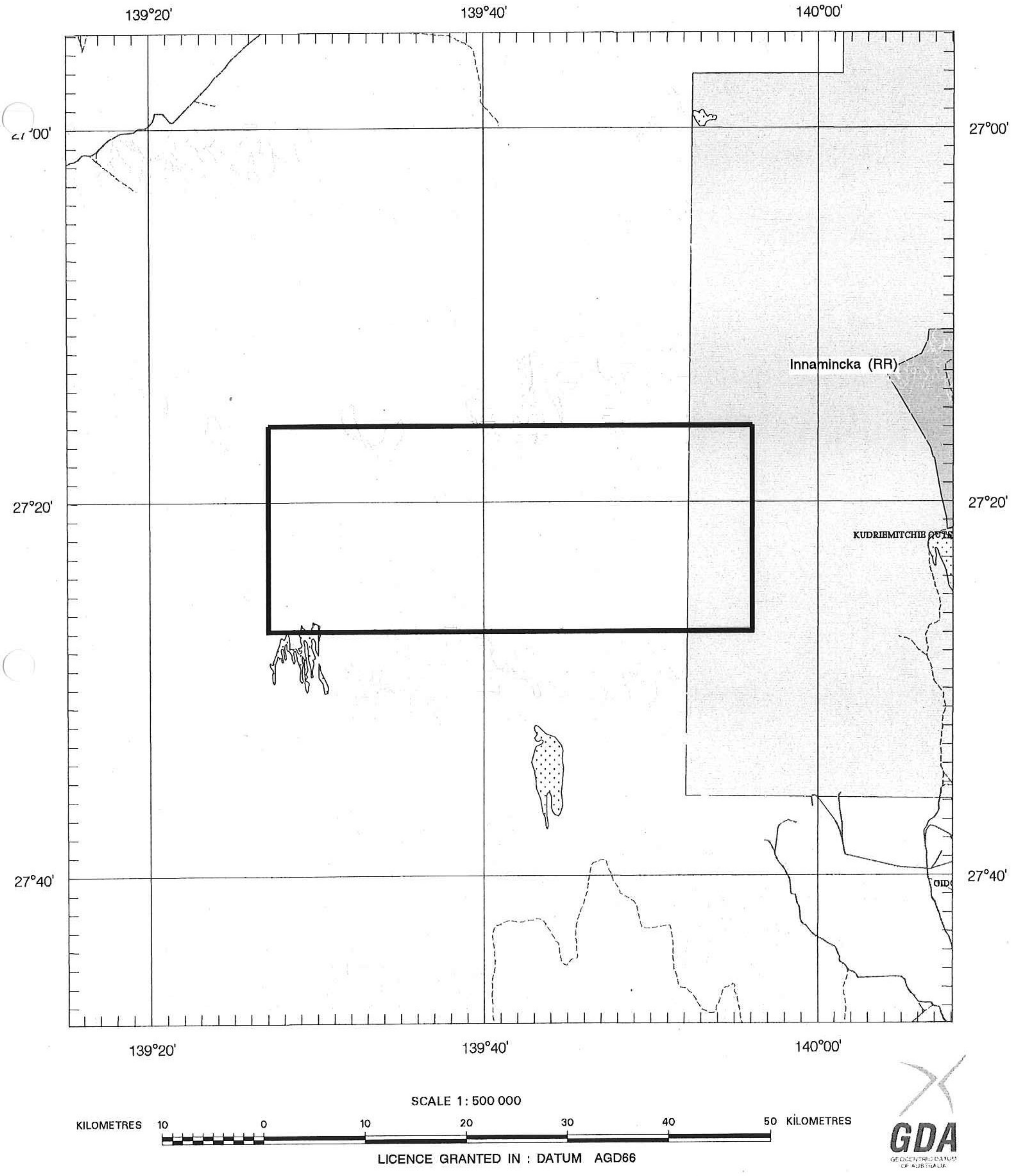
Government of South Australia
Department for Manufacturing, Innovation, Trade, Resources and Energy

SCHEDULE A



APPLICANT : **SA BEACH SANDS PTY LTD**

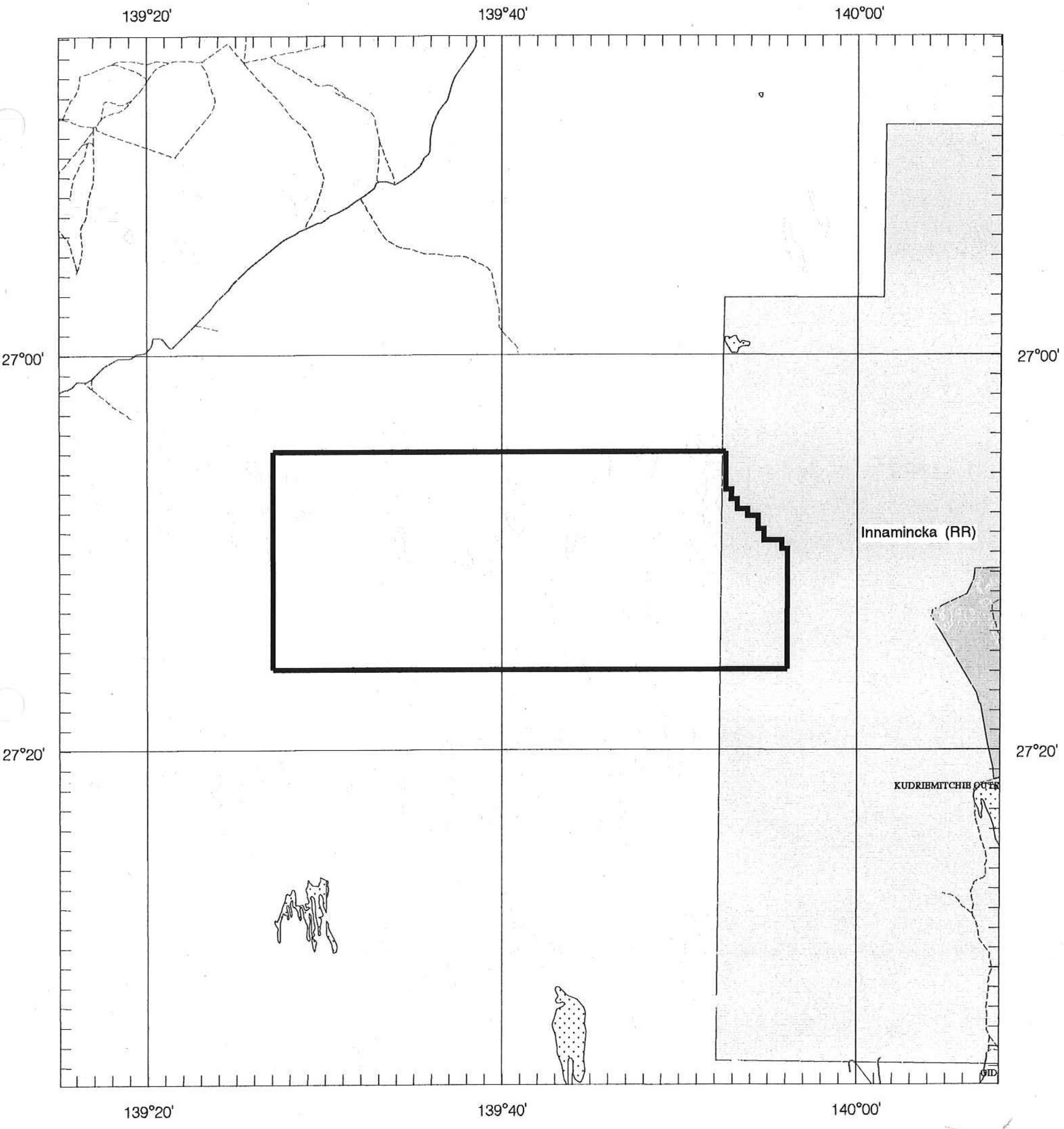
FILE REF : **140/08** TYPE : **MINERAL ONLY** AREA : **971** km² (approx.)

1:250000 MAPSHEETS : **GASON INNAMINCKA**

LOCALITY : **WARANA HILL 1 AREA - Approximately 95 km northwest of Moomba**

DATE GRANTED : **30-Jun-2009** DATE EXPIRED : **29-Jun-2010** EL NO : **4280**

SCHEDULE A



SCALE 1: 500 000

KILOMETRES 10 0 10 20 30 40 50 KILOMETRES

LICENCE GRANTED IN : DATUM AGD66

GDA
GEOCENTRIC DATUM OF AUSTRALIA

APPLICANT : **SA BEACH SANDS PTY LTD**

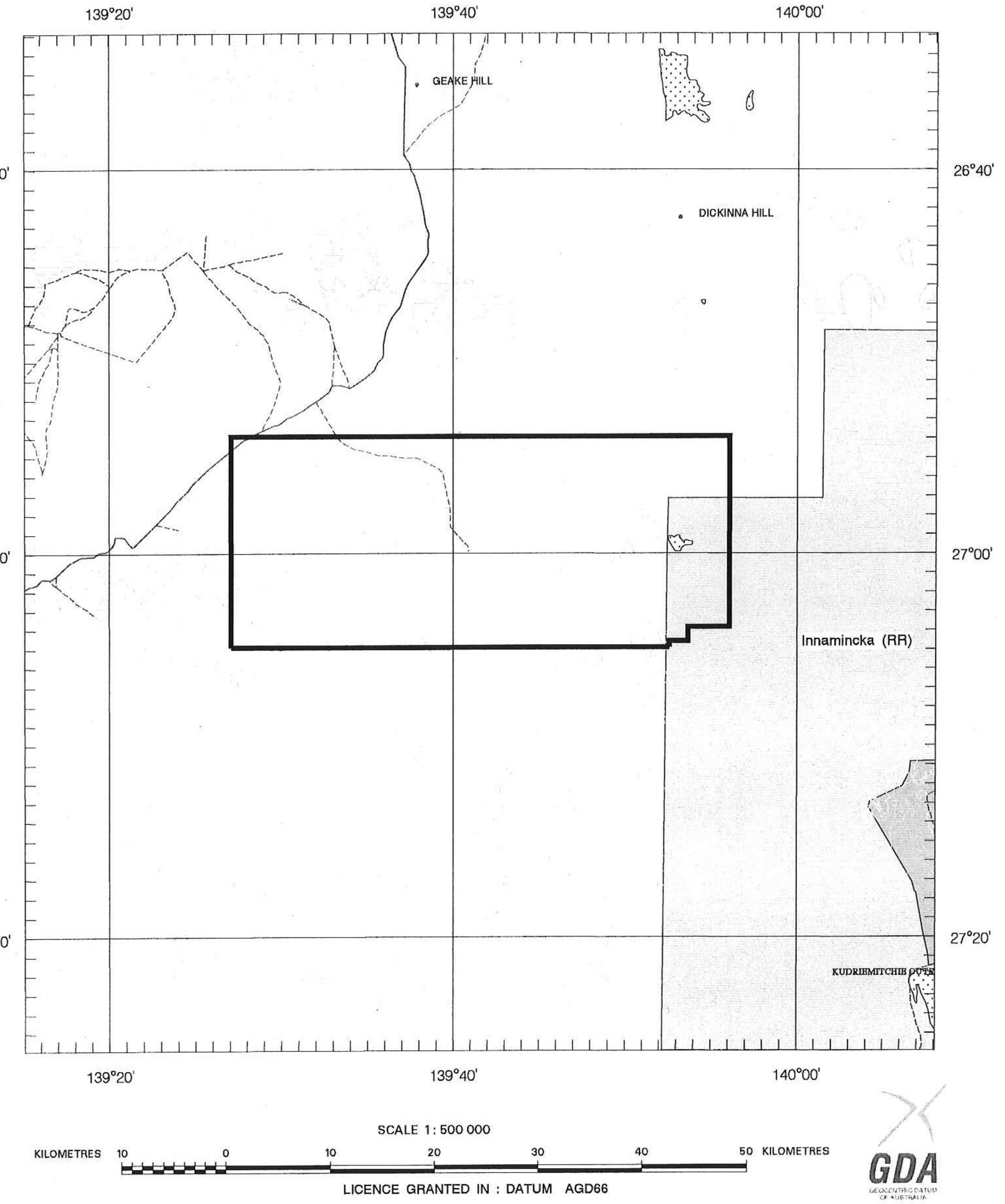
FILE REF : **141/08** TYPE : **MINERAL ONLY** AREA : **935** km² (approx.)

1:250000 MAPSHEETS : **GASON INNAMINCKA**

LOCALITY : **WARANA HILL 2 AREA - Approximately 110 km NNW of Moomba**

DATE GRANTED : **30-Jun-2009** DATE EXPIRED : **29-Jun-2010** EL NO : **4281**

SCHEDULE A



APPLICANT : **SA BEACH SANDS PTY LTD**

FILE REF : **142/08** TYPE : **MINERAL ONLY** AREA : **965** km² (approx.)

1:250000 MAPSHEETS : **PANDIE PANDIE CORDILLO GASON INNAMINCKA**

LOCALITY : **WARANA HILL 3 AREA - Approximately 130 km NNW of Moomba**

DATE GRANTED : **30-Jun-2009** DATE EXPIRED : **29-Jun-2010** EL NO : **4282**

near surface commodities

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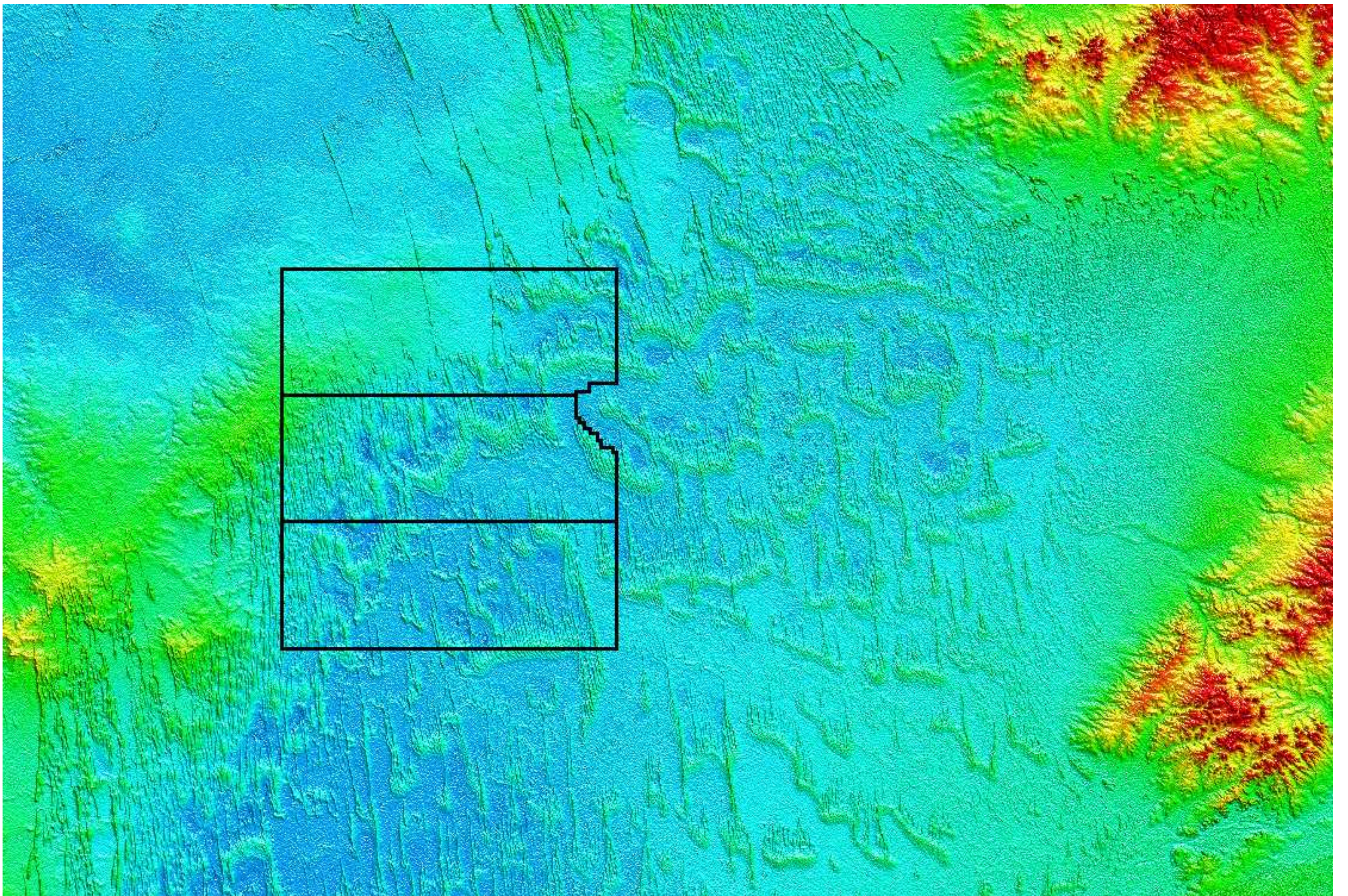
Greenwich NSW 2065
Tel +61 2 9404 8877
Mob +61 414 614 117

Annual Report on EL 4280, 4281 & 4282 to 29th June 2010

September, 2010

SA Beach Sands Pty Ltd



Contents

Introduction

This Annual report on EL 4280, 4281 and 4282, South Australia covers geosciences studies performed by Near Surface Commodities on behalf of SA Mineral Sands up until the end of June 2010. Our work on this project covered a compilation of geophysical data and its integration with other geosciences data collated by SA Beach Sands. A locality map for the exploration licences 4280, 4281 and 4282 is shown on the following page.

A data set was compiled from public sources to cover the licence areas and surrounding regions to provide a context for interpretation. The following data sets were obtained from PIRSA and Geoscience Australia:

- Aeromagnetic survey grid
- Total count spectrometer grid
- Equivalent potassium concentration grid
- Equivalent uranium concentration grid
- Equivalent thorium concentration grid
- Digital elevation grid derived from the aeromagnetic survey
- Digital aeromagnetic grid derived from the SRTM data
- Landsat TM derived from Bands 7,4, 2
- Raster 250K topographic map series

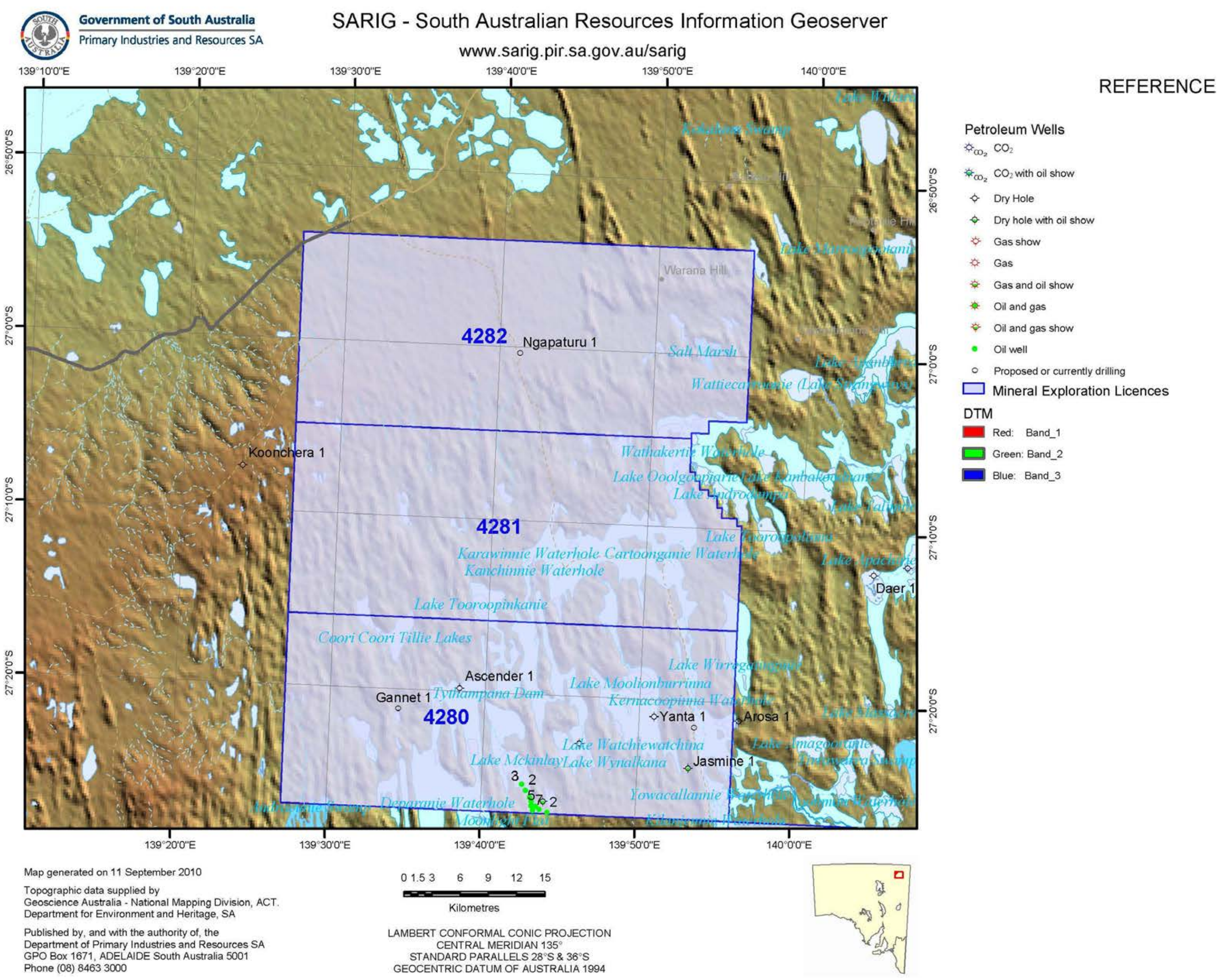
The aeromagnetic data was processed to enhance shallow magnetic geological features for assessment of characteristics that may relate to heavy mineral sand accumulations associated with high concentrations of ilmenite. The thorium concentration data was also enhanced to see if there could be any surface expressions of the mineral monazite which is often found in association with mineral sands.

There is believed to be potential for the concentration of uranium mineralisation where the geological conditions are appropriate for uranium to precipitate from solution. It has been postulated by Hill (2009) that potential exists in the northern part of the Cooper Basin for hydrocarbon migration from underlying oil and gas fields to cause uranium to precipitate from solution. Other possibilities exist where uranium laden waters interact with carbonaceous sediments.

Petroleum well log data has been acquired by SA Mineral Sands, but no analysis has been performed with respect to the gamma ray measurements, electrical resistivity or lithology evaluation.

A field trip was to be conducted prior to June 2010, but flooding of the Cooper Creek from heavy rainfall closed all appropriate roads at the time the trip was scheduled.

Recommendations for further work in the 2010-2011 financial year have been recommended to follow up on the analysis work and new data that has become available.


Government of South Australia
Primary Industries and Resources SA
SARIG - South Australian Resources Information Geoserver
www.sarig.pir.sa.gov.au/sarig
139°10'0"E
139°20'0"E
139°30'0"E
139°40'0"E
139°50'0"E
140°0'0"E
26°50'0"S
27°0'0"S
27°10'0"S
27°20'0"S
4282
Ngapaturu 1
Warana Hill
Salt Marsh
Wattiecarrannie (Lake Stanny...)
4281
Koonchera 1
Wathakertie Waterhole
Lake Oolgoopiarie
Karawinnie Waterhole
Cartoonganie Waterhole
Kanchinnie Waterhole
Lake Tooroopinkanie
Daer 1
4280
Coori Coori Tillie Lakes
Ascender 1
Gannet 1
Tythampana Dam
Lake Moolionburrinna
Kernacoopinna Waterhole
Yanta 1
Arosa 1
Lake Watchiewatchina
Lake Mckinlay
Lake Wynalkana
Jasmine 1
Deparanie Waterhole
Map generated on 11 September 2010
Topographic data supplied by
Geoscience Australia - National Mapping Division, ACT.
Department for Environment and Heritage, SA
Published by, and with the authority of, the
Department of Primary Industries and Resources SA
GPO Box 1671, ADELAIDE South Australia 5001
Phone (08) 8463 3000
0 1.5 3 6 9 12 15
Kilometres
LAMBERT CONFORMAL CONIC PROJECTION
CENTRAL MERIDIAN 135°
STANDARD PARALLELS 28°S & 36°S
GEOCENTRIC DATUM OF AUSTRALIA 1994
REFERENCE
Petroleum Wells
CO_2
CO_2 with oil show
Dry Hole
Dry hole with oil show
Gas show
Gas
Gas and oil show
Oil and gas
Oil and gas show
Oil well
Proposed or currently drilling
Mineral Exploration Licences
DTM
Red: Band_1
Green: Band_2
Blue: Band_3

Data Review and Processing

A significant amount of relevant data is available from the South Australian government (PIRSA) and Geoscience Australia with the geophysical datasets proving additional information that is relevant to the search for mineral sands and uranium.

Each of the data sources is reviewed in the context of their value for either of these commodities. The depth of investigation is limited by practical exploration and exploitation considerations. In the case of mineral sands this is likely to be 50 metres and in the context of uranium less than 200 metres.

Geophysical processing and presentation of grids and images has been performed using Encom PA Professional a product supplied by Pitney Bowes Business Insight.

Aeromagnetic Survey Processing

The aeromagnetic survey grid used for this work was extracted from the PIRSA web site as a composite grid at a resolution of 100 metres. The grid consists of a mix of the Innaminka-Strzlecki high resolution survey flown with a line spacing of 400 metres and the Innaminka-Beetoota regional coverage with a line spacing of 8250 metres. Only the former survey contains useful geological information for this project. A subset of the grid is shown in Figure 2 below with the context of the exploration licences, gas pipelines, oil pipelines and oil fields.

