JACARANDA MINERALS LTD
&
MINERALS AUSTRALIA PTY LTD

EPM15235, CANARY, BOULIA, QLD

FINAL REPORT

FOR THE PERIOD

2nd August 2007 to 12th October 2012

October 2012

Prepared for Jacaranda Minerals Ltd
& Minerals Australia Pty Ltd

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KEY WORDS

Toolebuc Formation, geological mapping, geochemical sampling, radiometric survey, air core, gamma logging

1. SUMMARY

EPM15235 as granted consists of 100 sub-blocks, an area of approximately 315.7 sq km. It was granted to Conarco Minerals Pty Ltd on 2nd August 2007 for a period of five years. In August 2009 44 sub blocks were relinquished reducing the area of EPM15235 to approximately 176.7 sq km.

In March 2008 Conarco entered into a joint venture, the Jacaranda Alliance JV, with Hancock Prospecting Pty Ltd (HPPL). The joint venture parties are Jacaranda Minerals Ltd (JML) owned by the principals of Conarco, and Minerals Australia Pty Ltd (MAPL) and subsidiary of HPPL. The joint venture is managed by Hancock Exploration Management Services Pty Ltd (HEMS) also a subsidiary of HPPL. Under the terms of the Jacaranda JV, ownership of the EPM was transferred to Jacaranda Minerals Ltd on 23 April 2008 and transfer 50% ownership to Minerals Australia Pty Ltd was completed on 8th September 2008.

In September, 2012, the Joint Venture partners agreed to surrender EPM15236.

EPM15235 is one of an original group of thirteen EPMs in the Boulia area held by Jacaranda Minerals Ltd and Minerals Australia Pty Ltd in which the exploration target is roll front type molybdenum-vanadium-uranium mineralisation in the Cretaceous Toolebuc Formation.

Investigations carried out by HEMS on behalf of the Jacaranda Alliance JV in 2007-08 involved:

- research of historical records
- research of previous Open File company exploration
- interpretation of GSQ/Geoscience Australia regional aerial radiometric survey data
- field ground scintillometer surveys to confirm regional radiometric data
- geological mapping of some sections of the Toolebuc Formation in the Boulia area
- detailed low level aerial radiometric survey at 80m line spacing and mean terrain clearance of 40m.

Investigations carried out by HEMS during 2008-09 included;

- conclusion of land access and heritage negotiations with the Pitta Pitta people
- assessment and interpretation of results of the detailed, low-level aerial and magnetic survey completed in 2007-08 which included approximately 100 km^2 of EPM15235.
- Planning of a shallow (30-50m depth) scout drilling programme to evaluate radiometric targets identified within the Toolebuc Formation.

Investigations carried out by HEMS during 2009-10 included;

- Completion of forty one (41) scout air core drill holes each of 30m total depth (total 1230 meters) to evaluate radiometric targets identified within the Toolebuc Formation.
- Down-hole gamma logging
- Analysis of samples using a Niton hand-held XRF spectrometer
- Submission of drill samples to ALS Chemex in Mt Isa for check analyses.

Investigations carried out by HEMS during 2010-11 included;