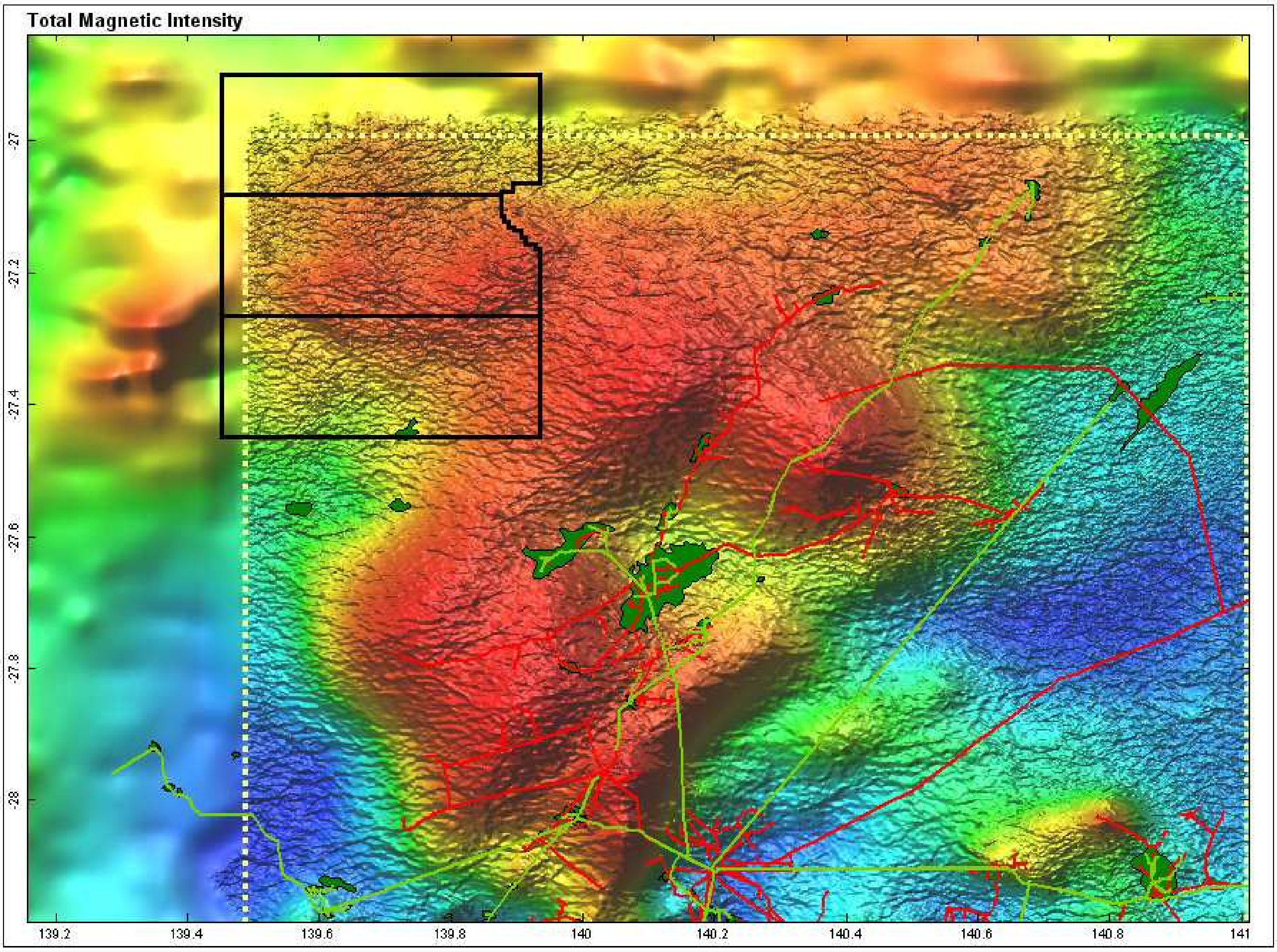


***Figure 2**. Total magnetic intensity image showing the location of the ELs (black), gas pipelines (red), oil pipelines (green) and oil fields (green). The boundary of the Innaminka-Strzlecki 400m line spaced survey is shown as a yellow dashed line.*

It is interesting to note that the distribution and elongation of the oil fields is broadly aligned with large scale magnetic anomalies associated with crystalline basement rocks. Although no analysis has been performed, the depth of the magnetic basement rocks is expected to vary between two and four kilometers. The very small anomalies seen as minor wrinkles on the broader image are associated with the near surface geology and are the focus of this investigation.

The magnetic basement anomalies have amplitudes of the order of 200 to 300 nanotesla (nT), while the magnetic anomalies associated with the shallow geological units range from 1 to 10 nT. We have applied a range of filters to reduce the impact of the broad high amplitude features and highlight the magnetic anomalies associated with the near surface geology.

The first stage uses a reduction to pole (RTP) grid derived from the total magnetic intensity grid. This process applies a transformation to the original grid to simulate what it would look like if it was collected at the south magnetic pole where the magnetic field is vertical. Images produced from the RTP grid are easier to interpret as vertical geological units such as intrusive pipes or steeply dipping magnetic sediments produce symmetric anomalies. The RTP image is shown in Figure 3.

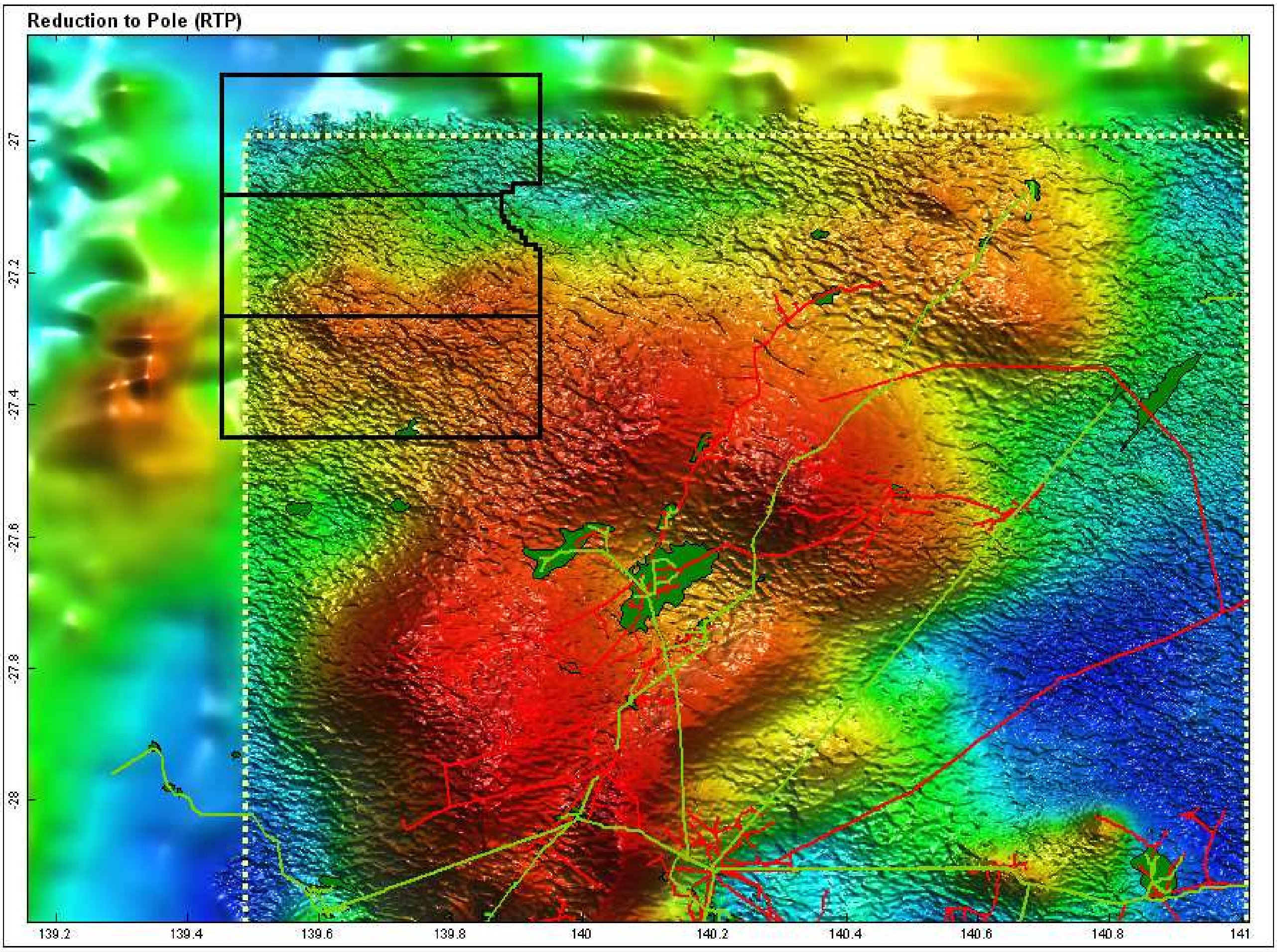


Figure 3. *RTP image showing the location of the ELs (black), gas pipelines (red), oil pipelines (green) and oil fields (green). The boundary of the Innaminka-Strzlecki 400m line spaced survey is shown as a yellow dashed line.*

The most useful products for enhancement of the shallow magnetic geological features turned out to be the first vertical derivative (1VD) and the tilt filter (Shi & Butt, 2004). We also found that a high pass filter versions of these two products helped to reduce the visual impact of the high amplitude basement magnetic anomalies.

Figure 4 shows the results for the first vertical derivative using a grey colour lookup table. This type of presentation makes it much easier to see trends in the data without the bias associated with the coloured image. Northeast trending white features are caused by the deep basement magnetic units.

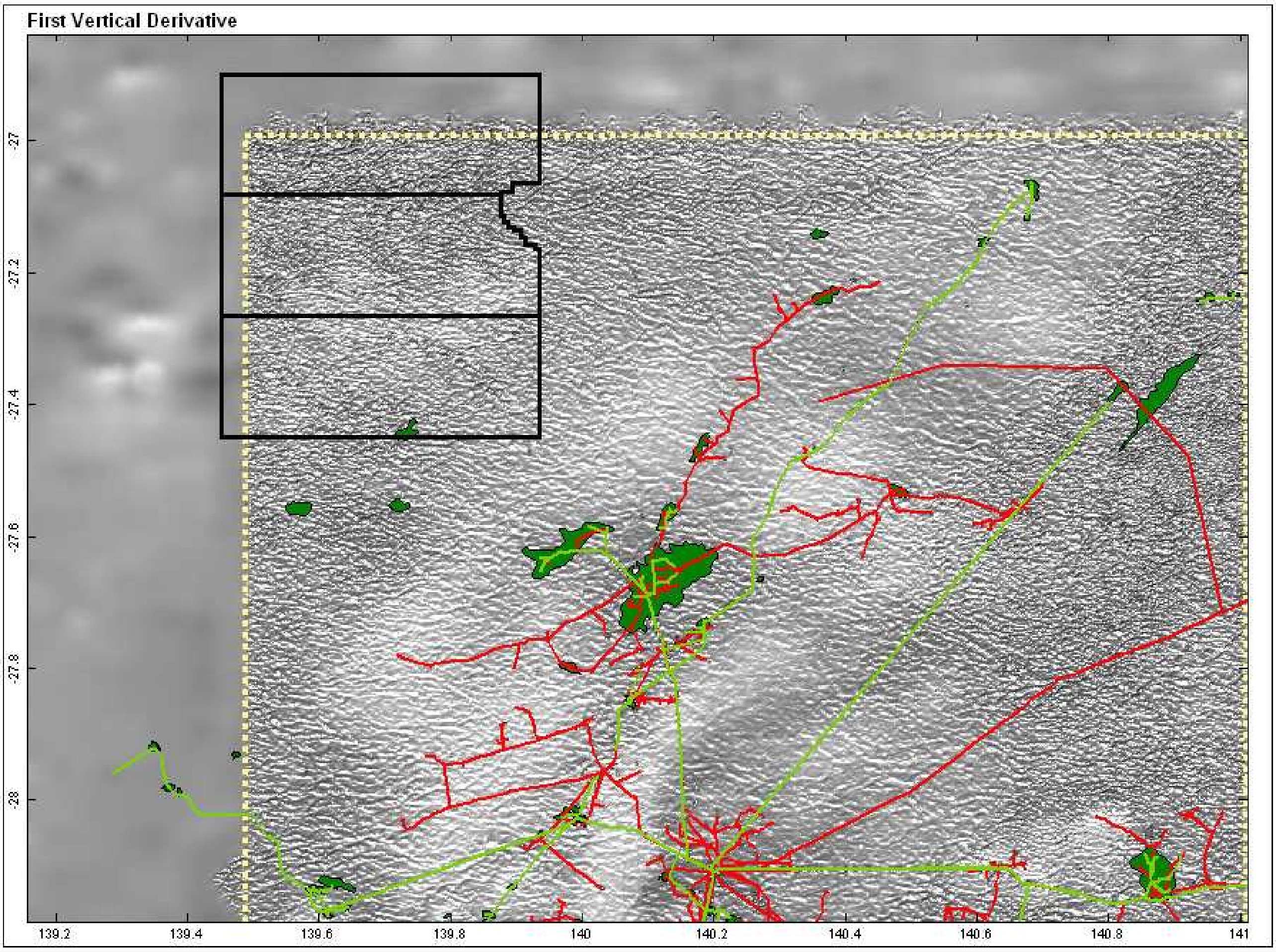


Figure 4. *1VD image showing the location of the ELs (black), gas pipelines (red), oil pipelines (green) and oil fields (green). The boundary of the Innaminka-Strzlecki 400m line spaced survey is shown as a yellow dashed line.*

The first vertical derivative is the vertical rate of change of the total magnetic field and while this is not measured directly it is valid to calculate this value using a mathematical transformation based upon the fast Fourier transform (FFT) (Blakely, 1995).

Figure 5 shows the results of applying a two kilometer high-pass filter to the first vertical derivative to eliminate the majority of basement magnetic contributions. While there are a number of linear features, most appear to be random in orientation and length.

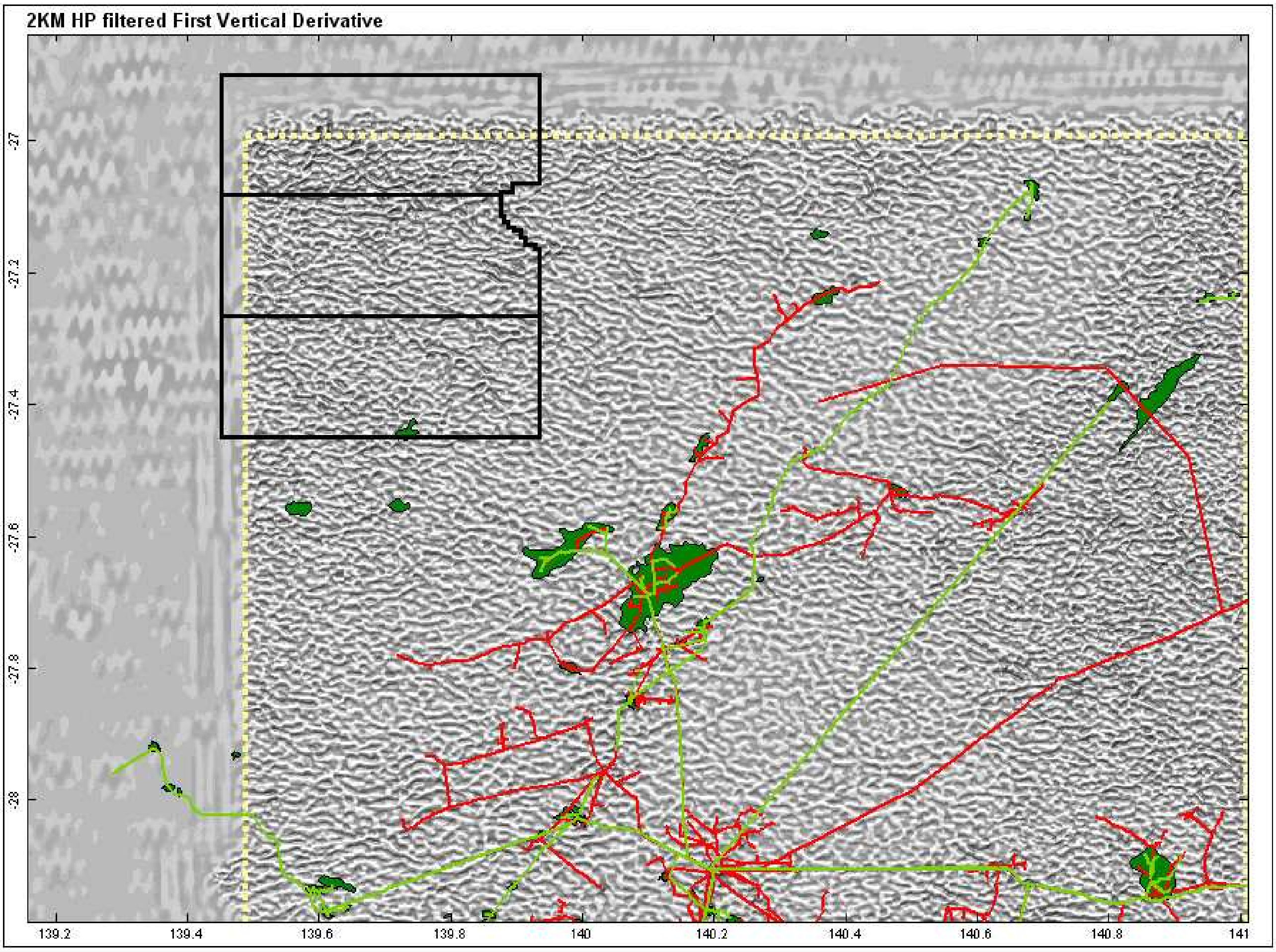


Figure 5. *A 2 KM high-pass filtered 1VD image showing the location of the ELs (black), gas pipelines (red), oil pipelines (green) and oil fields (green). The boundary of the Innaminka-Strzlecki 400m line spaced survey is shown as a yellow dashed line.*

The two kilometre high-pass filter was applied using a FFT technique (Blakely, 1995).

The Tilt filter (Figure 6) calculates the absolute angle of the maximum horizontal gradient at each point in the RTP grid. This limits the dynamic range of the data and is very useful for highlighting the edges of geological features. Further information on the tilt filter can be found in Shi and Butt, 2004.

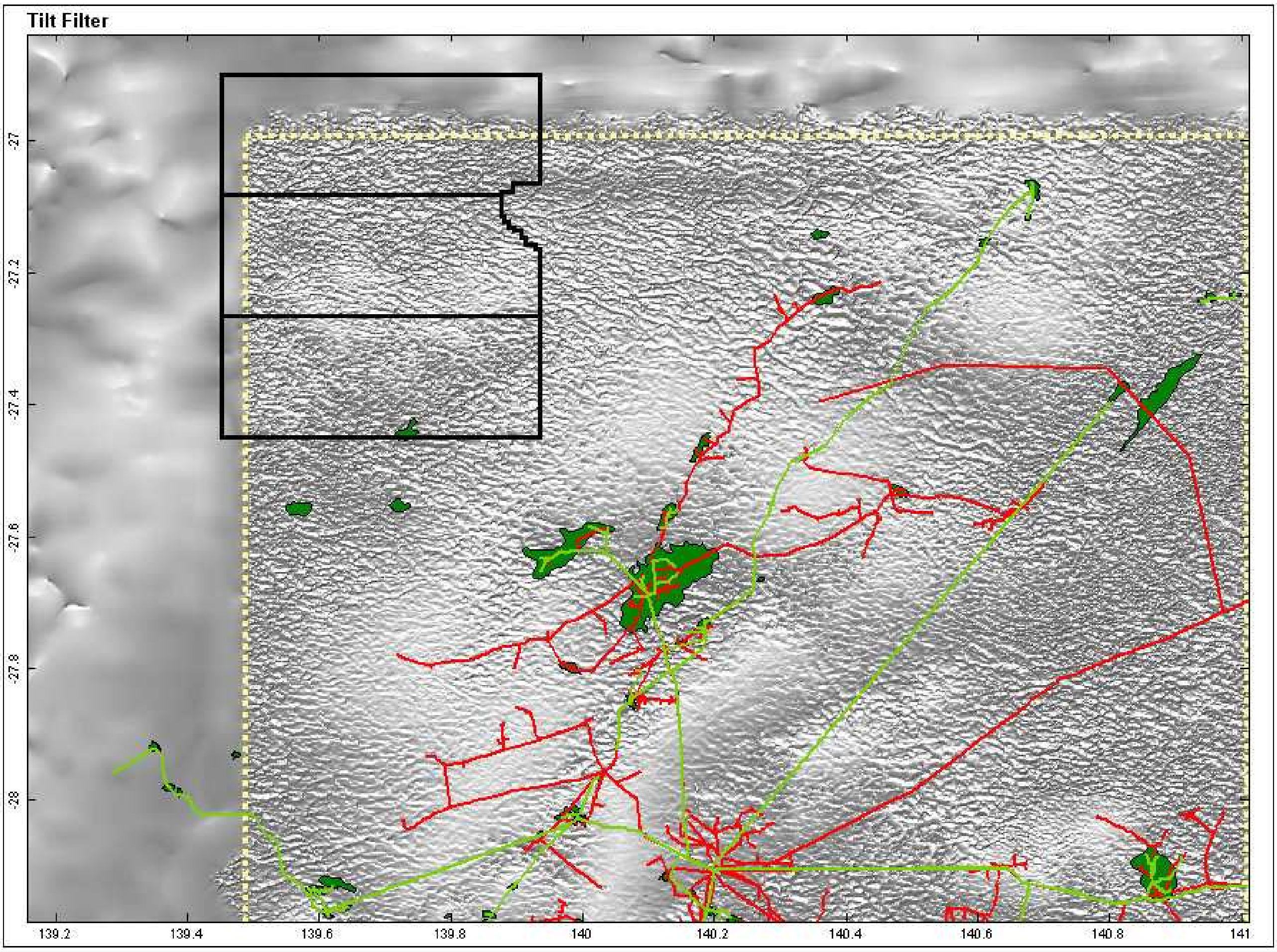


***Figure 6**. A tilt filter image showing the location of the ELs (black), gas pipelines (red), oil pipelines (green) and oil fields (green). The boundary of the Innaminka-Strzlecki 400m line spaced survey is shown as a yellow dashed line.*

The image still has white regions that are dominated by the crystalline basement magnetic anomalies, so a two kilometer high pass filter was applied prior to calculation to enhance the near surface features and this result is shown in Figure 7.

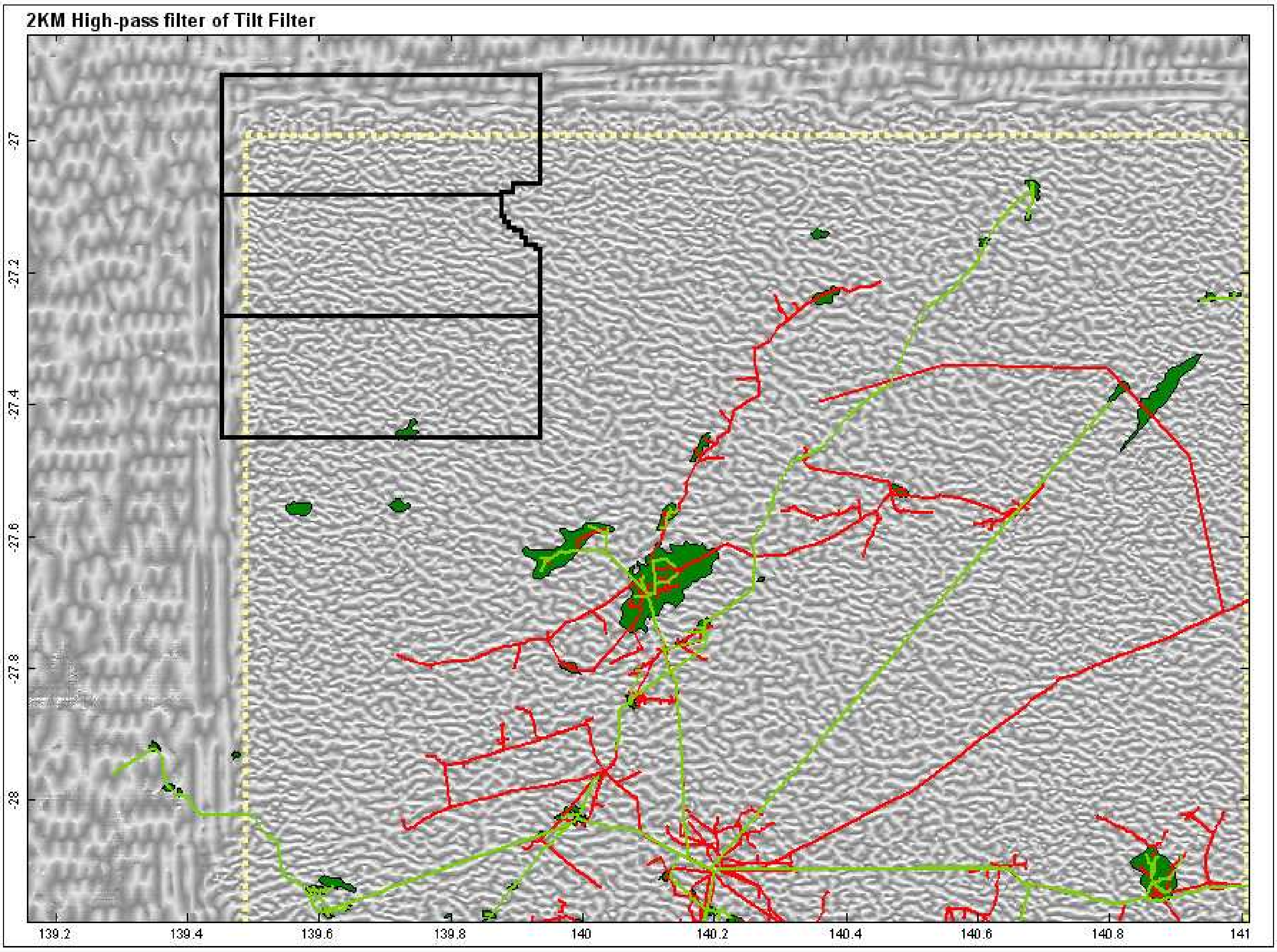


Figure 7 *A tilt filter image showing the location of the ELs (black), gas pipelines (red), oil pipelines (green) and oil fields (green). The boundary of the Innaminka-Strzlecki 400m line spaced survey is shown as a yellow dashed line.*

The high-pass filtered Tilt filter image shows only features associated with the shallow part of the geological section. It is similar to the first vertical derivative image and shows almost a random character apart from a few long linear features.

Detailed Filtering of the RTP Magnetic Grid

Figure 8 presents a comparison of the different filter outputs alongside the total magnetic intensity (TMI) grid. This comparison was used for selection of the best image to highlight near surface magnetic features that could possibly be associated with heavy mineral sand deposits.

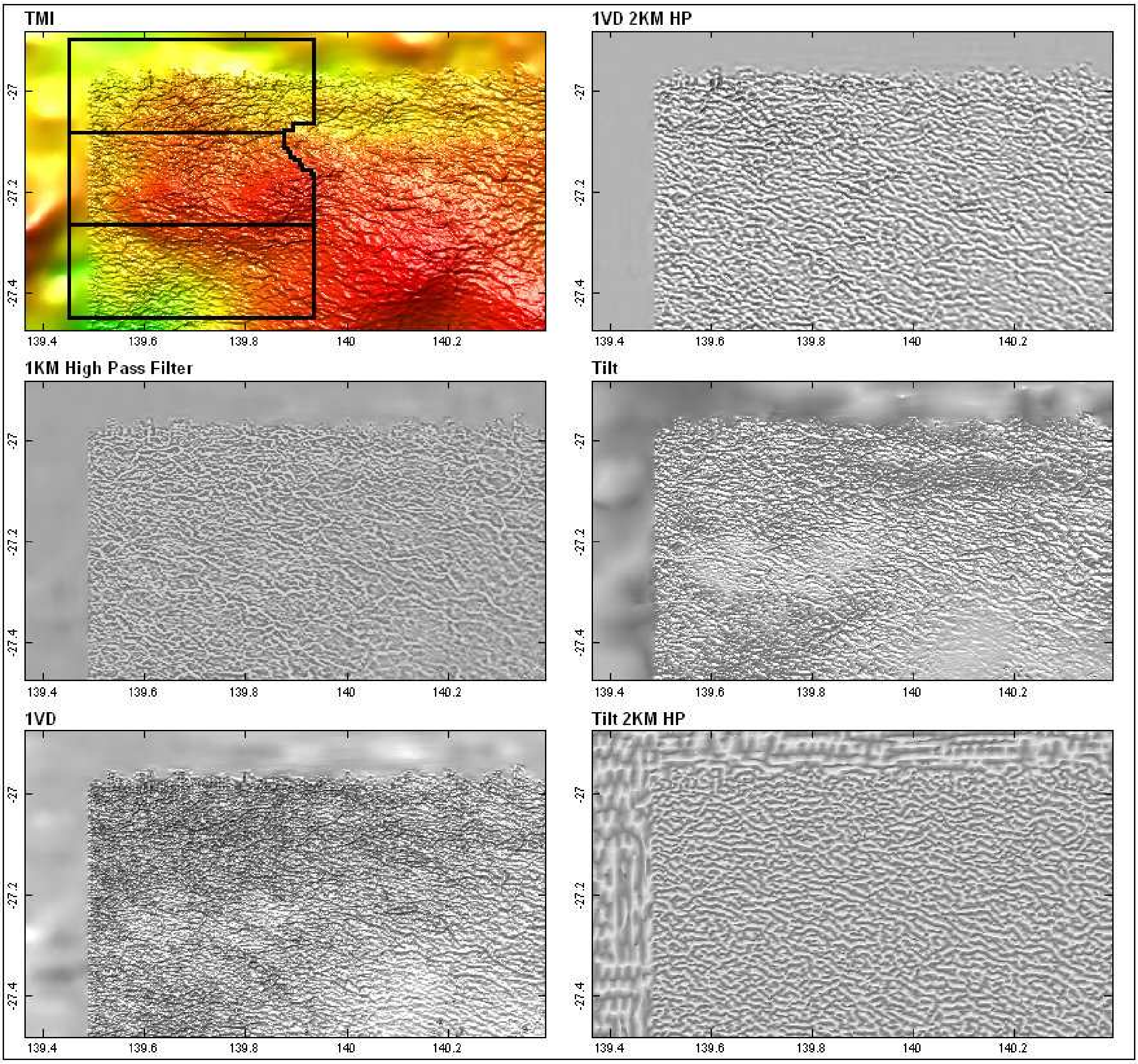


Figure 8 *A comparison of the 1KM high pass filter residual, 1VD and Tilt filter images with the TMI image focused on the area covered by the ELs (black).*

Figure 9 shows the first vertical derivative (1VD) image for the three exploration licences. This image has been selected as the best of the results for enhancing shallow geological features.

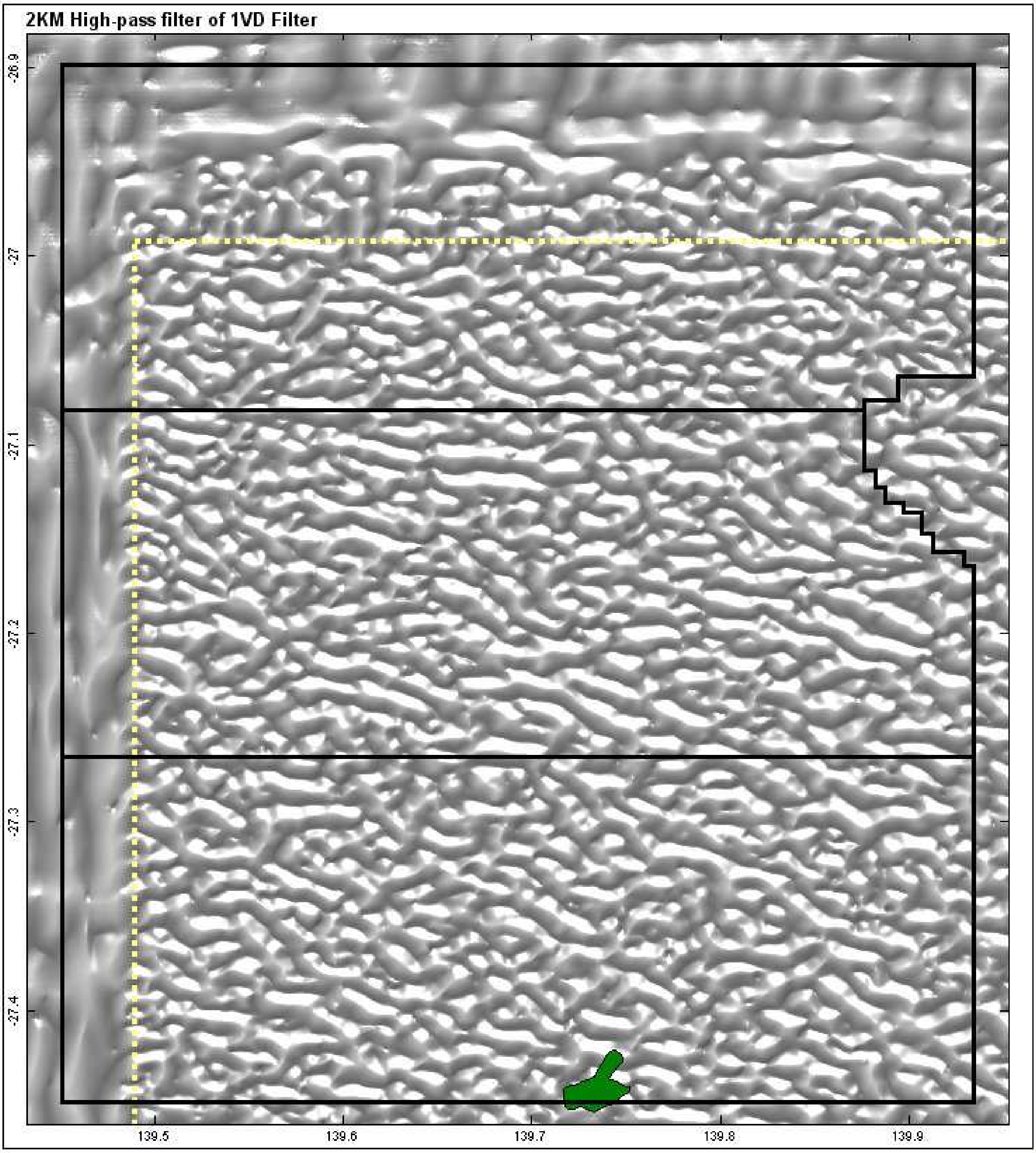


Figure 9A *A high-pass filtered 1VD image showing the location of the ELs (black) and oil fields (green). The boundary of the Innaminka-Strzlecki 400m line spaced survey is shown as a yellow dashed line.*

A 1 km high pass filter was applied to the RTP grid to produce the image shown below in Fig. 9B. This filter output is shown without the illumination and the continuity of some of the features seen in Fig. 9A is improved.

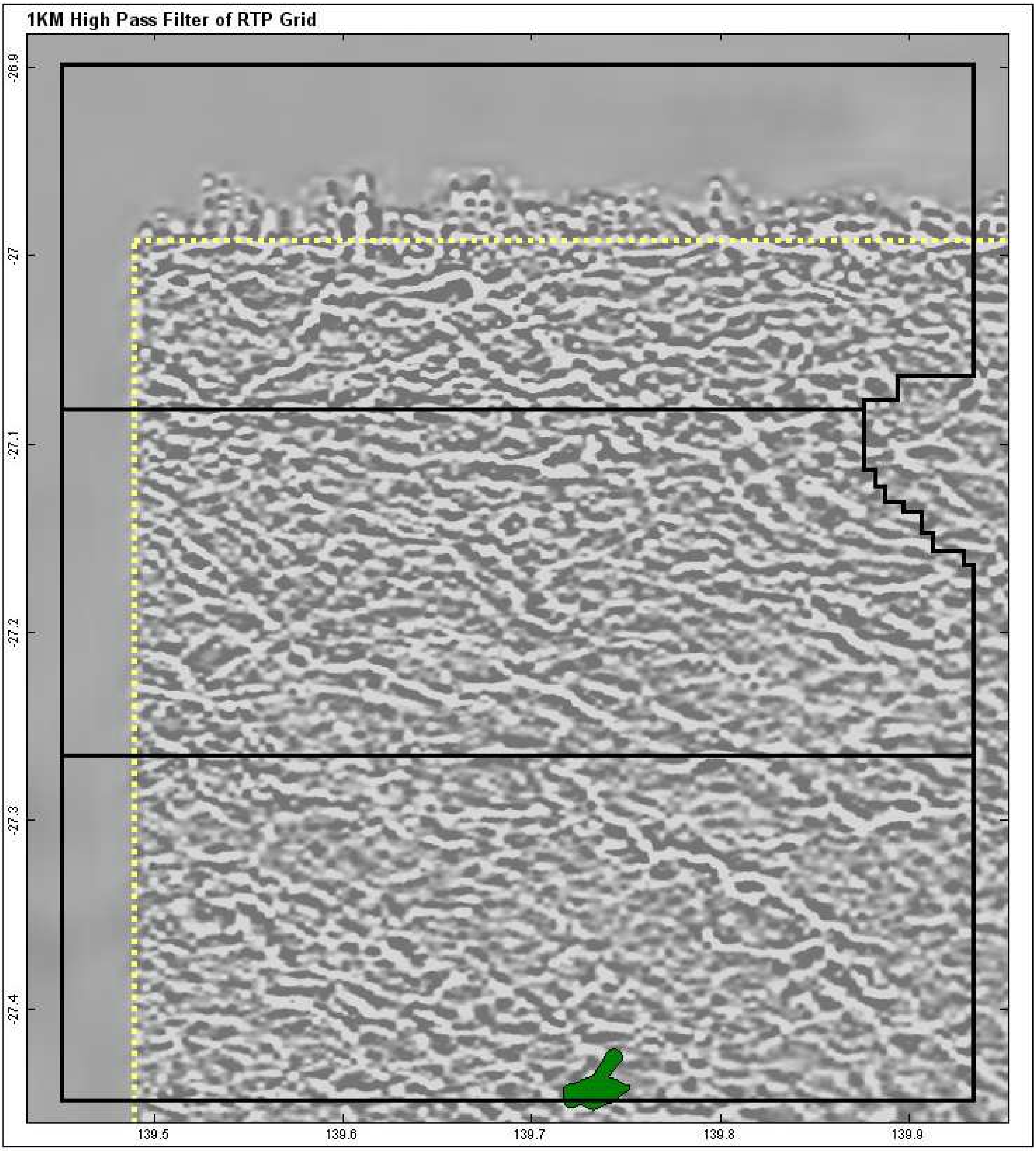


Figure 9B *A 1Km high-pass filtered residual image showing the location of the ELs (black) and oil fields (green). The boundary of the Innaminka-Strzlecki 400m line spaced survey is shown as a yellow dashed line.*

There is very little coherency in the patterns although many features continue for a kilometre or more. Do any of these magnetic anomalies correlate with surface features such as sand dunes, tracks, lakes or cultural effects? We explore the answer to this question in subsequent images. Figure 10 shows a transparent merge of the image in Figure 9 with the Raster 250K topographic image of Australia. The latter is produced by Geoscience Australia and is a useful dataset for the elimination of surface correlations.

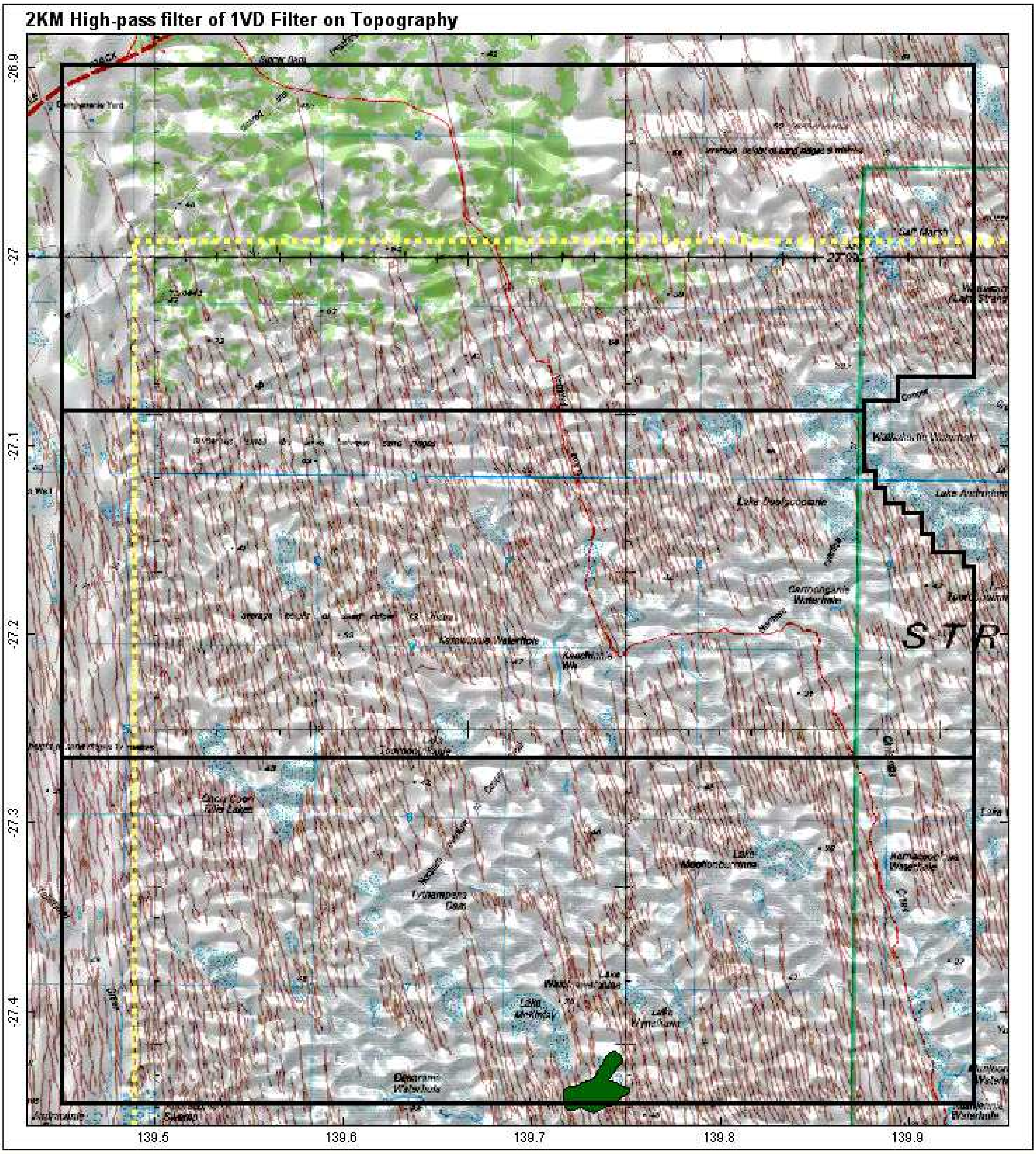


Figure 10 *A high-pass filtered 1VD image transparently overlain on the Raster 1:250K topographic image showing the location of the ELs (black) and oil fields (green). The boundary of the Innaminka-Strzlecki 400m line spaced survey is shown as a yellow dashed line.*

The dominant feature in the topographic map is the north north west trending dune sets. In other parts of Australia these dunes can have magnetic anomalies ranging from 1 to 20 nT, but in this area there is no correlation between the dunes and the shallow-source magnetic trends. Other features such as lakes and tracks show no correlation either.

From this result, we can conclude that the magnetic anomalies are caused by features that are below the terrain surface and possibly relate to the sediments of the Eocene to Paleocene Eyre Formation.

Figure 11 shows the Landsat TM RGB image of bands 7,4 and 2 overlain on the high-pass filtered first vertical derivative image of the magnetic data. The geological boundaries are also shown in the image.

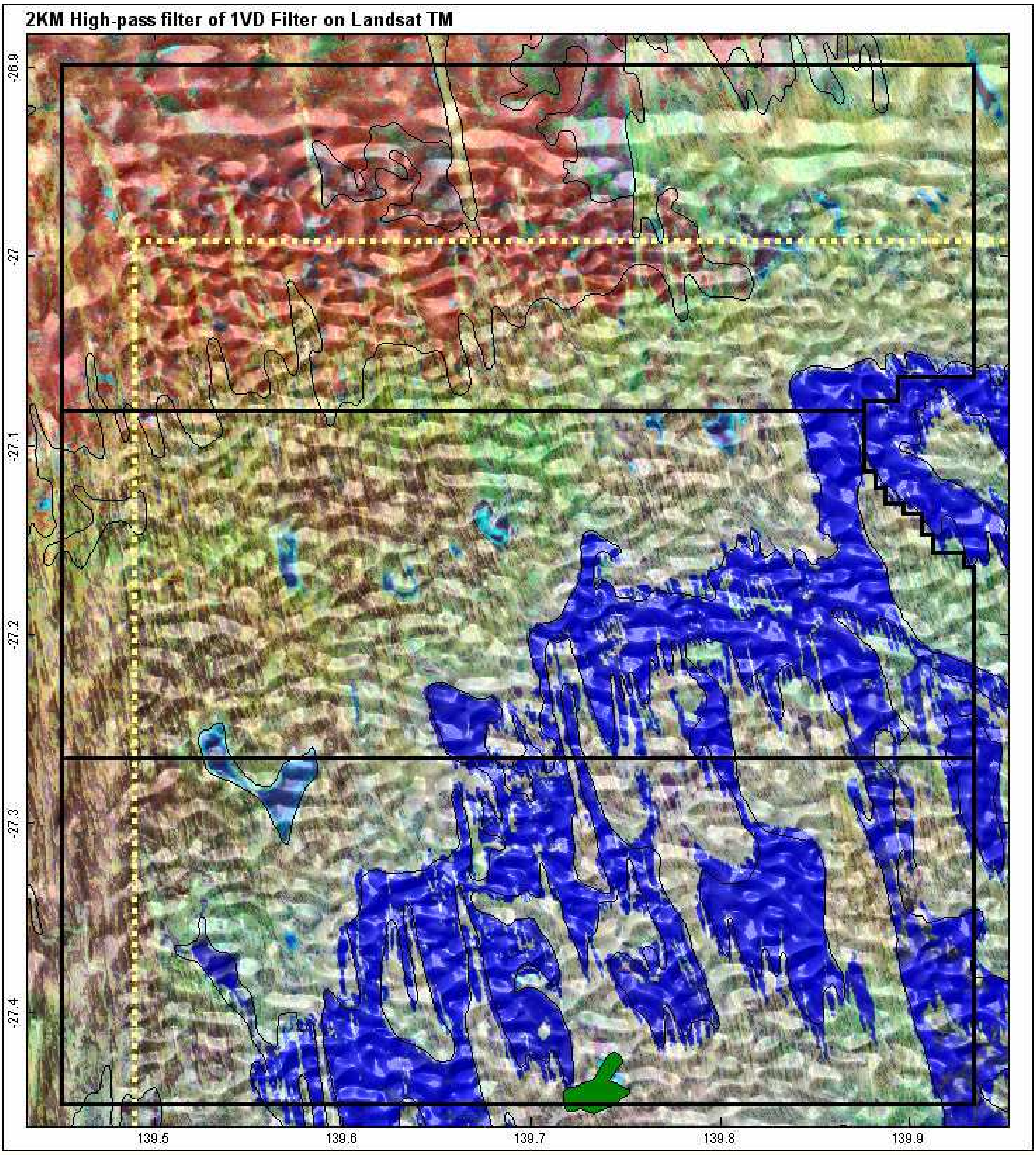


Figure 11 *A high-pass filtered 1VD image transparently overlain on the Landsat TM Bands 7,4,2 image showing the location of the ELs (black) and oil fields (green). The boundary of the Innaminka-Strzlecki 400m line spaced survey is shown as a yellow dashed line.*

In this image you can see that the magnetic anomalies show no correlation with the Landsat image and cross over the sub-crop of the Eyre Formation shown in the north west corner of the map. Our conclusion is that the magnetic anomalies are most likely caused by oxidation of the upper surface of the Eyre Formation which now forms an unconformity with the overlying transported sediments. It is probable that this surface was exposed to weathering for long geological periods. As a result of this conclusion, it is highly unlikely that the magnetic anomalies are caused by mineral sand accumulations in the transported sediments.

Gamma Ray Spectrometer Data

Grids of the 100m resolution radiometric dataset of Australia are available from Geoscience Australia at http://www.ga.gov.au/minerals/research/national/radiometric/ and form the basis for analysis undertaken on the SA Beach Sands exploration licences. Images of the Total count, equivalent potassium concentration, equivalent thorium concentration and equivalent uranium concentration are reviewed in the context of mineral sands and uranium exploration potential.

Equivalent Potassium Concentration

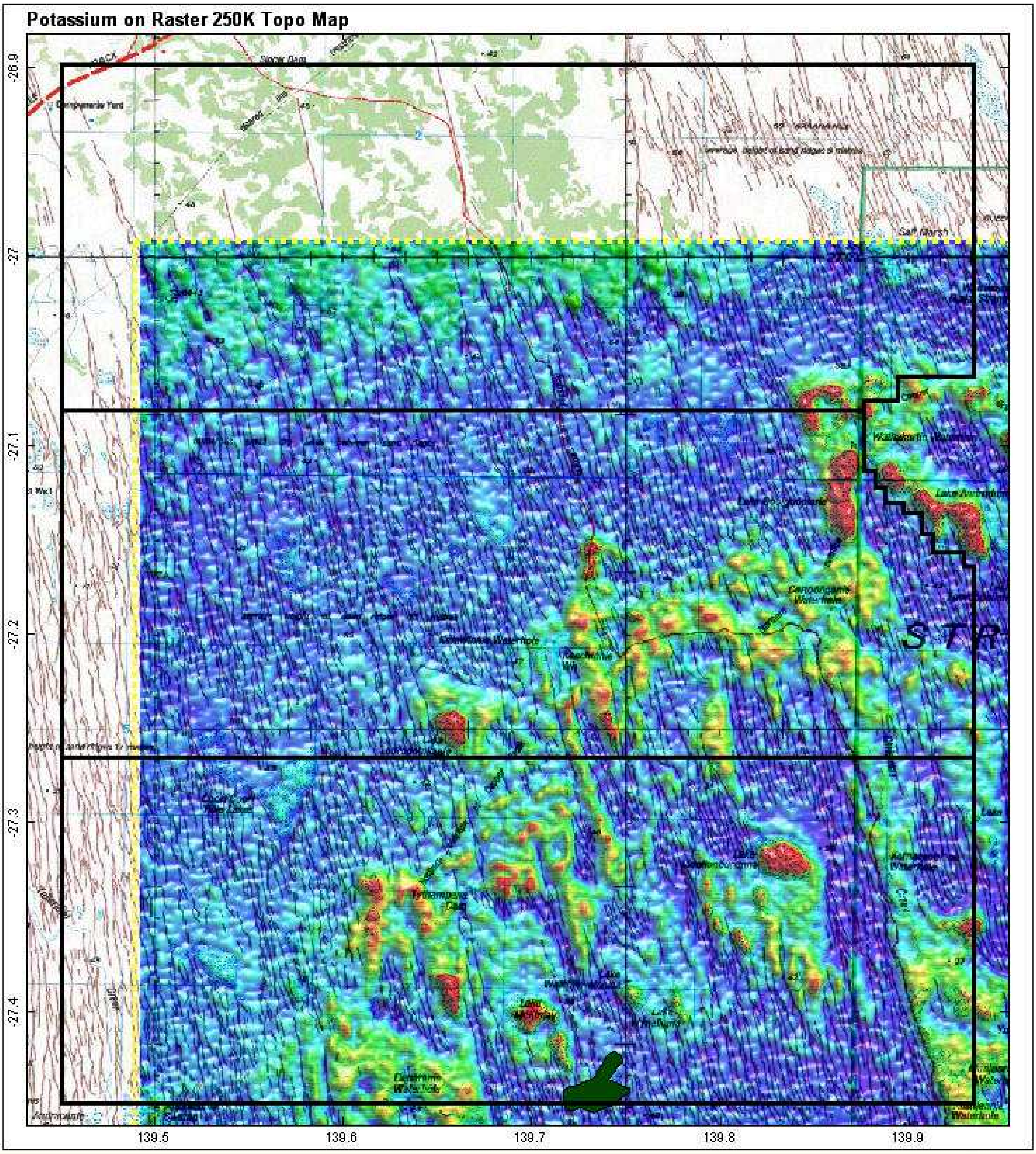


Figure 12 A potassium concentration image transparently overlain on the Raster 250K image showing the location of

the ELs (black) and oil fields (green). The boundary of the Innaminka-Strzlecki 400m line spaced survey is shown as a yellow dashed line.

There are high concentrations of potassium along the dry salt pans, Cooper Creek and outcrops of the Eyre Formation in the north east corner of the survey image. The material that fills the water courses has been transported by the Cooper Creek and presumably concentrated during dry spells.

Equivalent Uranium Concentration

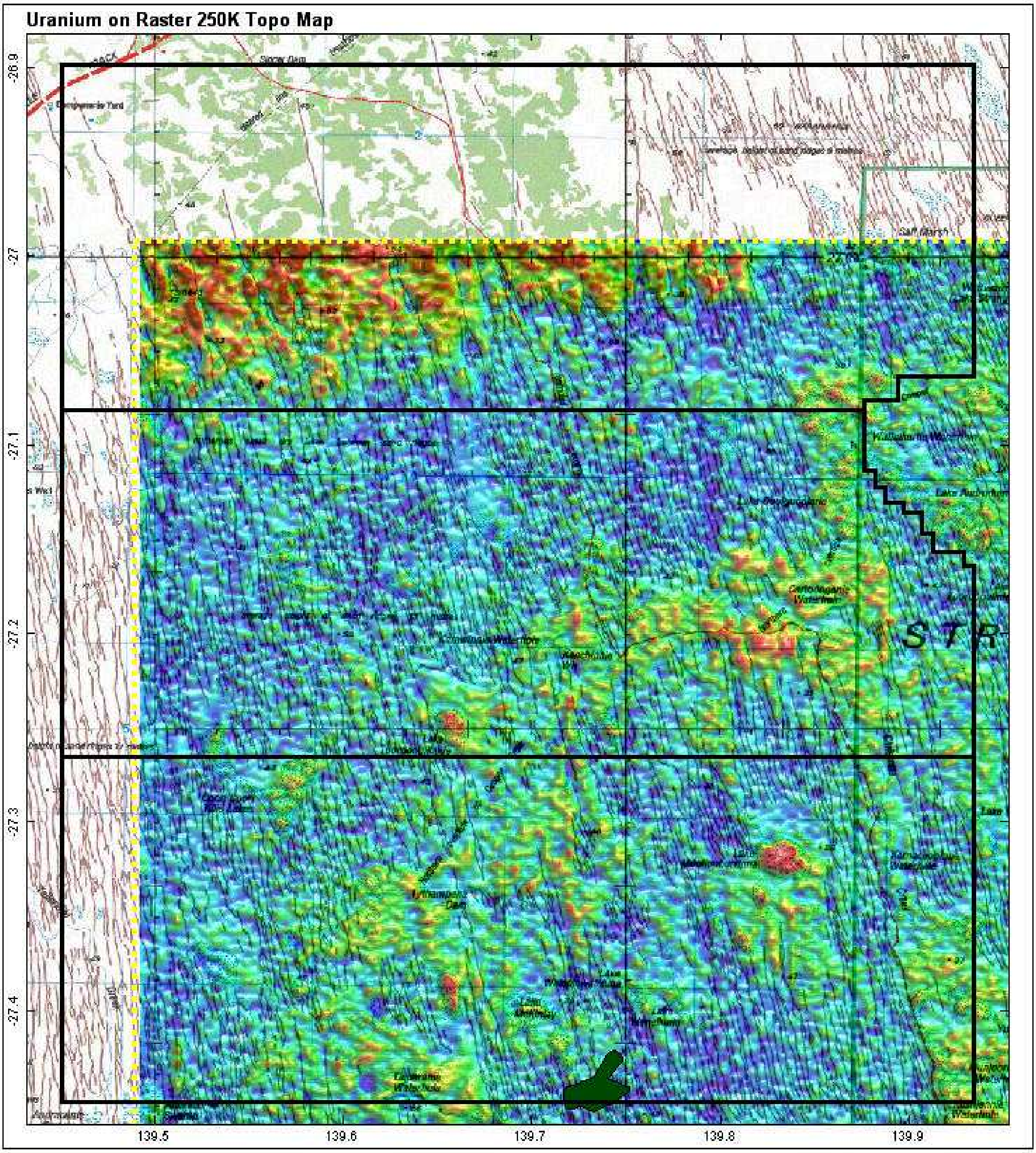


Figure 13 *An equivalent uranium concentration image transparently overlain on the Raster 250K image showing the location of the ELs (black) and oil fields (green). The boundary of the Innaminka-Strzlecki 400m line spaced survey is shown as a yellow dashed line.*

The equivalent uranium concentration is noisy due to low concentrations, but it is similar in most respects to the potassium concentration image.

Equivalent Thorium Concentration

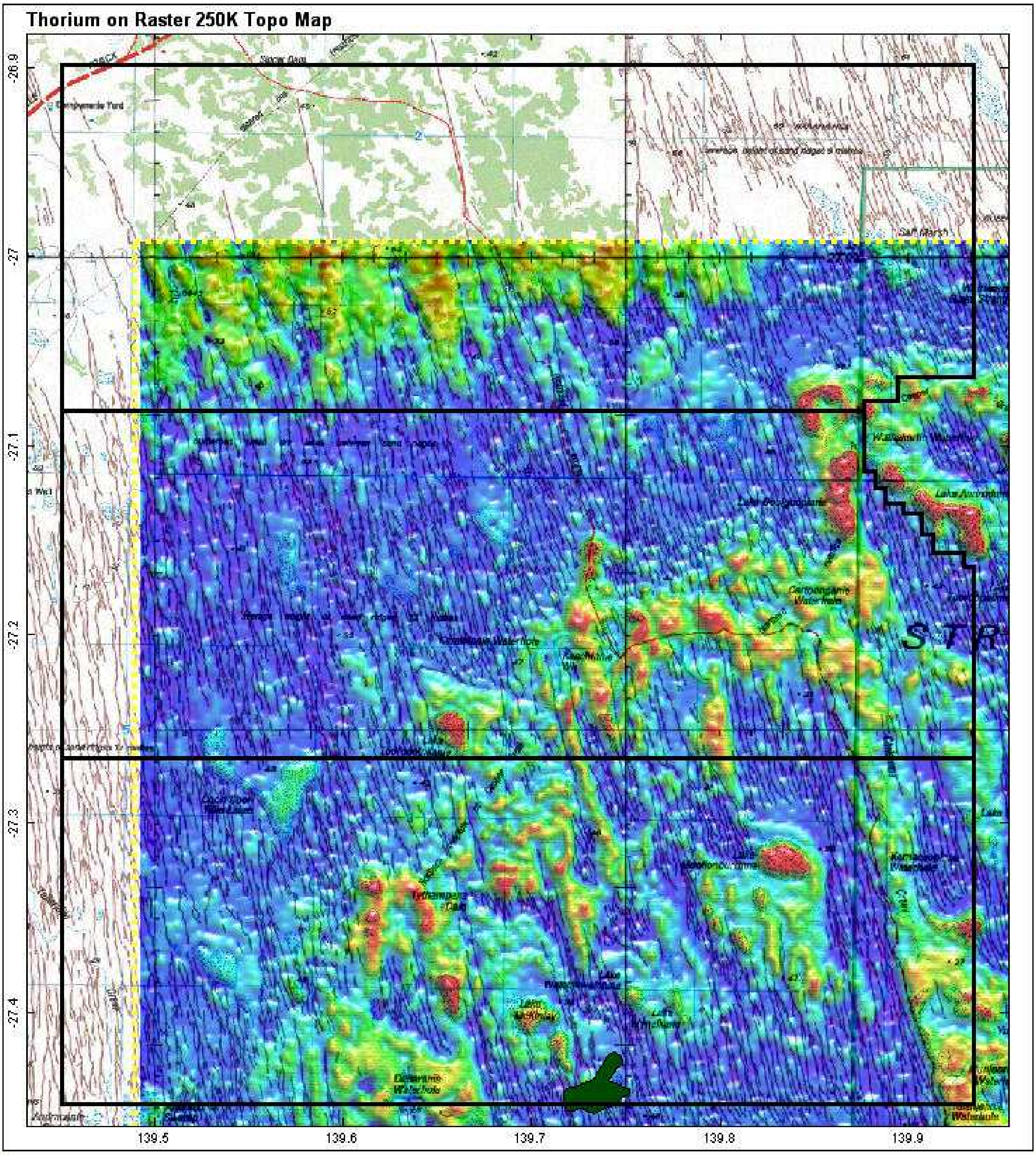


Figure 14 An equivalent thorium concentration image transparently overlain on the Raster 250K image showing the location of the ELs (black) and oil fields (green). The boundary of the Innaminka-Strzlecki 400m line spaced survey is shown as a yellow dashed line.

There are high concentrations of thorium along the dry salt pans, the course of the Cooper Creek and on outcrops of the Eyre Formation in the north west corner of the survey image.

The equivalent thorium and potassium concentration images are very similar in the apparent distribution of radioelements so we prepared a ratio of the two as shown below in Figure 15. The equivalent thorium concentration is elevated over most of the image apart from the flood plain and channels of the Cooper Creek. The deep blue areas represent regions where the concentration of potassium is much greater than that of thorium.

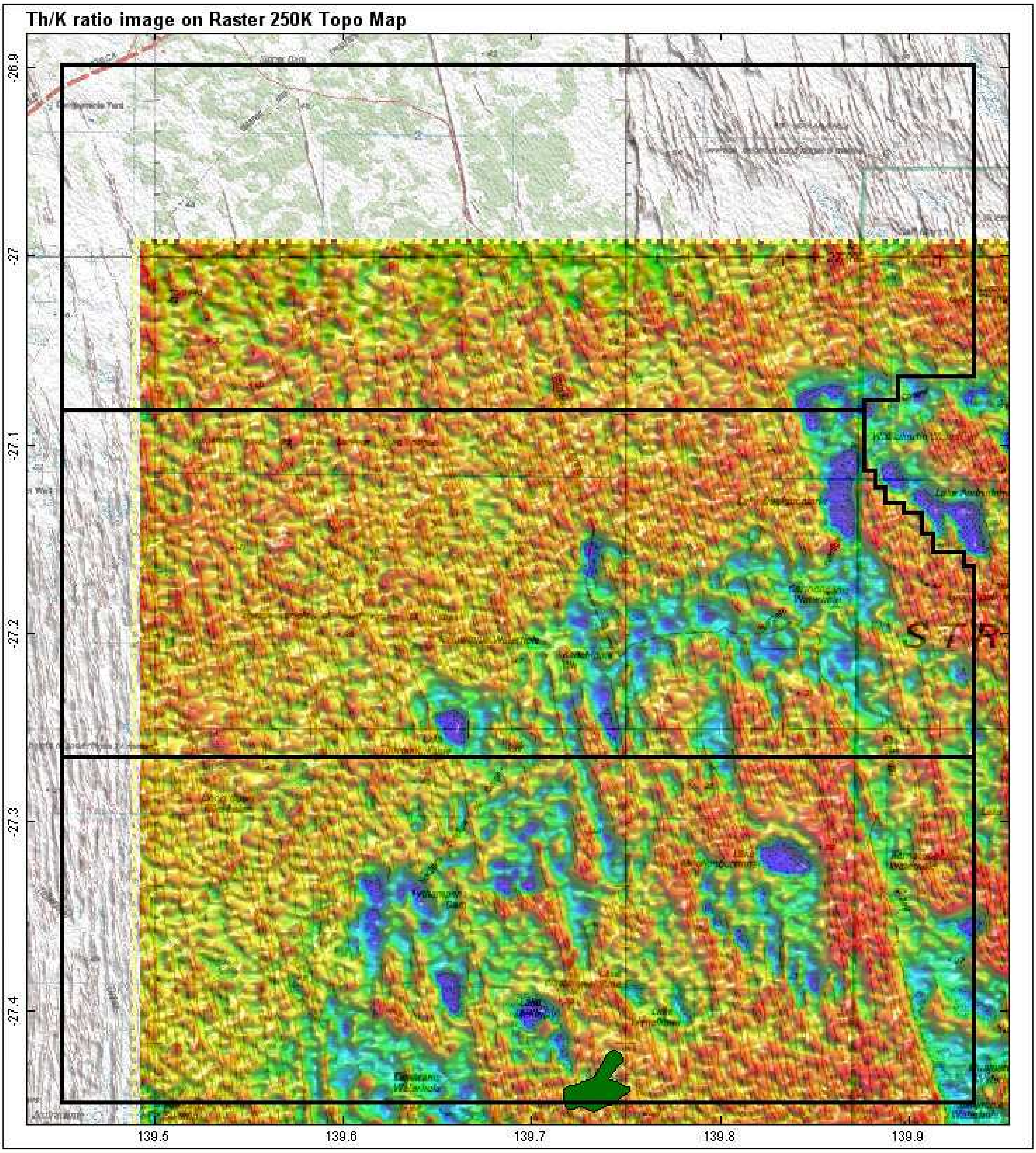


Figure 15 *A Thorium/potassium ratio image transparently overlain on the Raster 250K image showing the location of the ELs (black) and oil fields (green). The boundary of the Innaminka-Strzlecki 400m line spaced survey is shown as a yellow dashed line.*

Ternary Spectrometer Image

The three radioelement concentrations are presented as an RGB image in Figure 16 below. In this image it is possible to study the relative variation of each of the radioelements. High concentrations of thorium would show up as a local blue anomaly while a relative uranium increase would show up as a more intense green colour. There are no obvious areas of increased blue in the image relative to the general background that might relate to an exposure of monazite associated with a high concentration of heavy mineral sands. The background of the image is generally green, but this is associated with a low general background for equivalent uranium concentration.

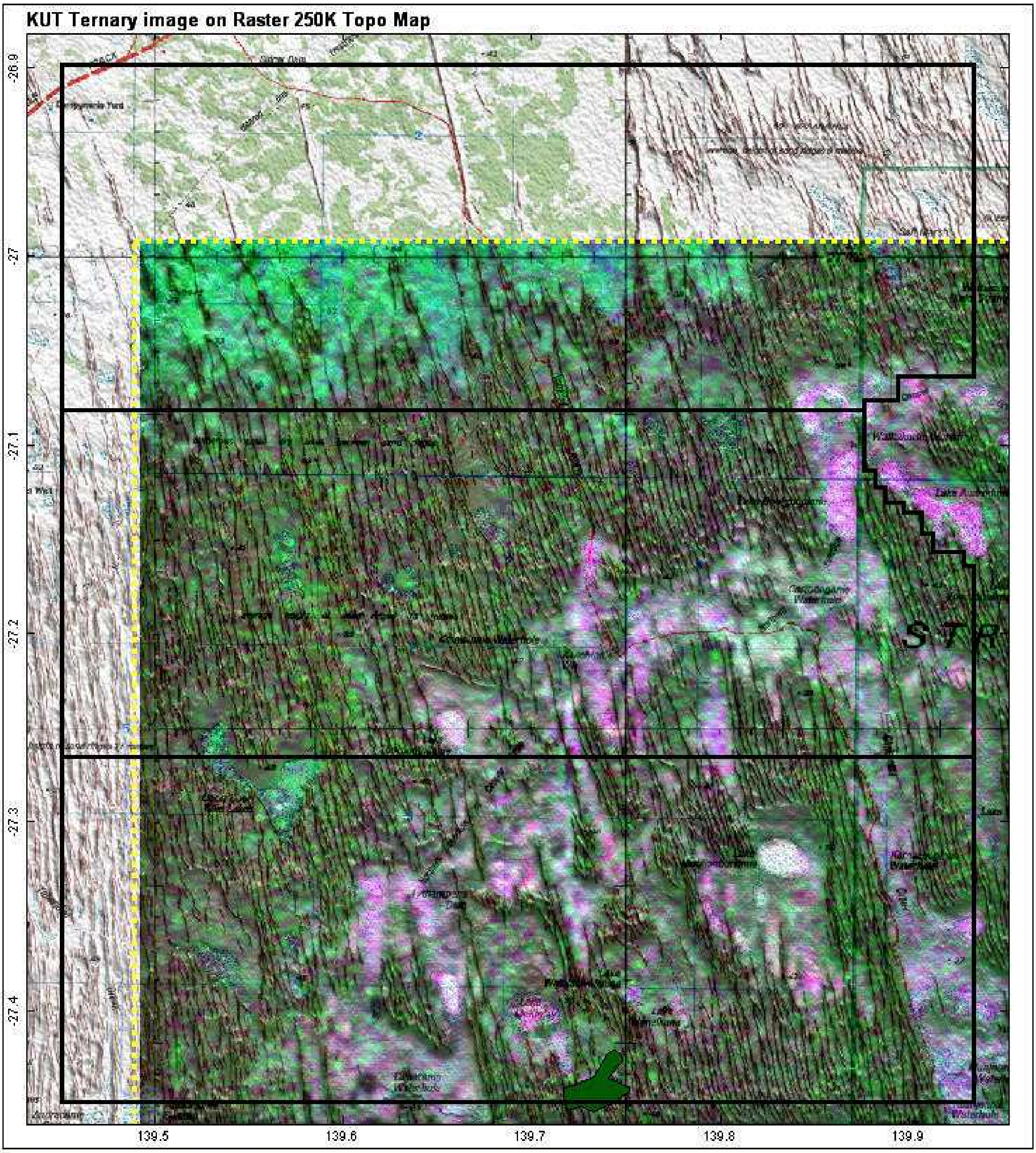


Figure 16 A Ternary RGB image with potassium (red), uranium (green) and thorium (blue) transparently overlain on the Raster 250K image showing the location of the ELs (black) and oil fields (green). The boundary of the Innaminka-Strzlecki 400m line spaced survey is shown as a yellow dashed line.

Digital Terrain Grid Derived from SRTM Data

A 90 metre resolution digital terrain dataset was derived from the Shuttle Radar Topography Mission (SRTM) public domain dataset as the airborne survey terrain data only covered the 400m line aeromagnetic survey area. An image of the terrain is shown below in Figure 17. The high topographic zone in the north west corner is associated with weathered outcrop of the Eocene to Paleocene Eyre Formation. The remainder of the image is dominated by north north west trending sand dunes and the Cooper Creek flood plain.

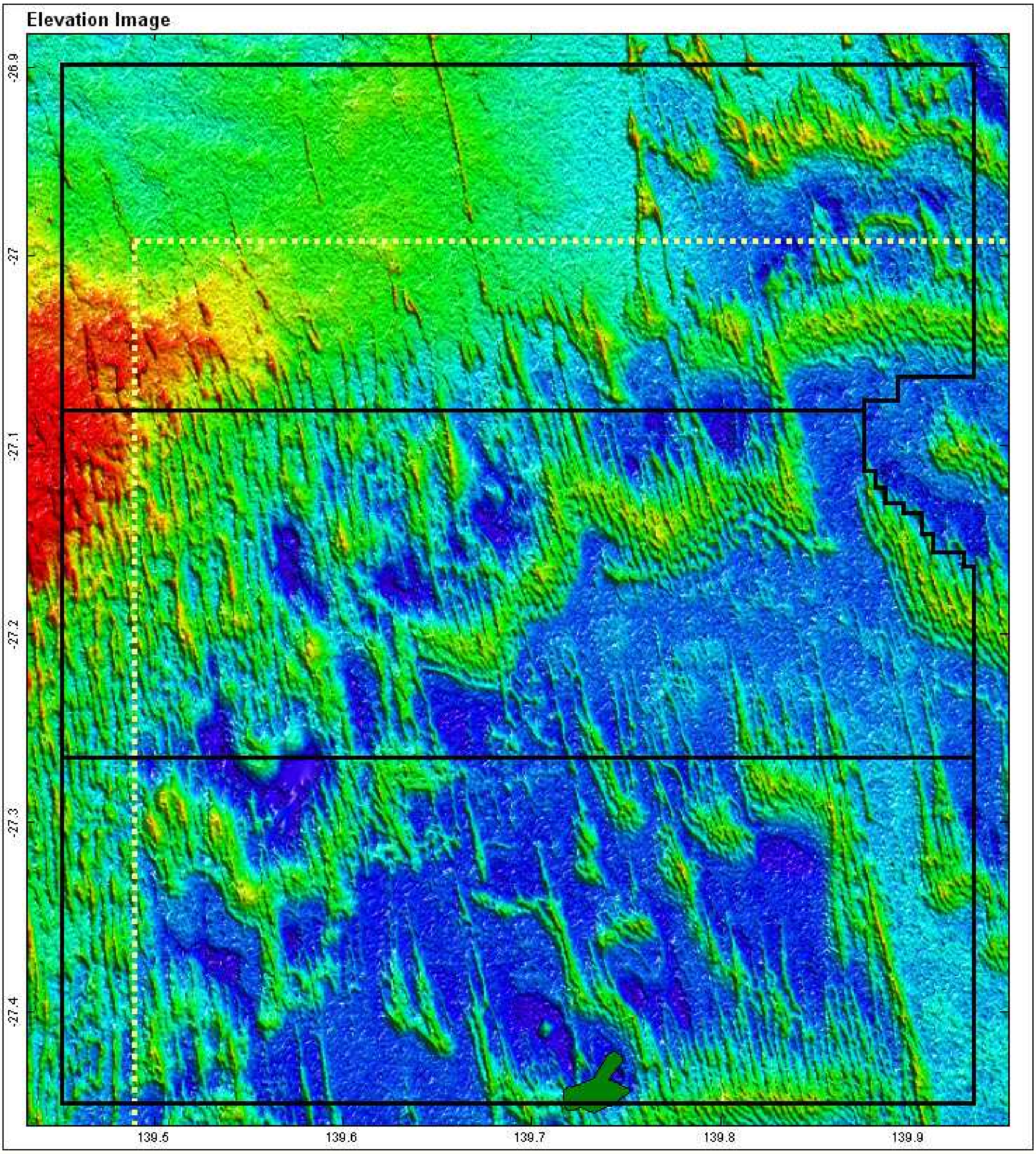


Figure 17 An image of the terrain derived from SRTM data showing the location of the ELs (black) and oil fields (green). The boundary of the Innaminka-Strzlecki 400m line spaced survey is shown as a yellow dashed line.

Landsat TM & Raster 250K Images

Landsat Thematic Mapper TM imagery (Fig. 18) provides considerable detail on the location of soils, outcrops, dunes and water courses. It has helped with the understanding of the radioelement images and enhanced magnetic images.

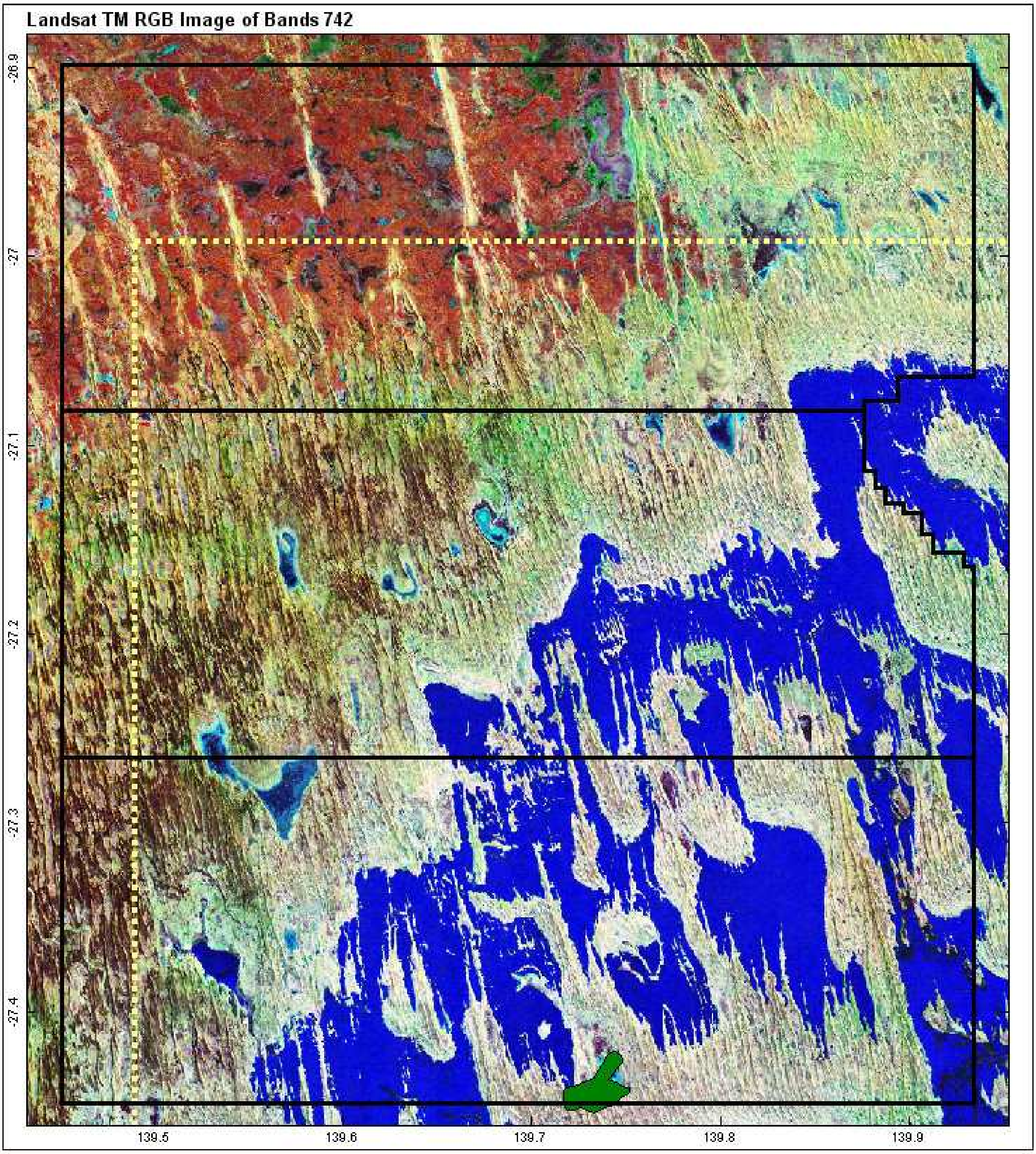


Figure 18 *A Landsat TM RGB image of bands 7, 4 and 2 showing the location of the ELs (black) and oil fields (green). The boundary of the Innaminka-Strzlecki 400m line spaced survey is shown as a yellow dashed line.*

A blend of the Landsat TM image with the Raster 250K image (Fig. 19) also provides useful input for the identification of man made features such as roads and pipelines.

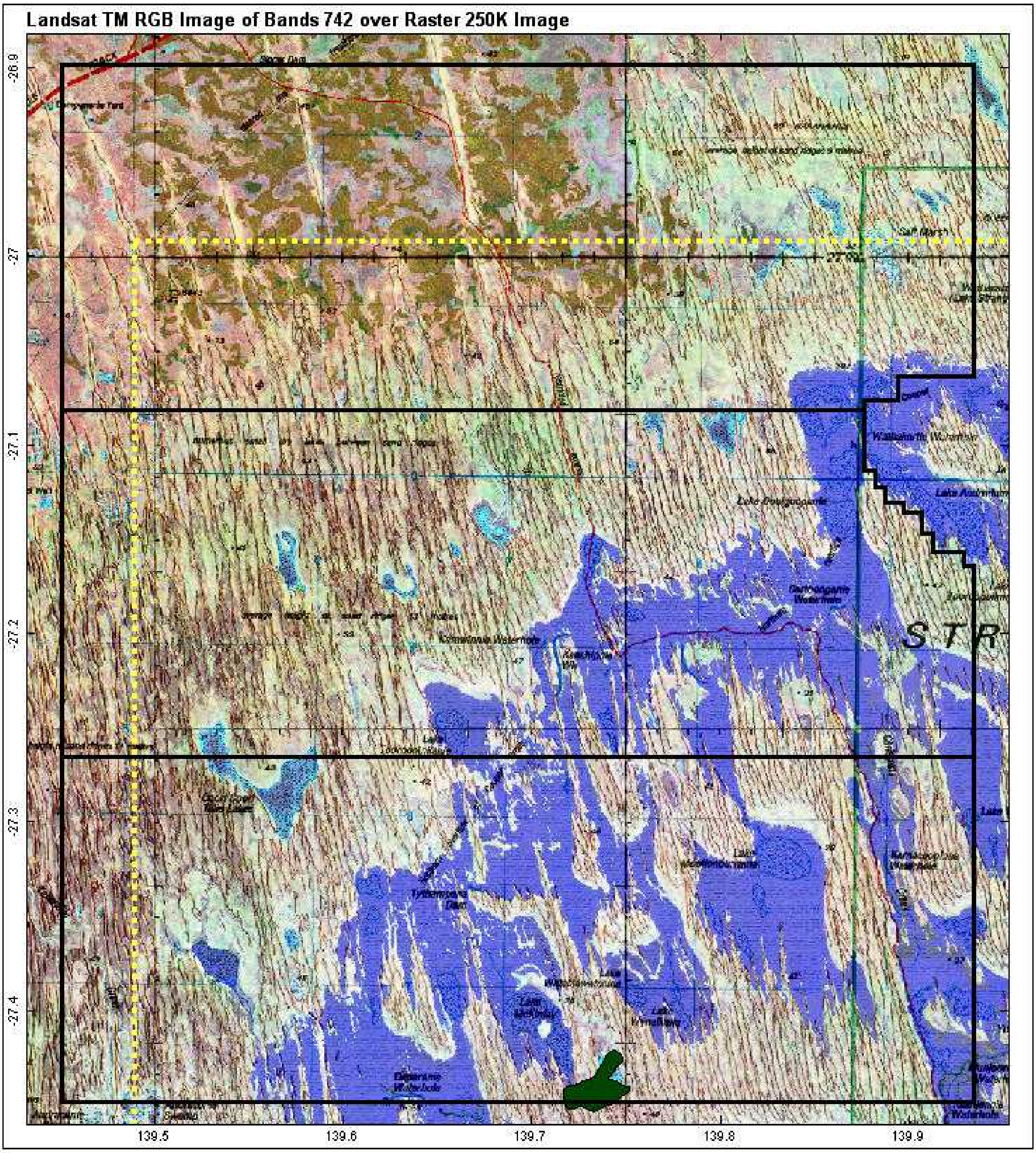


Figure 19 *An image of the Raster 250K topography blended with the Landsat TM RGB image of bands 7, 4 and 2 showing the location of the ELs (black) and oil fields (green). The boundary of the Innaminka-Strzlecki 400m line spaced survey is shown as a yellow dashed line.*

Drilling Data

Extensive drilling for oil and gas has taken place in the Cooper Basin and geophysical logs were recorded at the time of drilling. These logs represent a valuable resource for analysis of the shallow part of the geological section.

The following petroleum wells have been drilled in the exploration licence area or immediate surrounds.

Pandieburra 1
Ngapaturu 1 *
Koonchera 1
Gannet 1 *
Ascender 1 *
Liberator 1 to 7 *
Titan 1 *
Yanta 1 *
Michelle 1 *
Arosa 1
Jasmine 1 *
Daer 1
Coongie 1
Tigershack 1, 2
Winaway 1
Growle 1 to 7
Warhawk 1
Tigercat 1
Stormbird 1
Snatcher 1
Charo 1
Callabonna 1
Typhoon 1
Tempest 1
Darter 1
Yama 1
Mingana 1
Brolga 1

An evaluation of the lithology interpretation, gamma ray and electric logs will be undertaken in 2010-2011 financial year to see if there are elevated zones of gamma ray response in units believed to be favourable to the creation of uranium enriched roll fronts.

Frome Airborne EM Survey

A large airborne EM survey covering 95,000 square kilometers is being funded by PIRSA and Geoscience Australia to enhance uranium and mineral exploration within the survey area (Fig 20). The survey will acquire 32,000 line kilometers of data with lines spaced 2.5 km to 5 km apart. Some of the key objectives for this survey include the mapping of the Eyre Formation and various paleochannel hosted uranium deposits.

This survey will cover geological environments that are similar to that covered by the exploration licences. Since the airborne EM geophysical technique is potentially suitable as a tool for pre-drilling exploration, the results from the Frome survey should be evaluated prior to commissioning of a survey focused on the exploration licences.

(AEM data - see Government of South Australia Mineral Resources Website)

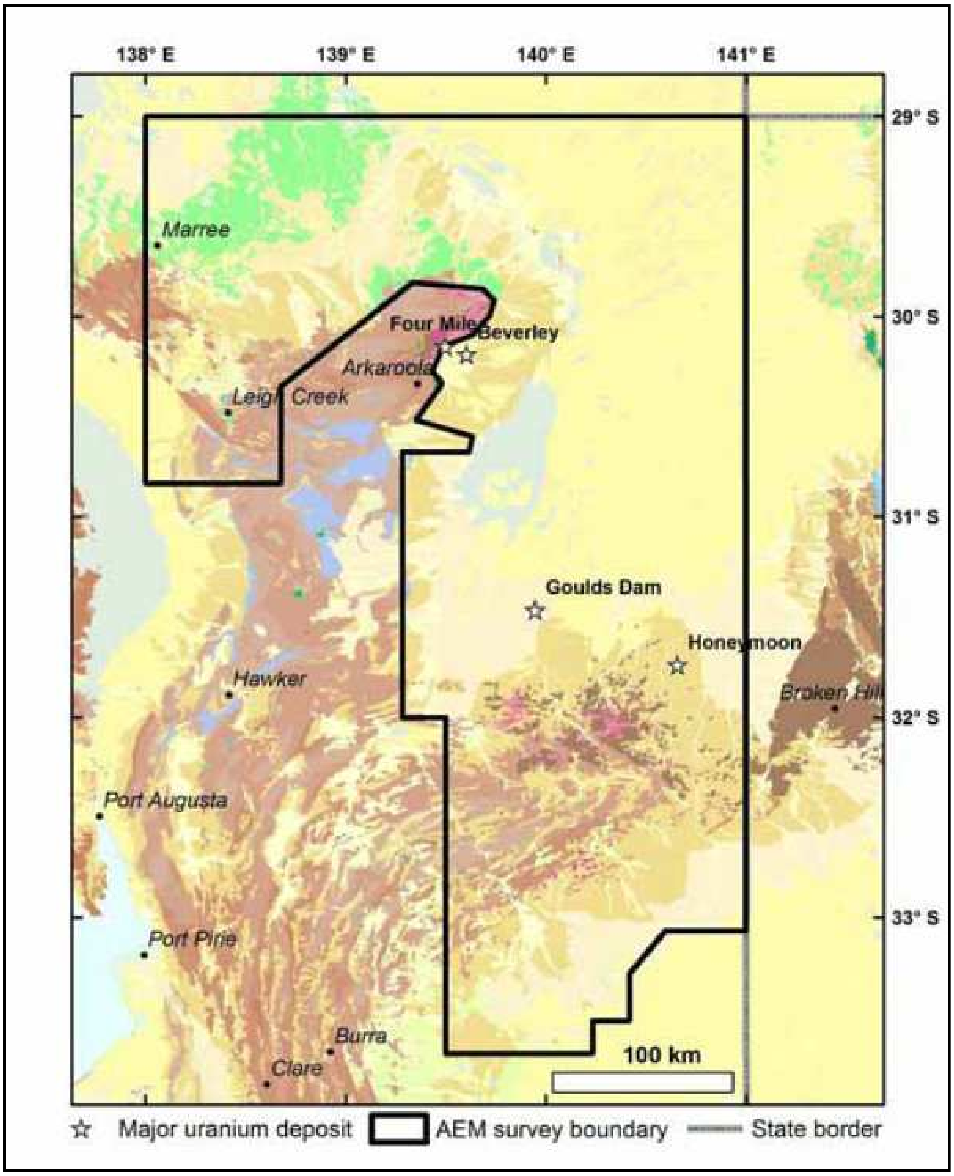


Figure 20 *Locality map for the Frome airborne EM survey courtesy of PIRSA (Neumann, 2010).*

Field Trips

A field trip to visit the exploration licences and follow up on our initial findings was scheduled for May 2010 but had to be cancelled due to flooding of the Cooper Creek and closure of the major and minor access roads. Further rain has continued the closure of many roads in the area.

The client has issued instruction to proceed with the field trip as soon as the ground is accessible. We believe the optimum time for the trip will be late March to early April when the weather is cooler and access roads have reopened.

Summary and Recommendations

We have concluded from our evaluation of the magnetic and radiometric data that these methods have not detected the presence of significant quantities of heavy mineral sands.

Low amplitude linear magnetic anomalies, initially thought to be associated with mineral sands appear to be related to weathering affects at the unconformity surface of the Eyre Formation.

Inspection of the radiometric data does not reveal any substantial thorium anomalies that might be expected to be associated with monazite, a mineral commonly associated with heavy mineral sand accumulations. While this outcome does not exclude the existence of minerals such as ilmenite and monazite, the probability of locating significant, economic quantities is reduced.

Despite this negative outcome, heavy mineral sands could exist in the area so a field inspection should check for concentration of heavy minerals along the main Cooper Creek channel.

The uranium exploration roll front model is illustrated in Figure 21 below and taken from the Crescent Gold presentation by Hill 2009.

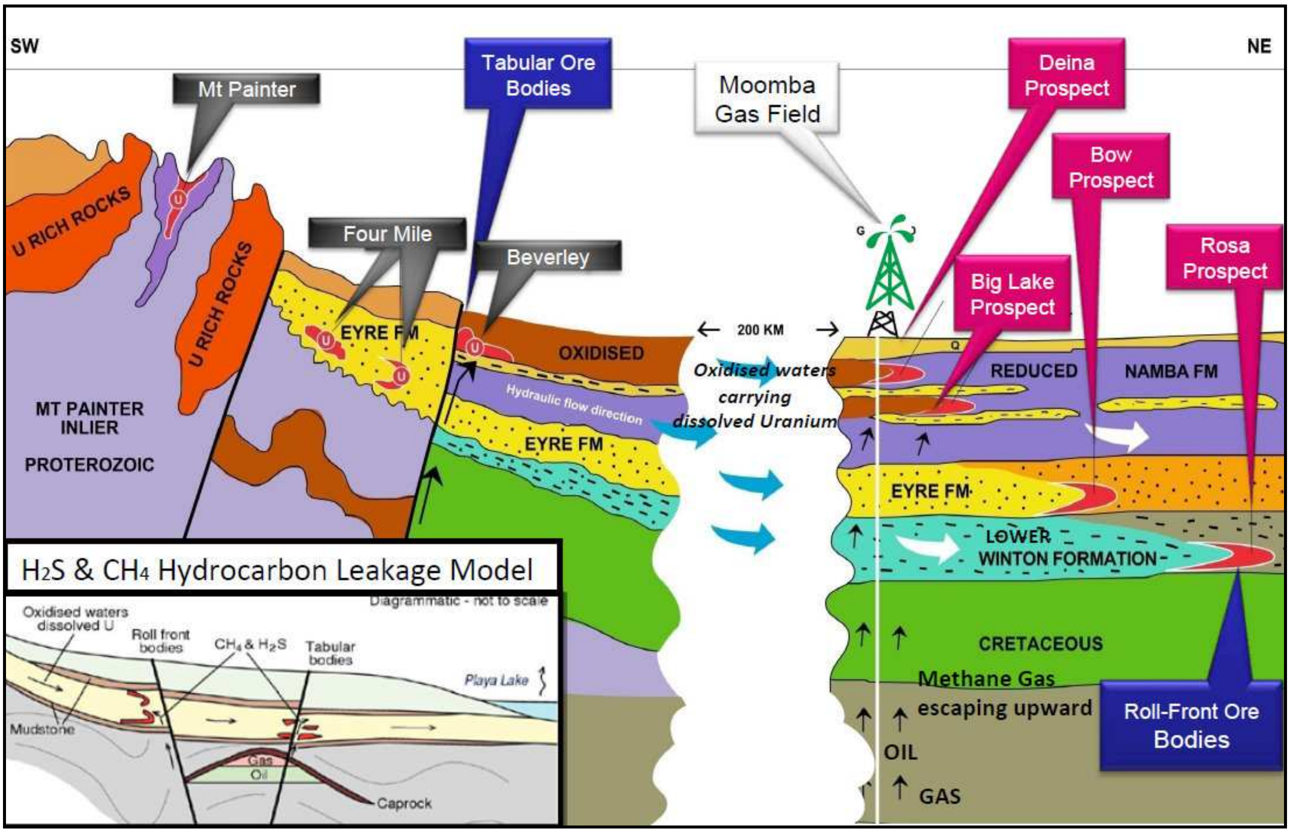


Figure 20 *Roll front uranium model courtesy of Hill, 2009.*

The following extract is from a January 5 press release by Roland Hill, Managing Director, Crescent Gold which is a uranium explorer in the areas immediately adjacent to the SA Beach Sands exploration licences.

Crescent Gold Limited, is pleased to announce exciting uranium assay results from its Sturt Project tenements centred on Moomba in north eastern South Australia. The results are based on drill core samples obtained from the Project's first cored holes. Maximum values were:

1,625 ppm U3O8 over a 7.5cm interval - Big Lake 20 Prospect
864 ppm U3O8 over a 10cm interval - Big Lake 28 Prospect

Roland Hill, Managing Director, said "Assays of this magnitude enhance the significance of our announcement on 25 September 2009 of the discovery of extensive sedimentary uranium anomalism hosted in the Namba Formation sediments of Tertiary age." Complete cores were obtained through the mineralised intervals providing high-quality samples which were assayed using pressed powder XRF by Genalysis Laboratories.

The uranium mineralisation at both localities has been found to occur in dark clays directly underlying oxidised channel sands. Crescent Managing Director Mr Roland Hill said today that "The discovery of strong uranium grades in bounding clays is indicative of the passage of a strongly mineralised system through adjacent permeable sands."

Photographs from the press release of two drillcore sections are shown below in Figure 21.

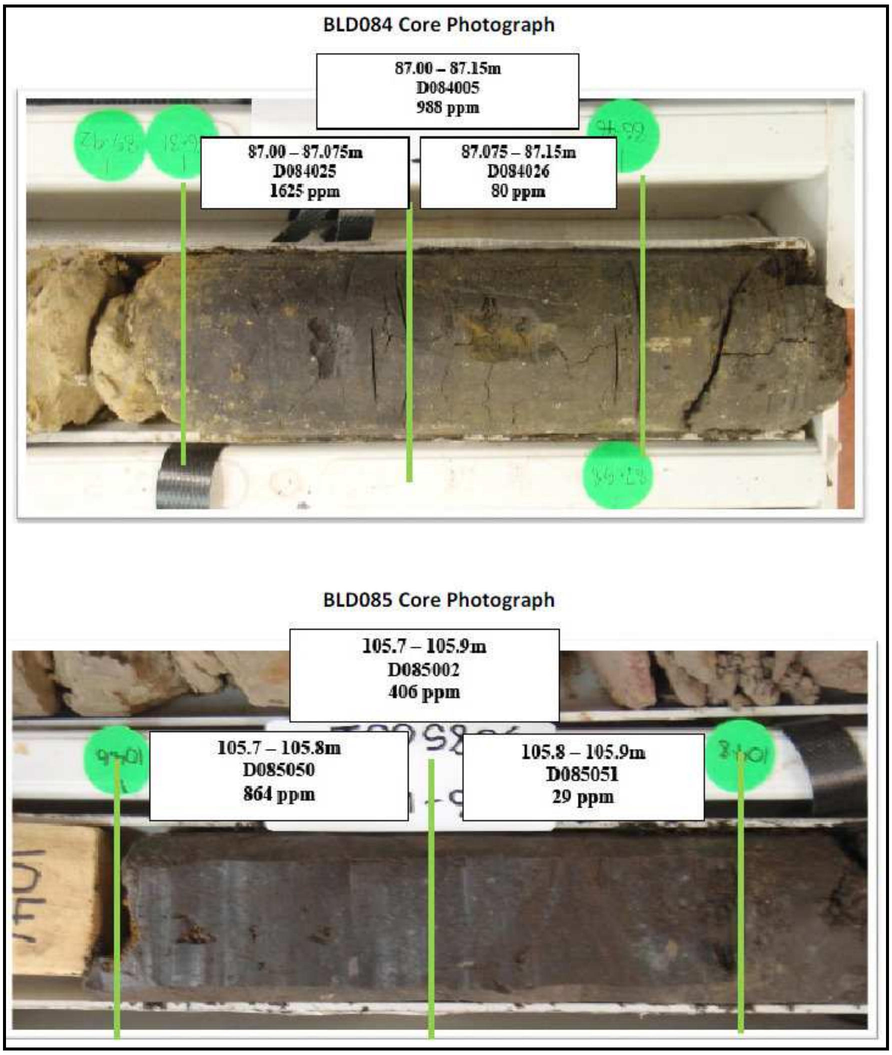


Figure 21 *Images of drill core from Crescent Gold's January 5 Press Release showing zones of high uranium associated with what appears to be carbonaceous clays..*

These drill results are significant as they show important increases in uranium concentration in association with what appears to be carbonaceous clays where the carbonaceous material may provide the required redox conditions for the uranium to precipitate out of solution. If this is the case, then it may provide an alternative mechanism to gas migration from an underlying oil field to create the right context for concentration of uranium.

This result is significant and increases the potential value of using airborne EM to understand the subsurface geology. The clays are expected to be electrically conductive and potentially detectable from an airborne survey. This could provide a focus method for future uranium drilling programs.

Recommendations

Based upon our analysis of the available public domain geophysical data remote sensing imagery and published reports we have prepared a set of recommendations for further work.

There is no strong evidence for the existence of heavy mineral sands in this area or that the geological environment is conducive to their concentration. We do however recommend that a field inspection should be undertaken along parts of the Cooper Creek to see if there is any evidence of heavy mineral accumulations as a result of the recent flooding. If none are detected, then we would not recommend further heavy mineral exploration activities in these ELs.

We recommend that the petroleum wells be evaluated to build an understanding of the following:

Elevated gamma ray response
Conductivity distribution of the top 500 metres
Ltihological interpretation of the top 500 metres
Creation of a shallow geological model for the exploration licence area.

This work will help to build a predictive model for roll front uranium exploration, evaluation of the airborne EM data and future drilling data.

We recommend that data from the Frome airborne EM survey is evaluated with respect to the young geological units such as the Namba Formation, Eyre Formation and Lower Winton Formation, all of which are potential hosts for uranium deposits.

David A. Pratt, M.Sc. Ph.D. September, 2010
Geophysicist ASEG, SEG, EAGE, AAMG

Near Surface Commodities Pty Ltd

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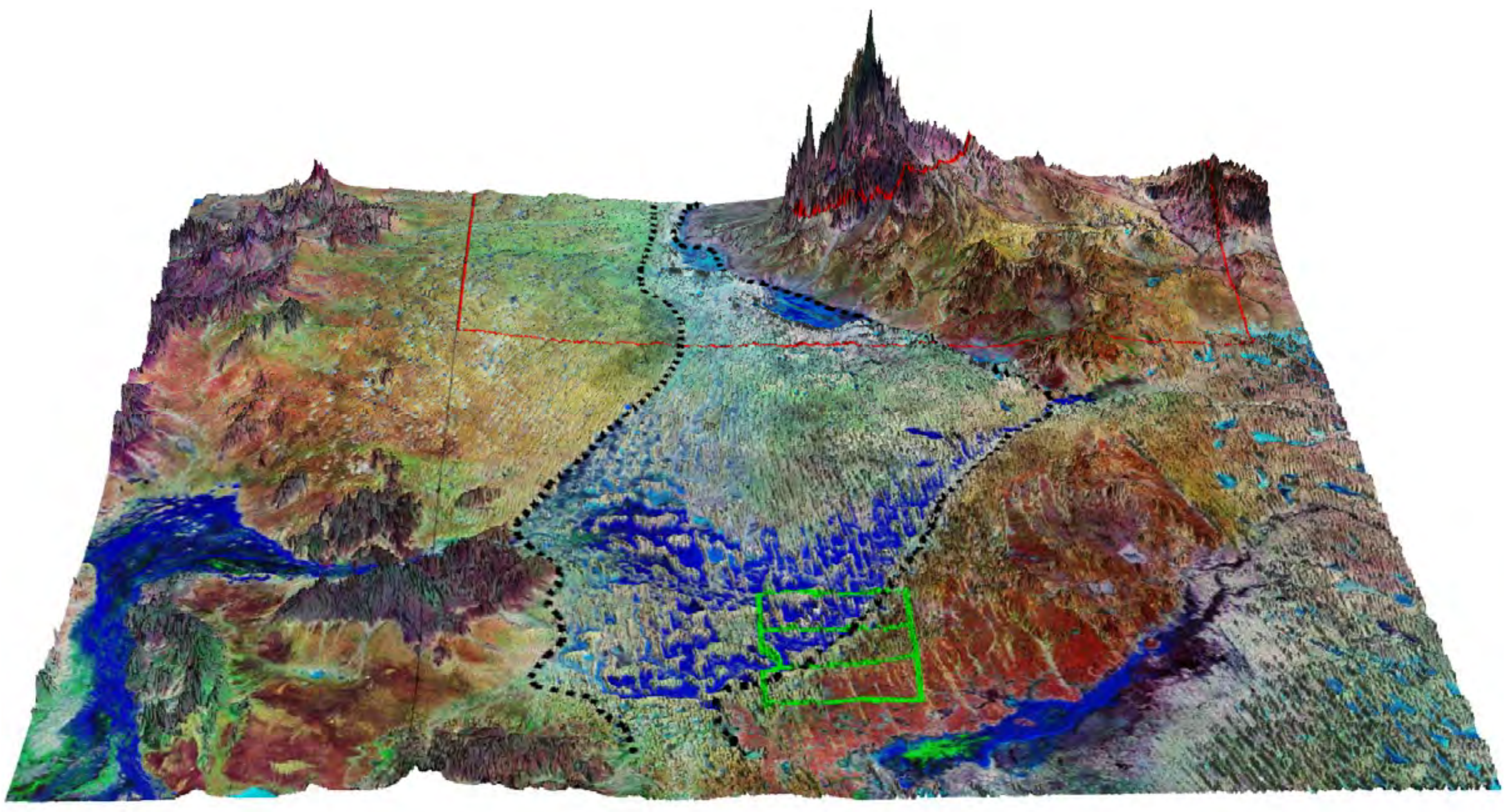
Evaluation of TEMPEST AEM and Well Data Strzelecki Depression South Australia Joint Annual Technical Report EL 4280, 4281 & 4282 SA

for SA Beach Sands Pty Ltd

Report Period 30/6/2010 – 29/6/2011

by David A. Pratt

Near Surface Commodities Pty Ltd



Contents

Executive Summary

The report presents the results of work undertaken by Near Surface Commodities to evaluate the potential use of airborne electromagnetic surveying and existing petroleum log data for exploration within SA Beach Sands Pty Ltd exploration licences EL 4280, EL 4281 and EL 4282, granted from 30th June 2011. Future exploration will be targeting sedimentary uranium deposits by looking for suitable sub-surface environments that may lead to concentration of uranium in “roll front” style deposits.

The 2010 Frome Embayment TEMPEST airborne electromagnetic survey flown by Fugro Airborne on behalf of PIRSA and Geoscience Australia provides an excellent resource, as it traverses a geological environment at the northern end of the Flinders Ranges that is similar to that encountered in the exploration licence areas. The survey includes Recent sediments in the Strzelecki Depression and also the underlying Eyre Formation sediments.

The analysis indicates that the method is likely to be of marginal value in the exploration for uranium in the Strzelecki Depression as the region is covered with salt pans and sand dunes and is believed to be dominated by electrically conductive saline ground water. The high conductivity of the water table prevents deep penetration of the electromagnetic signal and masks deeper geological contrasts. The outcrop region of the Eyre Formation sediments may exhibit suitable contrast, but the probable deep weathering may make the sediments too conductive to see the required geological contrasts.

While there may be some success from an airborne TEMPEST survey, the high cost of covering the area at a suitable line spacing is likely to be less effective than a systematic drilling program on the same budget. The recent success published by Uranium Equities on the southern end of the Strzelecki Depression suggests that a ground electromagnetic survey may offer more value than an airborne survey. With limited information available on the subsurface geological environment, an initial drilling program is more likely to provide useful information about the potential for uranium exploration. A subsequent ground electromagnetic survey may help extend the geological knowledge at a lower cost.

The existing petroleum well data did not provide any direct evidence for uranium in the shallow part of the sequence, but some of the wells will provide useful geological information in future exploration.

Introduction

This progress report on EL 4280, 4281 and 4282, South Australia covers geosciences studies performed by Near Surface Commodities on behalf of SA Beach Sands. Our work on this project covered recommendations prepared in our progress report (Pratt, 2010). A locality map for the exploration licences 4280, 4281 and 4282 is shown below.

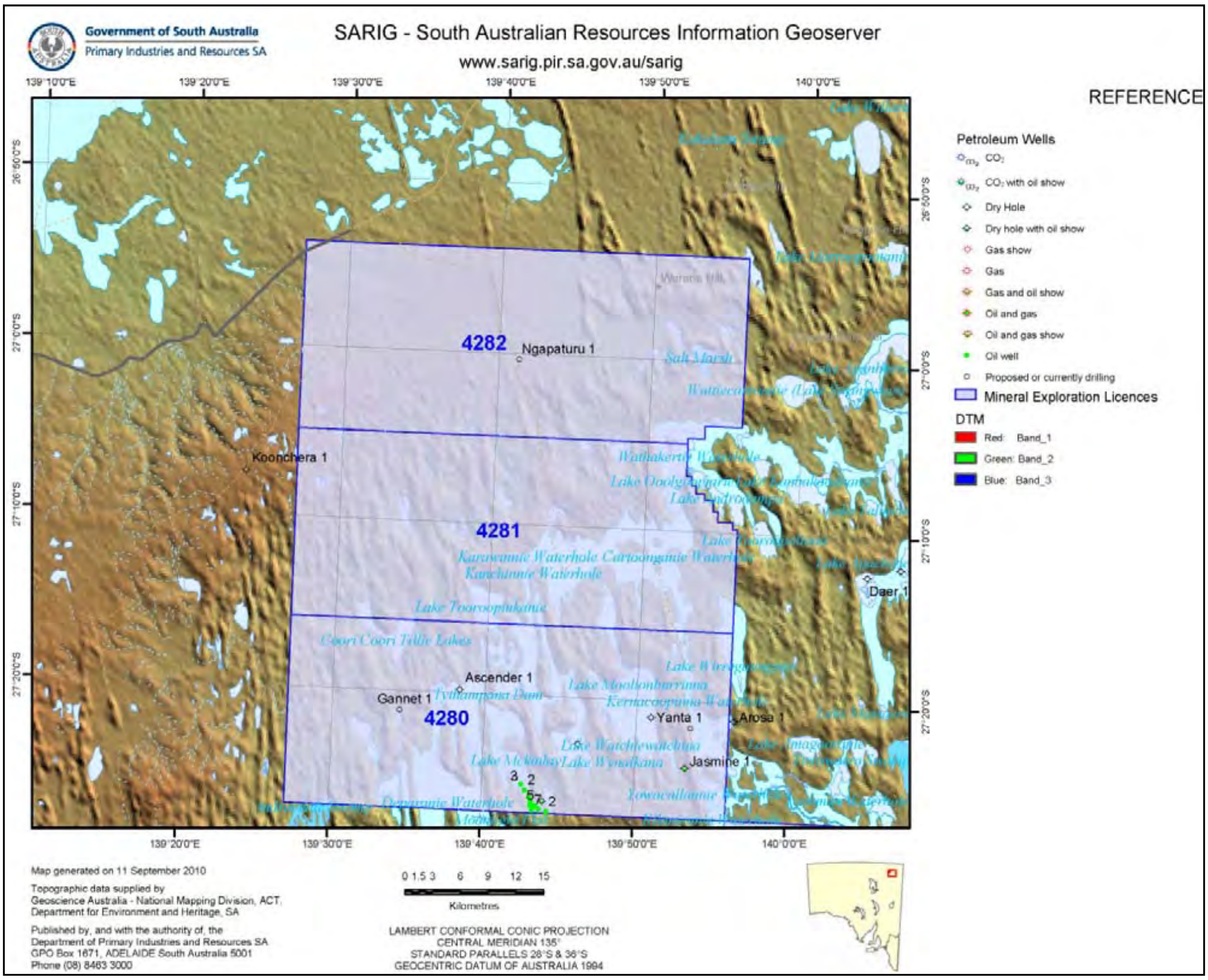


***Figure 1**. Location map for the exploration licences EL 4280, 4281 & 4282 SA.*

Our work covers the evaluation of the PIRSA-Geoscience Australia Frome Embayment TEMPEST airborne EM survey and petroleum drill hole gamma ray logs. Public domain Landsat imagery and SRTM digital terrain data was used to assist with the visualization and interpretation of the datasets.

While the Frome Embayment airborne TEM survey does not include the exploration licences, it does cross the southern extension of the Strzelecki Depression, immediately north of the Flinders Ranges. Our objective was to determine the potential use of airborne electromagnetic method for detection of near surface geological changes that could be relevant to uranium exploration in the exploration licences.

We obtained copies of logs from many of the petroleum wells in the vicinity of the exploration licences. Our objective is to determine if any logs have elevated gamma ray responses within 200 metres of the surface.

Evaluation of Frome Embayment TEMPEST AEM Survey

A large airborne EM survey covering 95,000 square kilometers was funded by PIRSA and Geoscience Australia (Neumann, 2010) to enhance uranium and mineral exploration within the survey area (Figure 2). The survey acquired 32,300 line kilometers of data with lines spaced 2.5 km to 5 km apart. Some of the key objectives for this survey include the mapping of the Eyre Formation and various paleochannel hosted uranium deposits adjacent to the Flinders Ranges

Frome Embayment Airborne Survey

The location of the TEMPEST airborne transient electromagnetic survey is shown Figure 2 superimposed on a Landsat image. The three exploration licences are shown as white rectangles in the northern part of the image.

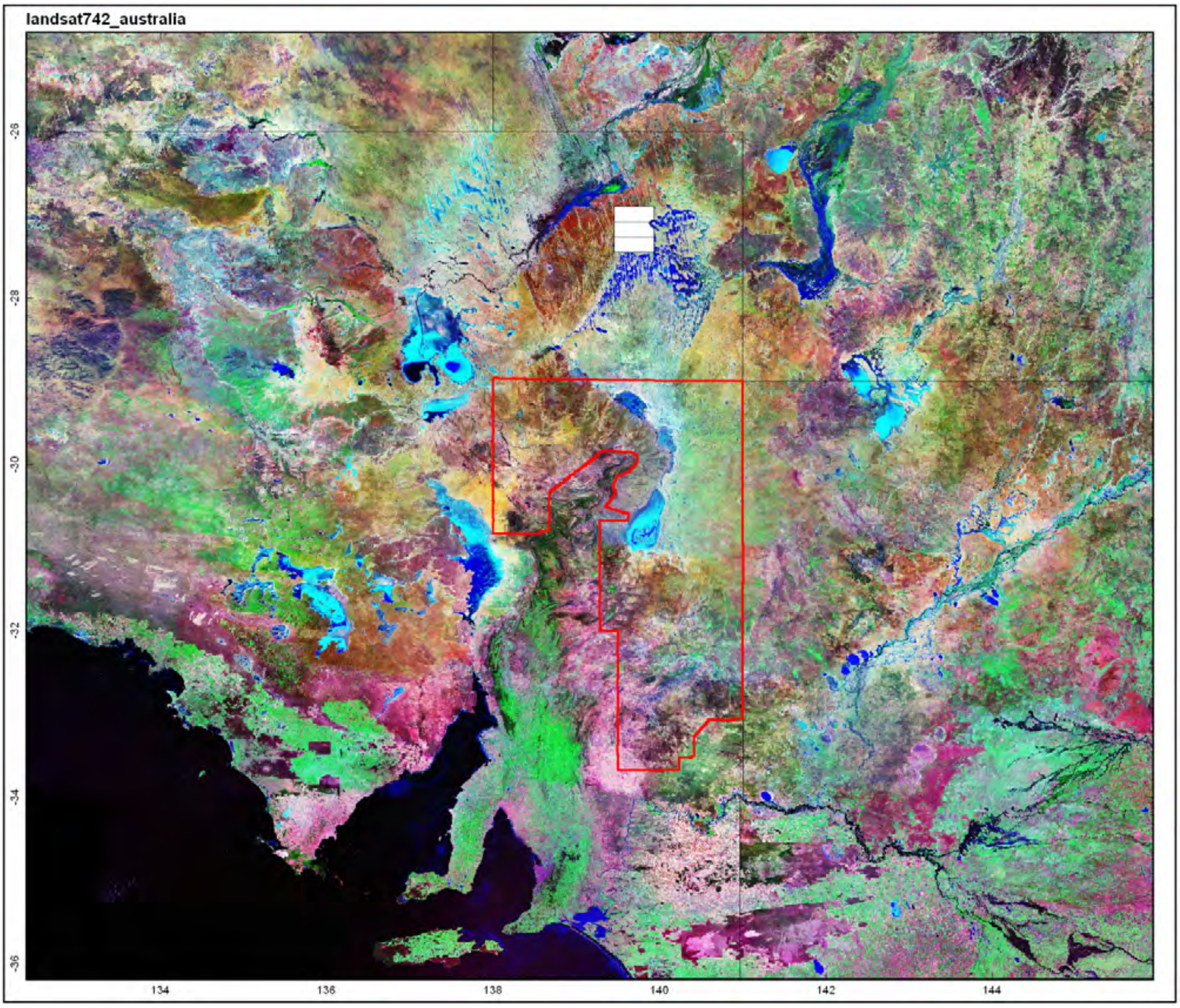


Figure 2 *Locality map for the Frome TEMPEST airborne EM survey (red) and the exploration licences EL 4280, 4281 & 4282 SA.*

The following description of the survey was provided with the data:

"Airborne Electromagnetic (AEM) data are being acquired by Geoscience Australia (GA) in areas considered to have potential for uranium or thorium mineralisation under the Australian Government's Onshore Energy Security Program (OESP). The surveys have been managed by Geoscience Australia's AEM Acquisition and

Interpretation project. The Frome Embayment AEM survey was flown using the TEMPESTTM AEM system from 19 May to 2 November 2010. The data acquisition and data processing were carried out by Fugro Airborne Surveys (FAS) under contract to GA. A description of the dataset is contained in the table below.

The survey consists of regional lines flown at a line spacing of 5 km, with infill lines flown at a line spacing of 2.5 km. The survey consists of approximately 32,300 line km covering an area of 95,000 km2. Approximately 3,200 line km of infill data were funded by the Department of Primary Industry and Resources of South Australia (PIRSA). PIRSA also funded 4 additional lines referred to as the “Cariewerloo Traverses”, and these lines were released by PIRSA in November 2010.

This data release contains the Frome Embayment AEM data funded by GA and PIRSA. There was also a block of infill lines funded by a private company. This infill block is referred to as the “C1 Subscription” infill. Under the terms of agreement between the private company and GA, the C1 Subscription lines are not being made publicly available in this release, but will be released 12 months after this release.”

Data files supplied with the release are listed in the table below.

NAME	FORMAT	DESCRIPTION
Point located data Frome_Final_EM_part1.zip Frome_Final_EM_part2.zip Frome_Final_EM.des Frome_Final_EM.dfn Frome_Final_CND.zip Frome_Final_CND.des Frome_Final_CND.dfn	ASCII .dat (zipped) ASCII .dat (zipped) ASCII .des ASCII .dfn ASCII .dat (zipped) ASCII .des ASCII .dfn	Point-located EM window data and ancillary data (part 1 of 2) Point-located EM window data and ancillary data (part 2 of 2) Header containing TEMPEST system specifications Header description of data fields Point-located EM Flow conductivity data and ancillary data Descriptor information Header description of data fields
Grids Frome_CND_XXm_to_XXm.ers Frome_DEM.ers Frome_TMI.ers	.ers .ers .ers	ER Mapper grids of conductivity depth slices (10 depth slices) ER Mapper grid of digital elevation model ER Mapper grid of Total Magnetic Intensity
Multiplots Cdi_XZ_final_Linenumber_FltXX.pdf	.pdf	Multiplots showing EM windows, CDI sections and ancillary data
Report Frome_AEM_Report.doc Disclaimer.txt	.doc .txt	Frome AEM survey Acquisition and Processing Report Fugro Airborne Surveys general disclaimer

The data file "Frome_Final_EM.dat" contained the data used in our evaluation work and the contents of this file are listed below. The data channels CND_DS01 to CND_DS10 contained processed electrical conductivity estimates for the depth interval 0 to 200 metres and this data was used for our evaluation. In reality, only the data from 0 to 60m proved to be useful.

Field	Channel		Description		Units	Undefined	Format
COMM	1	LINE	Line			-99999999	i10
COMM	2	FLIGHT	Flight			-99	i4
COMM	3	FID	Fiducial		(s)	-999999.9	f8.1
COMM	4	PROJECT_FAS	FAS Project Number			-9999	i6
COMM	5	PROJECT_GA	GA Project Number			-9999	i6
COMM	6	AIRCRAFT	System Number			-9	i3
COMM	7	DATE	Date		ddmmyyyy	-9999999	i9
COMM	8	TIME	Time - local midnight		(s)	-9999.9	f8.1
COMM	9	BEARING	Line Bearing		(deg)	-99	i4
COMM	10	LATITUDE	Latitude GDA94		(deg)	-99.9999999	f12.7
COMM	11	LONGITUDE	Longitude GDA94		(deg)	-999.9999999	f13.7
COMM	12	EASTING	Easting MGA54		(m)	-99999.99	f10.2
COMM	13	NORTHING	Northing MGA54		(m)	-999999.99	f11.2
COMM	14	LIDAR	Final Lidar altimeter		(m)	-999.99	f8.2
COMM	15	RADALT	Final Radar altimeter		(m)	-999.99	f8.2
COMM	16	TX_ELEVATION	Final Transmitter Elevation - AHD		(m)	-999.99	f8.2
COMM	17	DTM	Final Ground Elevation - AHD		(m)	-999.99	f8.2
COMM	18	MAG	Final TMI		(nT)	-99999.999	f11.3
COMM	19	CND_DS01	CDI_depth_slice_01	0- 5 m	(mS/m)	-9999.999	f10.3
COMM	20	CND_DS02	CDI_depth_slice_02	5- 10 m	(mS/m)	-9999.999	f10.3
COMM	21	CND_DS03	CDI_depth_slice_03	10- 15 m	(mS/m)	-9999.999	f10.3
COMM	22	CND_DS04	CDI_depth_slice_04	15- 20 m	(mS/m)	-9999.999	f10.3
COMM	23	CND_DS05	CDI_depth_slice_05	20- 30 m	(mS/m)	-9999.999	f10.3
COMM	24	CND_DS06	CDI_depth_slice_06	30- 40 m	(mS/m)	-9999.999	f10.3
COMM	25	CND_DS07	CDI_depth_slice_07	40- 60 m	(mS/m)	-9999.999	f10.3
COMM	26	CND_DS08	CDI_depth_slice_08	60- 100 m	(mS/m)	-9999.999	f10.3
COMM	27	CND_DS09	CDI_depth_slice_09	100-150 m	(mS/m)	-9999.999	f10.3
COMM	28	CND_DS10	CDI_depth_slice_10	150-200 m	(mS/m)	-9999.999	f10.3
COMM	29	CND[1]	Conductivity_001	0- 5 m	(mS/m)	-9999.999	f10.3
COMM	30	CND[2]	Conductivity_002	5- 10 m	(mS/m)	-9999.999	f10.3
COMM	31	CND[3]	Conductivity_003	10- 15 m	(mS/m)	-9999.999	f10.3
COMM	32	CND[4]	Conductivity_004	15- 20 m	(mS/m)	-9999.999	f10.3
COMM	33	CND[5]	Conductivity_005	20- 25 m	(mS/m)	-9999.999	f10.3
COMM	34	CND[6]	Conductivity_006	25- 30 m	(mS/m)	-9999.999	f10.3
COMM	35	CND[7]	Conductivity_007	30- 35 m	(mS/m)	-9999.999	f10.3
COMM	36	CND[8]	Conductivity_008	35- 40 m	(mS/m)	-9999.999	f10.3
COMM	37	CND[9]	Conductivity_009	40- 45 m	(mS/m)	-9999.999	f10.3
COMM	38	CND[10]	Conductivity_010	45- 50 m	(mS/m)	-9999.999	f10.3
COMM	39	CND[11]	Conductivity_011	50- 55 m	(mS/m)	-9999.999	f10.3
COMM	40	CND[12]	Conductivity_012	55- 60 m	(mS/m)	-9999.999	f10.3
COMM	41	CND[13]	Conductivity_013	60- 65 m	(mS/m)	-9999.999	f10.3
COMM	42	CND[14]	Conductivity_014	65- 70 m	(mS/m)	-9999.999	f10.3
COMM	43	CND[15]	Conductivity_015	70- 75 m	(mS/m)	-9999.999	f10.3
COMM	44	CND[16]	Conductivity_016	75- 80 m	(mS/m)	-9999.999	f10.3
COMM	45	CND[17]	Conductivity_017	80- 85 m	(mS/m)	-9999.999	f10.3
COMM	46	CND[18]	Conductivity_018	85- 90 m	(mS/m)	-9999.999	f10.3
COMM	47	CND[19]	Conductivity_019	90- 95 m	(mS/m)	-9999.999	f10.3
COMM	48	CND[20]	Conductivity_020	95-100 m	(mS/m)	-9999.999	f10.3
COMM	49	CND[21]	Conductivity_021	100-105 m	(mS/m)	-9999.999	f10.3
COMM	50	CND[22]	Conductivity_022	105-110 m	(mS/m)	-9999.999	f10.3
COMM	51	CND[23]	Conductivity_023	110-115 m	(mS/m)	-9999.999	f10.3
COMM	52	CND[24]	Conductivity_024	115-120 m	(mS/m)	-9999.999	f10.3
COMM	53	CND[25]	Conductivity_025	120-125 m	(mS/m)	-9999.999	f10.3
COMM	54	CND[26]	Conductivity_026	125-130 m	(mS/m)	-9999.999	f10.3
COMM	55	CND[27]	Conductivity_027	130-135 m	(mS/m)	-9999.999	f10.3
COMM	56	CND[28]	Conductivity_028	135-140 m	(mS/m)	-9999.999	f10.3
COMM	57	CND[29]	Conductivity_029	140-145 m	(mS/m)	-9999.999	f10.3
COMM	58	CND[30]	Conductivity_030	145-150 m	(mS/m)	-9999.999	f10.3
COMM	59	CND[31]	Conductivity_031	150-155 m	(mS/m)	-9999.999	f10.3
COMM	60	CND[32]	Conductivity_032	155-160 m	(mS/m)	-9999.999	f10.3
COMM	61	CND[33]	Conductivity_033	160-165 m	(mS/m)	-9999.999	f10.3
COMM	62	CND[34]	Conductivity_034	165-170 m	(mS/m)	-9999.999	f10.3
COMM	63	CND[35]	Conductivity_035	170-175 m	(mS/m)	-9999.999	f10.3
COMM	64	CND[36]	Conductivity_036	175-180 m	(mS/m)	-9999.999	f10.3
COMM	65	CND[37]	Conductivity_037	180-185 m	(mS/m)	-9999.999	f10.3
COMM	66	CND[38]	Conductivity_038	185-190 m	(mS/m)	-9999.999	f10.3
COMM	67	CND[39]	Conductivity_039	190-195 m	(mS/m)	-9999.999	f10.3
COMM	68	CND[40]	Conductivity_040	195-200 m	(mS/m)	-9999.999	f10.3

Visualisation of AEM Data

Eleven long lines from the northern end of the TEM survey area were selected for the analysis as they covered ground that is believed to be similar to that encountered beneath the exploration licences. The locations of the flight lines are shown in figure 3.

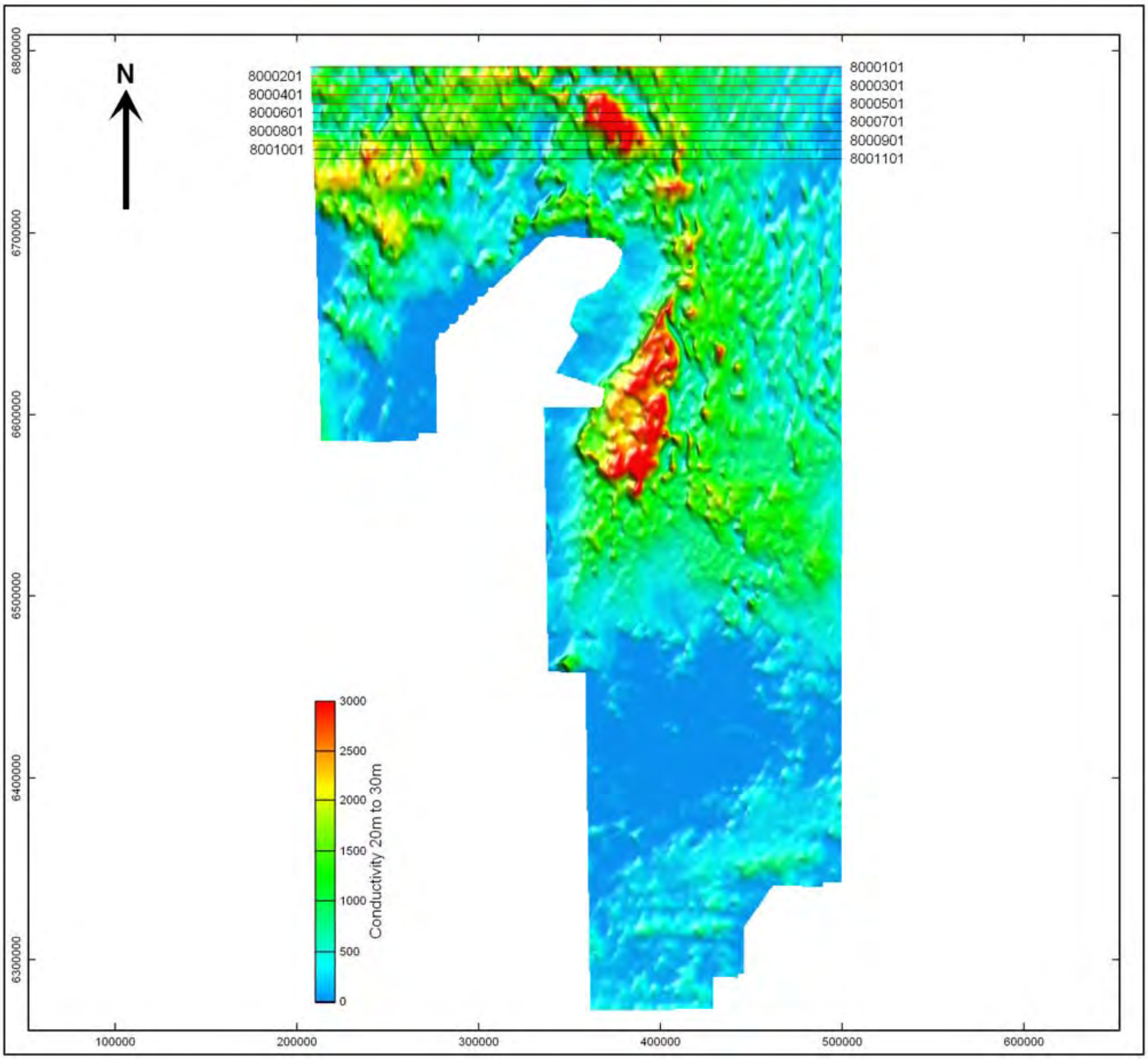


***Figure 3**. Location of selected flight lines used to illustrate the potential value of the airborne EM method for use in exploring EL 4280, 4281 & 4282 SA. The image underlay is derived from a grid of the electrical conductivities for the depth slice 20m to 30m.*

The underlay image is derived from the electrical conductivity depth slice from 20 to 30 metres beneath the ground surface. Red indicates high conductivity and blue low. The bright orange - red areas are associated with the salt in Lake Frome and Lake Blanche.

Figure 4 shows an example from a line segment over Lake Blanche of the conductivity depth image (CDI) where a black line is drawn between each depth interval between the ground surface and 60 metres. Each layer is suspended from the ground surface datum. The high conductivity of the salt lake is dominated by red colours, whereas the large sand dune to the right of the lake shows lower conductivities, probably associated with fresh rain water sitting above more saline waters beneath.

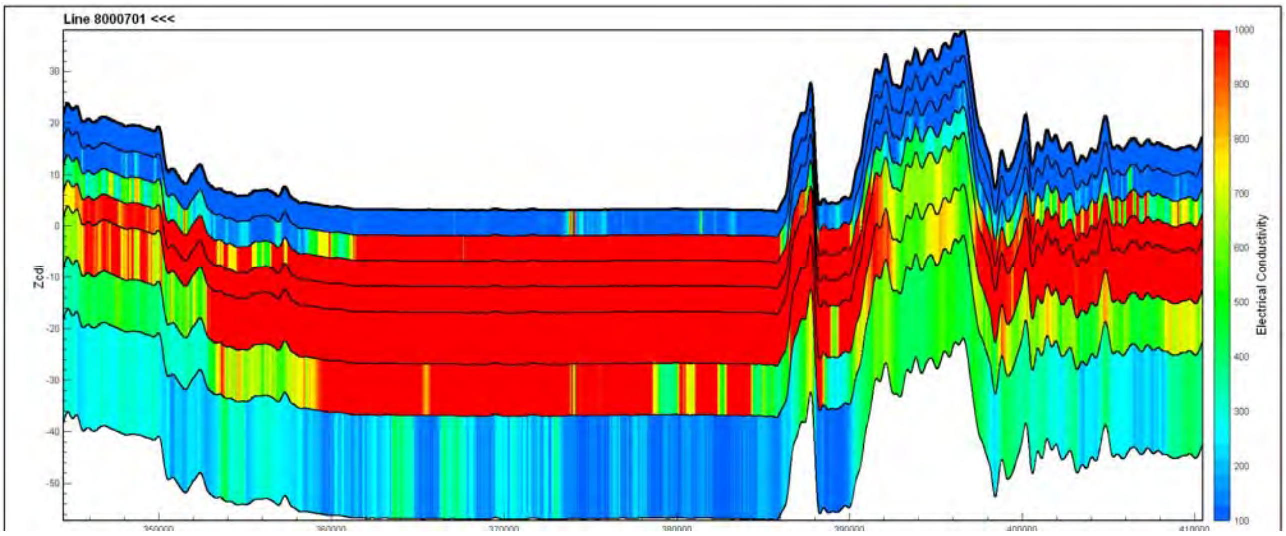


Figure 4 *is an example of a conductivity depth image for a segment of flight line 8000701 across Lake Blanche. Thin black lines separate the individual processed depth horizons and the ground surface is denoted by the thick black line. The elevation axis is shown on the left and conductivity colour scale on the right.*

Note that the rapid changes in the surface topography on the right side of the image are associated with the Strzelecki Desert sand dunes. The electrical properties are derived from geophysical inversion of the transient electromagnetic data recordings and must be treated as approximate representations of the subsurface electrical properties. They do provide a guide to near surface geological changes, but the penetration of the signal is limited by the conductivity of the near surface soils and rocks. In saline environments such as those encountered in the Frome Embayment the saline ground water in low lying areas is highly conductive and little of the electromagnetic signal penetrates below the conductive layer. We believe that the same environment exists in the northern part of the Strzelecki Depression underlying the exploration licences.

The following comments were extracted from the processing report delivered with the electromagnetic data.

"CDI conductivity sections for TEMPEST data were calculated using EMFlow and then modified to reflect the finite depth of investigation using an in-house routine, Sigtime.

The Sigtime routine removes many of the spurious conductive features that appear at depth as a result of fitting long time constant exponential decays to very small amplitude features in the late times. For each observation, the time when the response falls below a signal threshold amplitude is determined. This time is transformed into a diffusion depth with reference to the conductivity values determined for that observation. Anomalous conductivity values below this depth are replaced by background values or set to undefined, reflecting the uncertainty in their origin. The settings and options applied are indicated in the appropriate header files for Sigtime output. This procedure is different to that which would be obtained by filtering conductivity values using either a constant time or constant depth across the entire line.

The "final" X and Z EM data were simultaneously input into version 5.10 of EMFlow to calculate Conductivity Depth Images (CDI). Conductivity values were calculated at each point then run through Sigtime.

EMFlow was developed within the CRC-AMET through AMIRA research projects (Macnae et al, 1998, Stolz and Macnae, 1998). The software has been commercialised by Encom Technology Pty Ltd. Examples of TEMPEST conductivity data can be seen in Lane et al. (2000), Lane et al. (1999), and Lane and Pracillio (2000). Conductivity values were calculated to a depth of 500m below surface at each point, using a depth increment of 5m and a conductivity range of 1-3000mS/m."

Evaluation of Potential for Uranium Exploration

Our investigation is designed to test the viability of the airborne EM method as a tool to assist exploration in EL 4280, 4281 & 4282. We assume that the geological context for the northern part of the Frome Embayment airborne electromagnetic survey has similarities to those underlying the exploration licence areas. The recent sediments in the Strzelecki Depression (Figure 5) have a generally white appearance in the satellite image shown in Figure 6 interspersed with blue salt pans and lakes. These sediments exist in the exploration licence areas and also the central part of the northern end of the airborne survey. The term Strzelecki Depression is an appropriate name for the central floodplain and dune field, but it is not an assigned geographic name.

While the Eyre Formation is found in the north west section of the exploration licences and western side of the airborne survey, the latter have been heavily influenced by uplift of the Flinders Ranges basement rocks. As a result, the Eyre Formation sediments are likely to have more complex characteristics in the airborne survey area than the equivalent sediments that outcrop in the exploration licences.

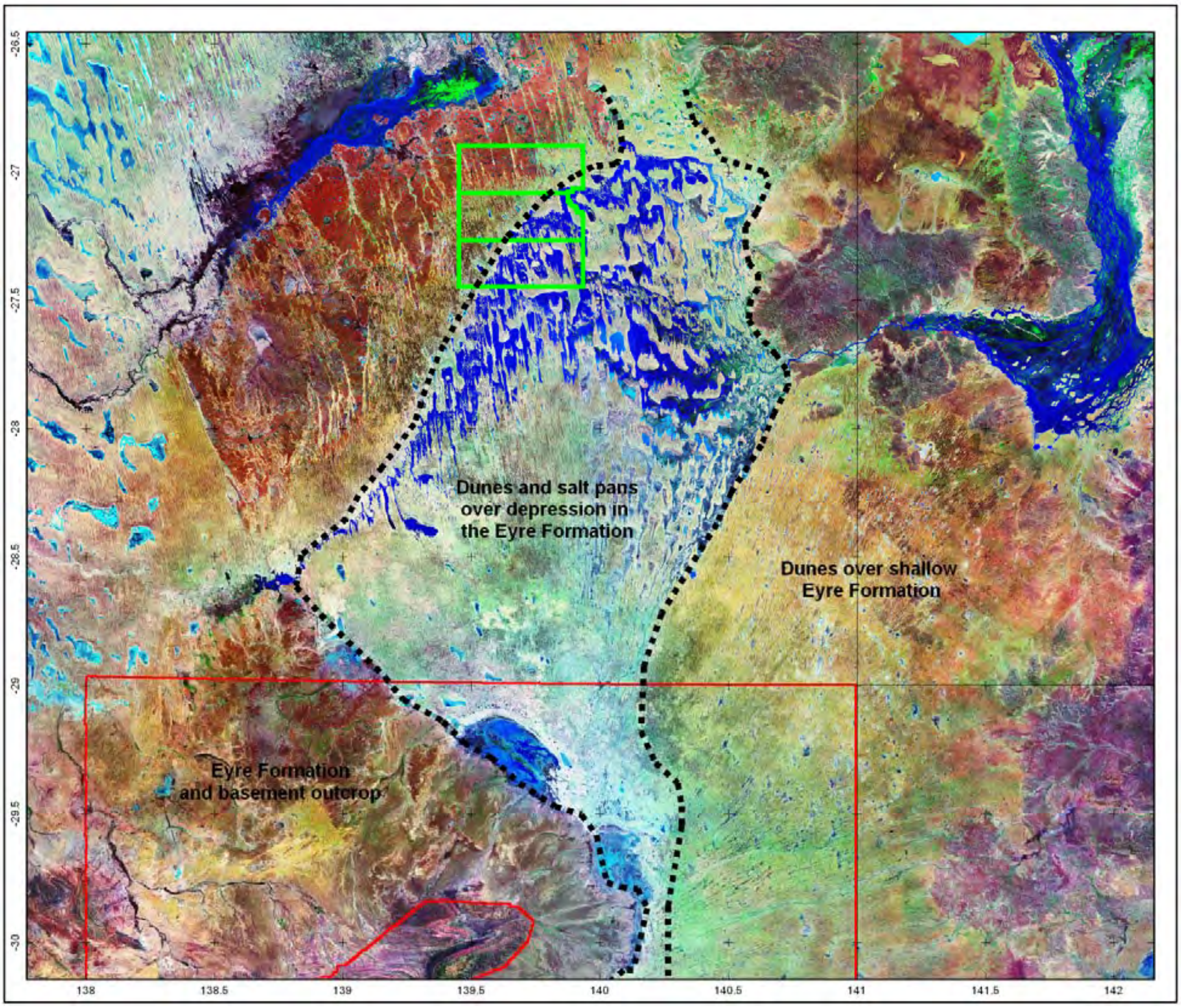
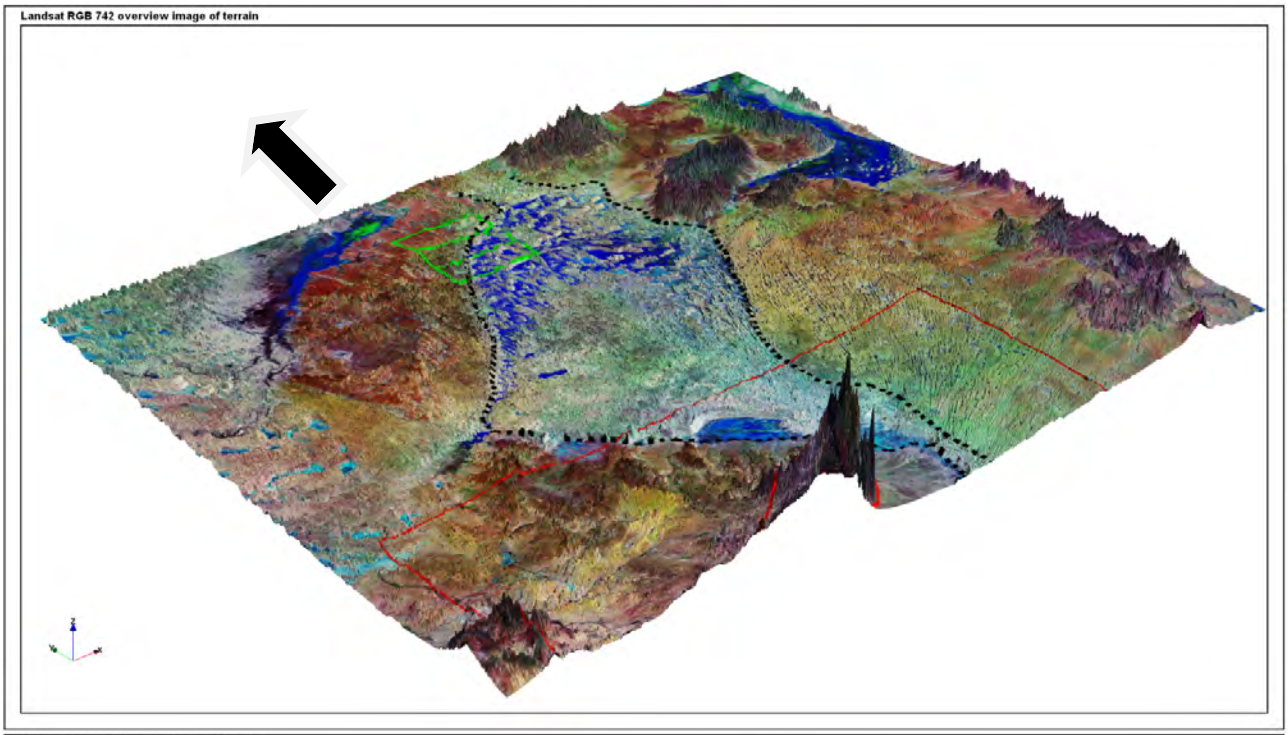
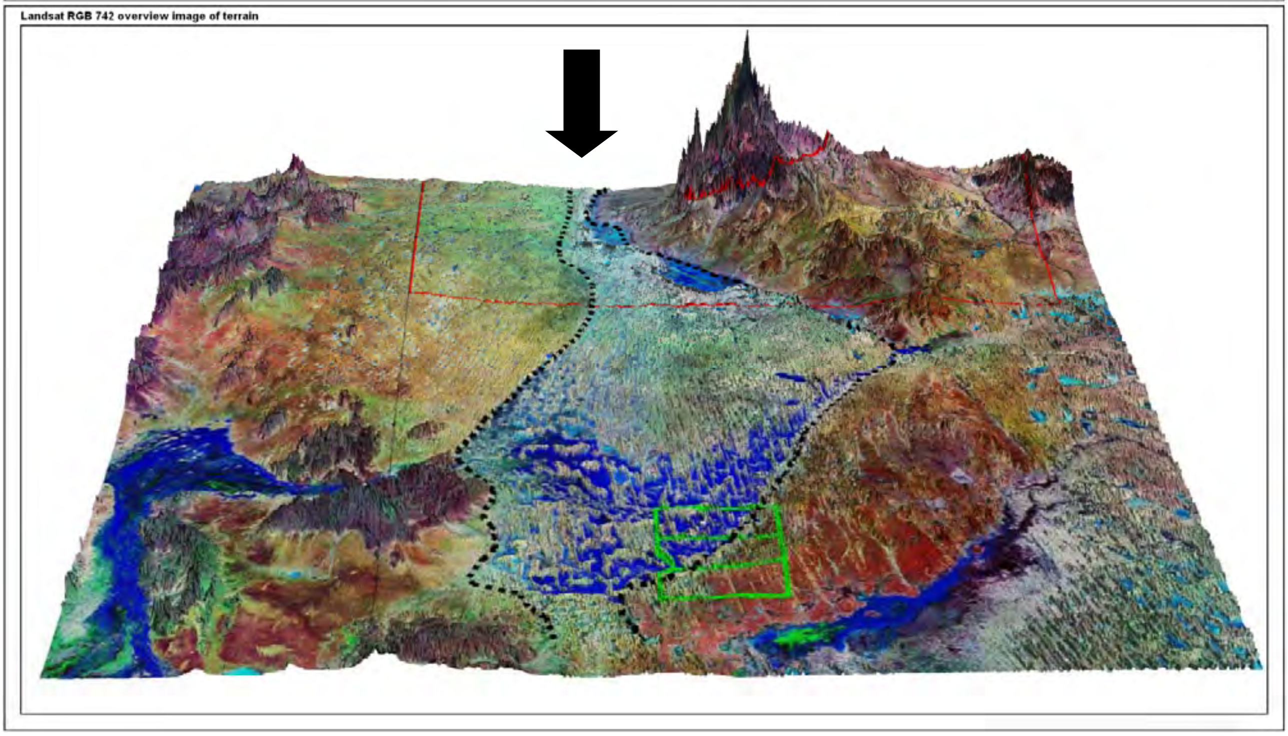


Figure 5. *Landsat image showing an outline of the northern part of the Frome Embayment airborne electromagnetic survey (red line) and the exploration licences. EL 4280, 4281 and 4282 (green line). The main landform features include the Strzelecki Depression characterised by dunes and salt pans (inside the dashed line), sand dunes to the east over shallow basement associated with the Broken Hill – Olary basement, the Eyre Formation and basement outcrop at the northern end of the Flinders Ranges.*

The widespread dune fields in the east or the airborne survey area are not present in the exploration licences and are not considered relevant to our study.

We draped the satellite image over a digital terrain surface derived from the SRTM global dataset and this is shown as 3D images in Figure 5A (looking north east) and Figure 5B (looking south).





Figures 5A (top) and 5B (bottom) *showing north east and south looking 3D views of the satellite imagery draped over a terrain elevation surface derived from the SRTM global satellite elevation model.*

We created an interactive display of up to five parallel flight lines of CDI images similar to those shown in Figure 4 along with a reference profile of the magnetic and ground surface elevation data. A zoomed segment of one of these displays is shown in Figure 6 and Figure 6A. The complete display can move interactively through the survey a line at a time. In this way we can step through groups of five survey lines to examine the continuity of buried geological features.

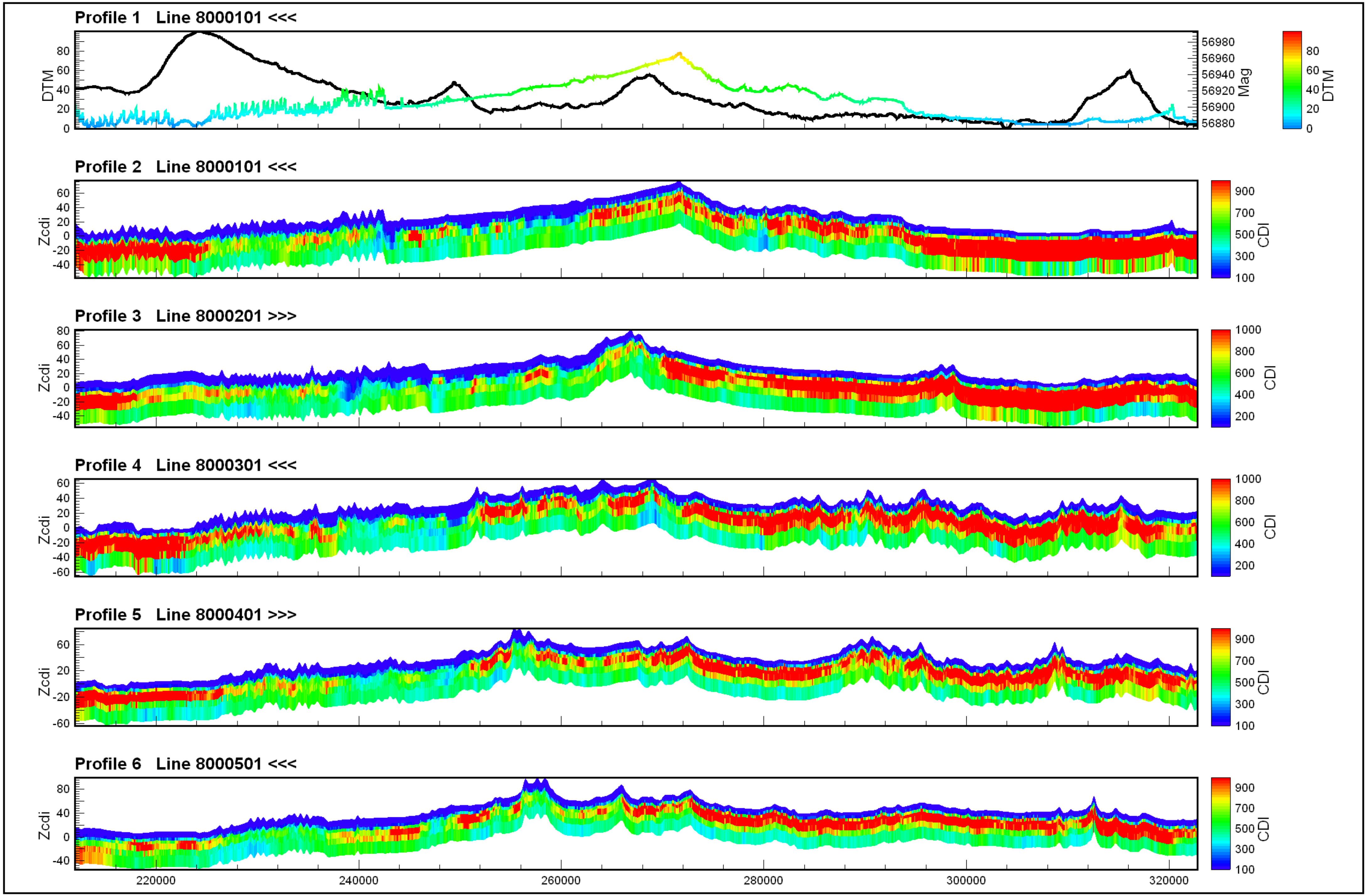


Figure 6. Frome Embayment interpretation display of a segment of five flight lines showing the magnetic field and ground surface (Profile 1) and five conductivity depth profiles in Profiles 2 to 6. Lake Blanche is on the right in Line 8000101.

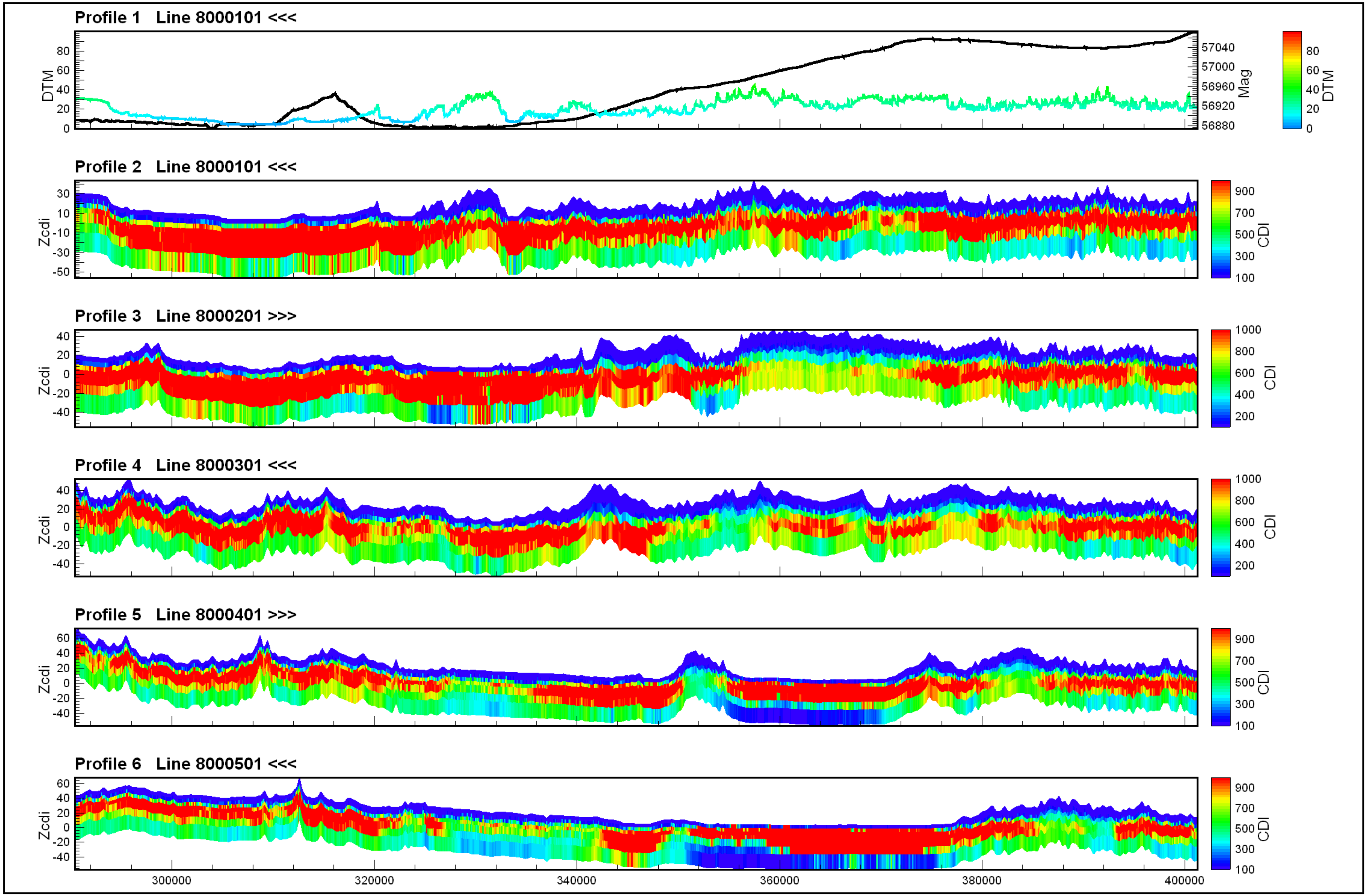


Figure 6A. Frome Embayment interpretation display of a segment of five flight lines showing the magnetic field and ground surface (Profile 1) and five conductivity depth profiles in Profiles 2 to 6. Lake Blanche is on the left in Line 8000101.

Once the colour stretch had been optimsed to suit the sediments on either side of the high conductivity salt lakes, we created a 3D visualization of the CDI sections in the context of the terrain (Figure 7, 7A, 7B). The images have been rotated 90 degrees anticlockwise to optimize the display area.

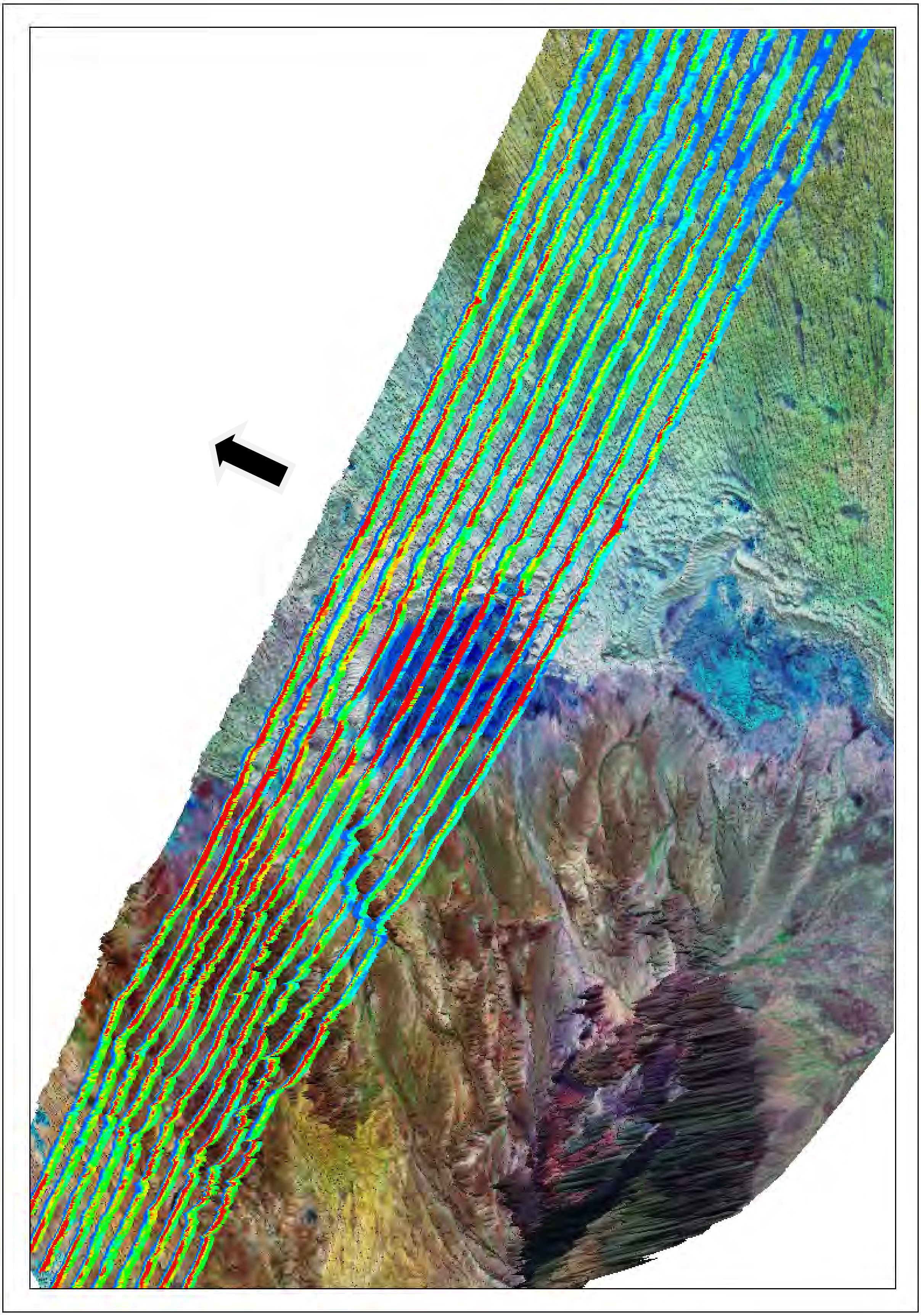


***Figure 7**. North west looking rotated view of the 3D display of the CDI sections above the 3D terrain image.*

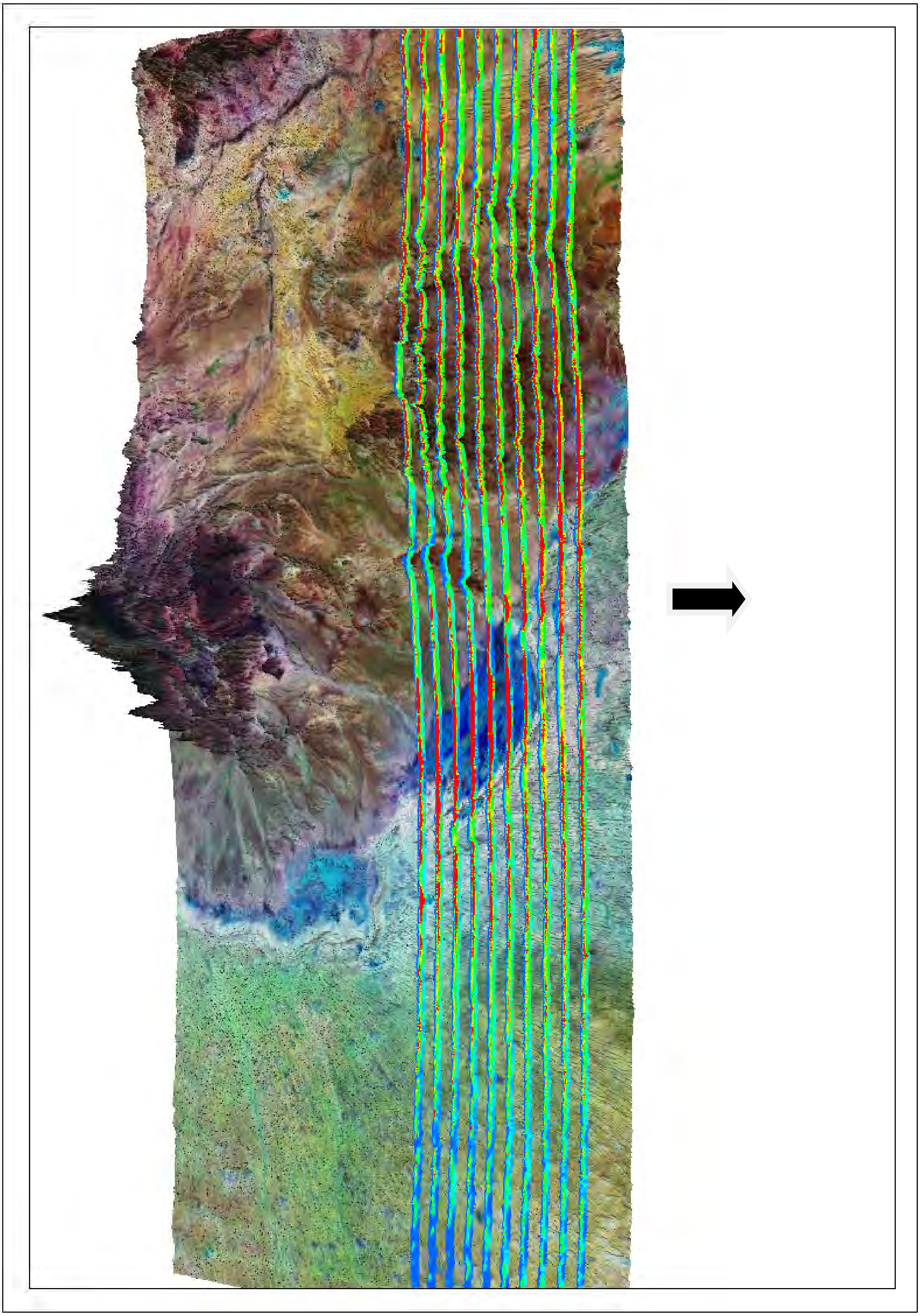


Figure 7A. *South looking rotated view of the 3D display of the CDI sections above the 3D terrain image.*

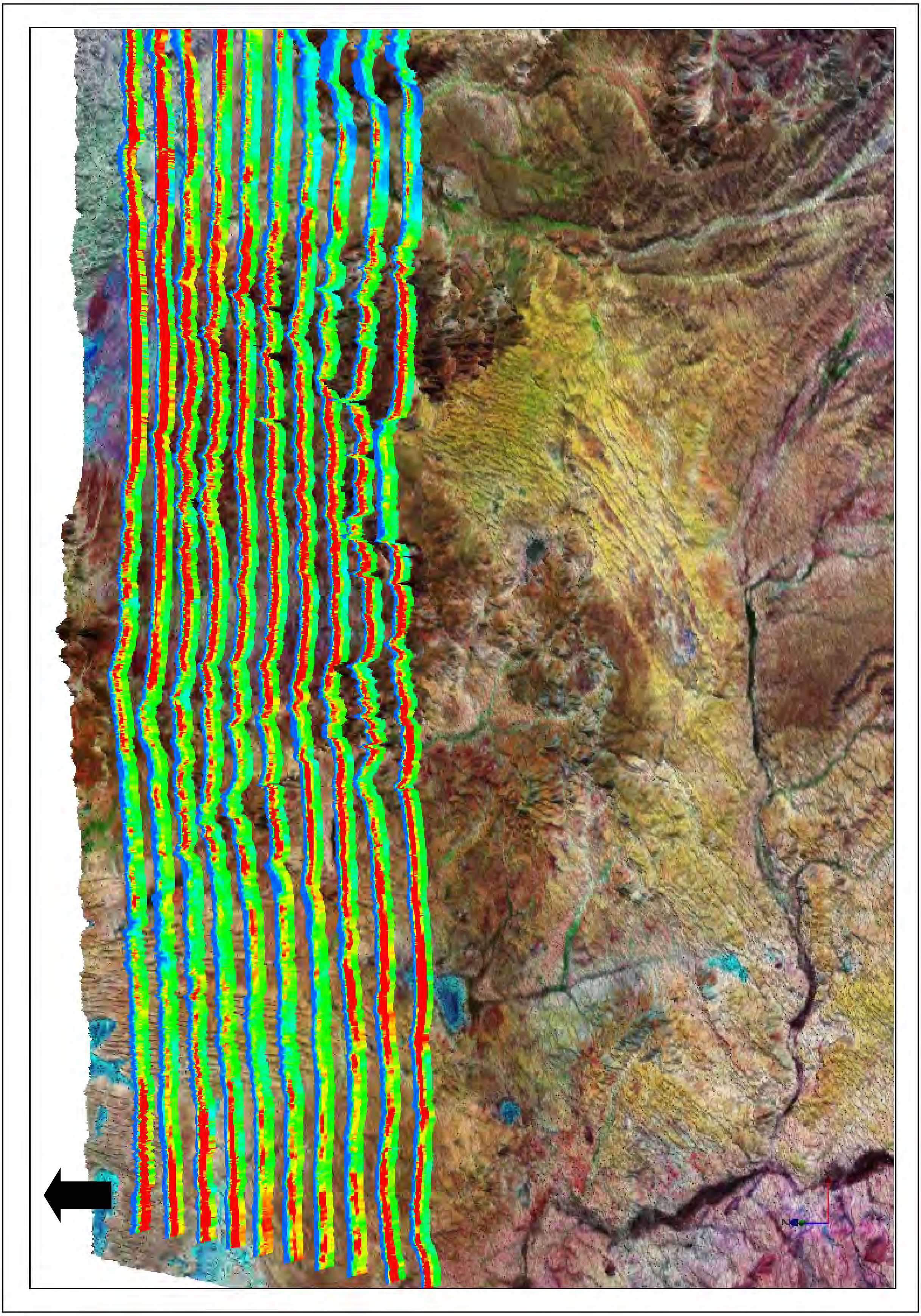


***Figure 7B**. North looking rotated 3D view of the CDI sections at the northern end of the Flinders Ranges looking over a region of Eyre Formation outcrop.*

The 3D views made it simple to assess the correlation of conductivity features in the context of terrain and the Landsat image where the latter is a useful analogue for surface geology.

Using the procedures outlined above we were able to assess the potential value of the airborne electromagnetic method as an exploration tool over the SA Beach Sands exploration licences. Our discussion is broken into three regions of the study area:

- Dunes and saltpans in the Strzelecki Depression (central)
- Eyre Formation and Basement outcrop (west)
- Eastern sand dunes.

Dunes and Saltpans in the Strzelecki Depression

The saltpans in the Strzelecki Depression are characterized by the response of Lake Blanche where the conductivities are high throughout the CDI sections and there is no apparent contrast within the section. There is a suggestion of a more resistive surface layer which may be an artifact of the processing or represent a dry layer of windblown sands.

There are many saltpans in the south eastern half of the exploration licences as can be seen in Figures 5 and 5A. We do not expect to see any geological features beneath these saltpans from a similar airborne survey.

Within this same area of the Frome Embayment survey there are numerous dunes that have low conductivities near the surface but are generally underlain by a conductive layer which is believed to be associated with saline groundwater. The only area where this does not occur is under the large dune on the eastern edge of the Lake Blanche saltpan. Here we believe that the dune has a significant layer of fresh water from periodic rain that sits on top of the saline groundwater.

Similar dune areas exist in the south eastern section of the exploration licence areas and we do not expect to see any geological features beneath these dunes from a similar airborne EM survey.

Eyre Formation and Basement Outcrop

On the western end of the EM survey as exemplified in Figure 7B, the Eyre Formation has been uplifted and eroded during the uplift of the Flinders Ranges. Some Recent dunes can be seen in part of this 3D image along with outcrop or subcrop of the basement rocks. Alluvial outwash from the Flinders Ranges can also be seen in some of the valleys. This complex geological setting makes it difficult to relate the EM survey results to the exploration licences, however, some contrast can be seen in the Eyre Formation sediments where some appear conductive and others more resistive.

Deeply weathered Eyre Formation rocks outcrop in the north west part of the exploration licences and we may possibly expect to see contrasts within the region of outcrop. This does not necessarily translate to detection of areas that could contain uranium accumulations in roll front traps.

Eastern Sand Dunes.

The dunes on the eastern side of the EM survey are part of the classic Strzelecki Desert sand dunes. These dunes trend north east and lie on what is believed to be a shallow uplift section of the Eyre Formation. The eastern uplift is associated with the Broken Hill – Olary Block which could be prospective for roll front style uranium deposits.

Once the elevation of the dunes increases beyond the saline water table, it become possible to see some contrast beneath the dunes. Several low conductivity (resistive) linear trends with northerly orientations can be seen below the dunes. Some isolated surface highs can also be seen in the data.

Since this terrain is not present in the exploration licence area, the conclusions are not relevant to further exploration in on EL 4280, 4281 and 4282.

Recent Drilling Results by Uranium Equities

Uranium Equities released a report to the Stock Exchange on 13th September that is relevant to the evaluation of the TEMPEST airborne electromagnetic survey. In this report they have stated the following:

“The best result of 0.8m @200 pm pU_3O_8 was returned from drillhole LB015_2011. The uranium was hosted by an altered siltstone at the top of an oxidized channel in the Eyre Formation at a depth of 123 metres. Follow-up holes drilled within the immediate area returned results of a similar tenor within the same unit.”

Figure 8 shows a semi-transparent overlay of the reported map on the Landsat image of the airborne electromagnetic study area. We note that the successful holes are all located in the sediments of the Strzelecki Depression which is the same environment encountered in EL 4280, 4281 and 4282.

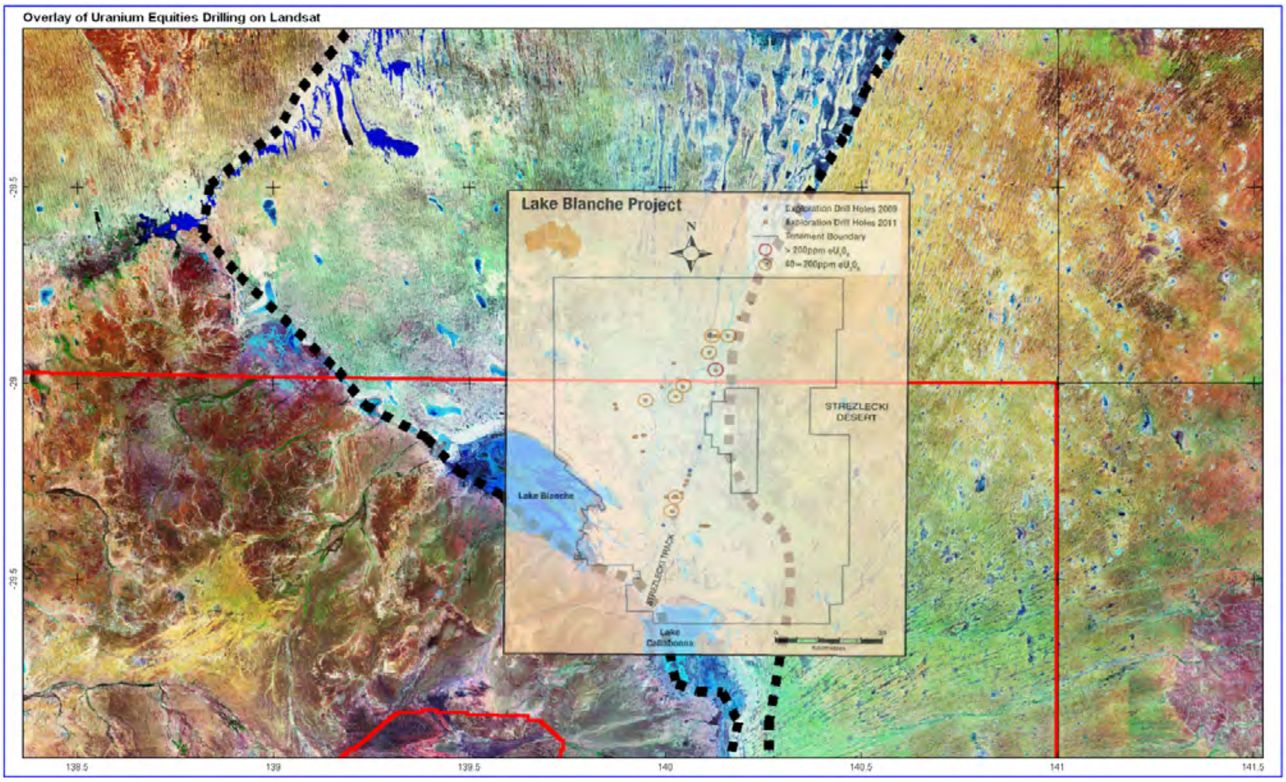


Figure 8. Semi-transparent overlay of the Uranium Equities map of the Lake Blanche Project on the Landsat image.

The Eyre Formation underlies the Recent sediments of the Strzelecki Depression and the fact that uranium has been located in a channel in the weathered surface is encouraging for exploration in areas held by SA Beach Sands. Many of the holes with elevated uranium lie along or near the existing Strzelecki Creek which runs down the eastern side of the Strzelecki Depression. It is probable that this creek has operated for a long period and may be responsible for the original incision in the Eyre Formation surface.

By comparison, the Cooper Creek runs down the western side of the Strzelecki Depression where the SA Beach Sands licences are located, so it is possible that similar incisions exist in the Eyre Formation beneath the exploration licences. The licences are located further away from the Broken Hill – Olary and Flinders Ranges source rocks, but it may still be possible for the uranium to migrate through the sediments if the gradients and geological conditions are favourable.

Figure 9 shows a 3D view of part of the image in Figure 8 draped over the terrain plus the electrical conductivity CDI sections. There is no obvious correlation between the holes that encountered uranium and the conductivity sections. The sections show the presence of saline groundwater, but little other geological contrast. We note that Uranium Equities refers to an earlier ground electromagnetic survey that helped them locate the buried channel. We do not know what instrument was used, but transient electromagnetic systems such as Terra TEM, SiroTEM and ProTEM would provide a higher degree of discrimation than the TEMPEST survey.

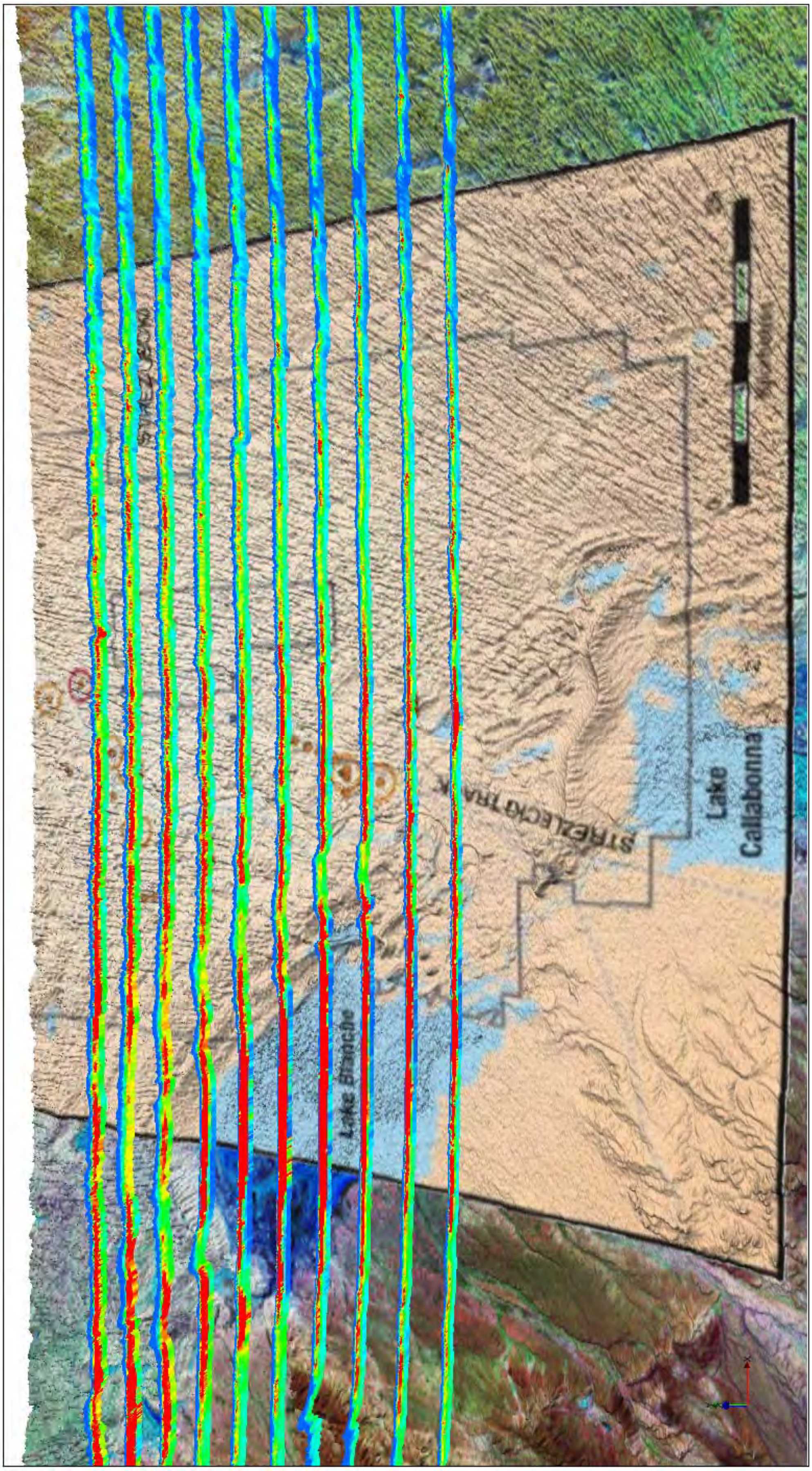


***Figure 9**. Rotated 3D north looking view of the conductivity CDI sections draped on the terrain showing a transparent overlay of the Uranium Equities Lake Blanche Drilling Program Map.*

Evaluation of Petroleum Logs

Extensive drilling for oil and gas has taken place in the Cooper Basin and geophysical logs were recorded at the time of drilling. These logs represent a valuable resource for analysis of the shallow part of the geological section.

Petroleum logs provided to SA Beach Sands by Energetica Exploration were evaluated to see if there are any gamma ray responses that could be indicative of the presence of uranium in the shallow part of the section. The logs were also evaluated for their suitability for providing information on the possible subdivision of the unconsolidated sediments.

Cooper Basin Petroleum Logs

Petroleum well information was downloaded from the PIRSA SARIG database and reduced to those relevant to the exploration objectives. The locations of these wells are shown in Figure 10.

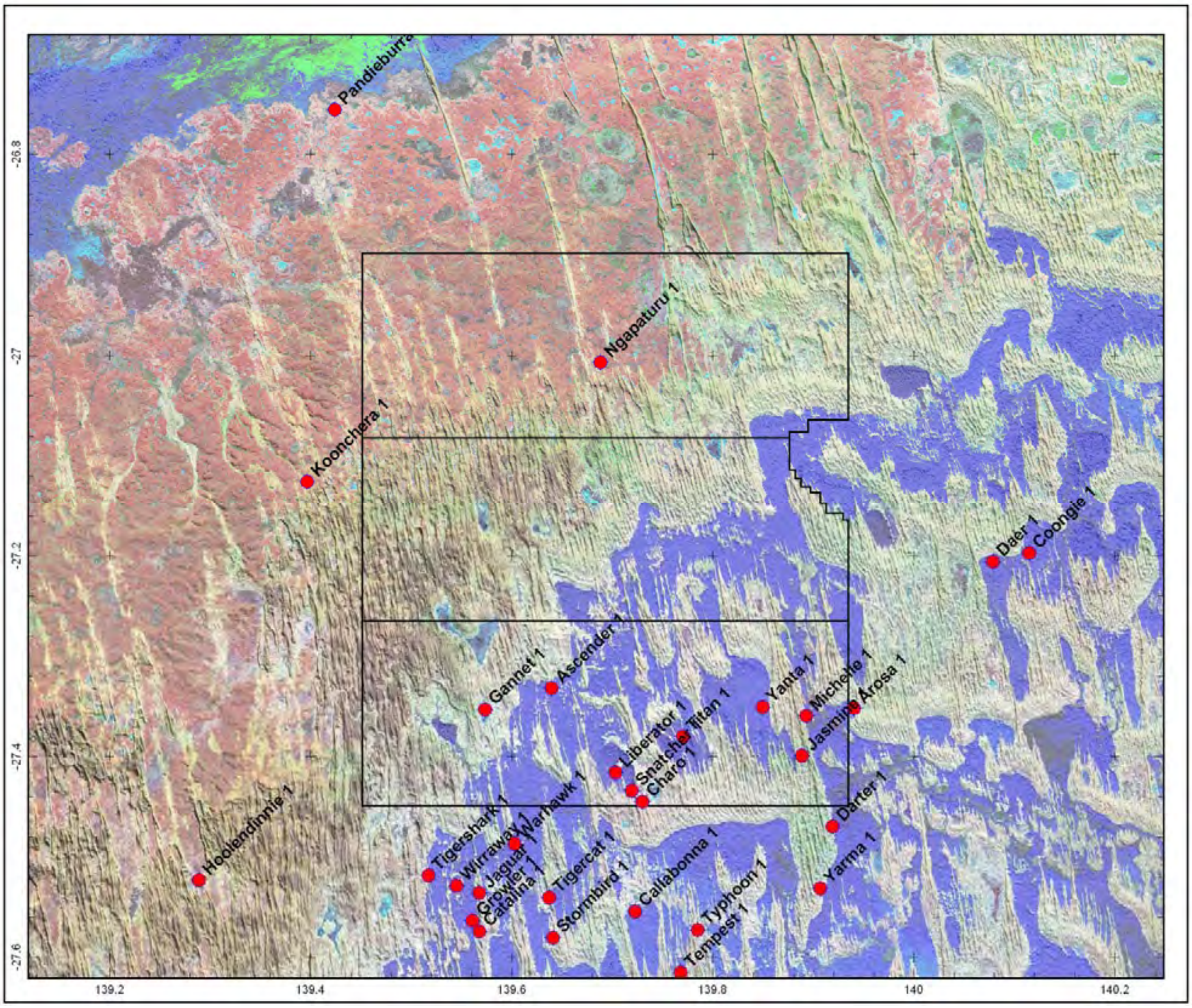


***Figure 10**. Location of petroleum wells in the vicinity of the exploration licences.*

Digital versions of the logs and some hardcopy version were used to analyse the gamma ray logs and a summary table of the results is presented in Table 1. Gamma logs were available for 14 of the wells, but only 6 showed slightly elevated gamma ray responses in the shallow part of the section. The responses are most likely associate with clays or shale rather than elevated uranium responses. Only minor information was shown in the logs regarding the sediments, but in some cases the full log suite may be helpful in future drilling operations.

Table 1. Petroleum Log Analysis Summary

Well Name	Log	Anom	Depth	Amplitude	Comment
Arosa 1	Y	Y	46m	80%	Caliper shows caving
Ascender 1	Y	N			
Brolga 1	N				
Callabonna 1	Y	Y	24m	60%	In sands just above clays
Charo 1	Y	N			
Coongie 1	N				
Daer 1	N				
Darter 1	Y	Y	69m	100%	Start of elevated natural gamma zone
Gannet 1	N				
Growler 1	Y	Y	80m	100%	10m in Eyre Formation claystone
Jasmine 1	Y	Y	38m	80%	20m Start of background elevated zone
Koonchera 1	Y	N			Very minor anomalies
Liberator 1	N				
Michelle 1	N				
Mingana 1	N				
Ngapaturu 1	N				
Pandieburra 1	Y				No gamma log (1963 well)
Snatcher 1	N				Not logged above 600m
Stormbird 1	Y				Not logged above 600m
Tempest 1	N				
Tigercat 1	N				
Tigershack 1	N				
Titan 1	Y	Y	46m	150%	20m wide zone (uncertain baseline)
Typhoon 1	N				
Warhawk 1	Y	N			Minor anomalies with clays
Wirraway 1	Y	N			Uniform background minor near well top.
Yarma 1	Y	N			Relatively constant background minor anom.
Yanta 1 *	Y	N			

Conclusions

The Frome Embayment TEMPEST airborne electromagnetic survey is an excellent resource for evaluating the potential of this method to future exploration in the exploration licences. Unfortunately, our analysis indicates that for equivalent environments present in the northern section of the airborne survey area, the method is likely to be of marginal value in the exploration for uranium. The Strzelecki Depression region is covered with salt pans and sand dunes and is believed to be dominated by saline ground water. The outcrop region of Eyre Formation Sediments may exhibit suitable contrast, but the probable deep weathering may make the sediments too conductive to see the required geological contrasts.

While there may be some success from an airborne TEMPEST survey, the high cost of covering the area at a reasonable line spacing is likely to be less effective than a systematic drilling program on the same budget. The recent success published by Uranium Equities suggests that a ground electromagnetic survey may offer more value than an airborne survey, but with limited information on the subsurface geological environment an initial drilling program is more likely to provide useful information about the potential for uranium exploration. A subsequent ground electromagnetic survey may help extend the geological knowledge at a lower cost.

The existing petroleum well data did not provide any direct evidence for uranium in the shallow part of the sequence, but some of the wells will provide useful geological information in future exploration.

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Near Surface Commodities Pty Ltd

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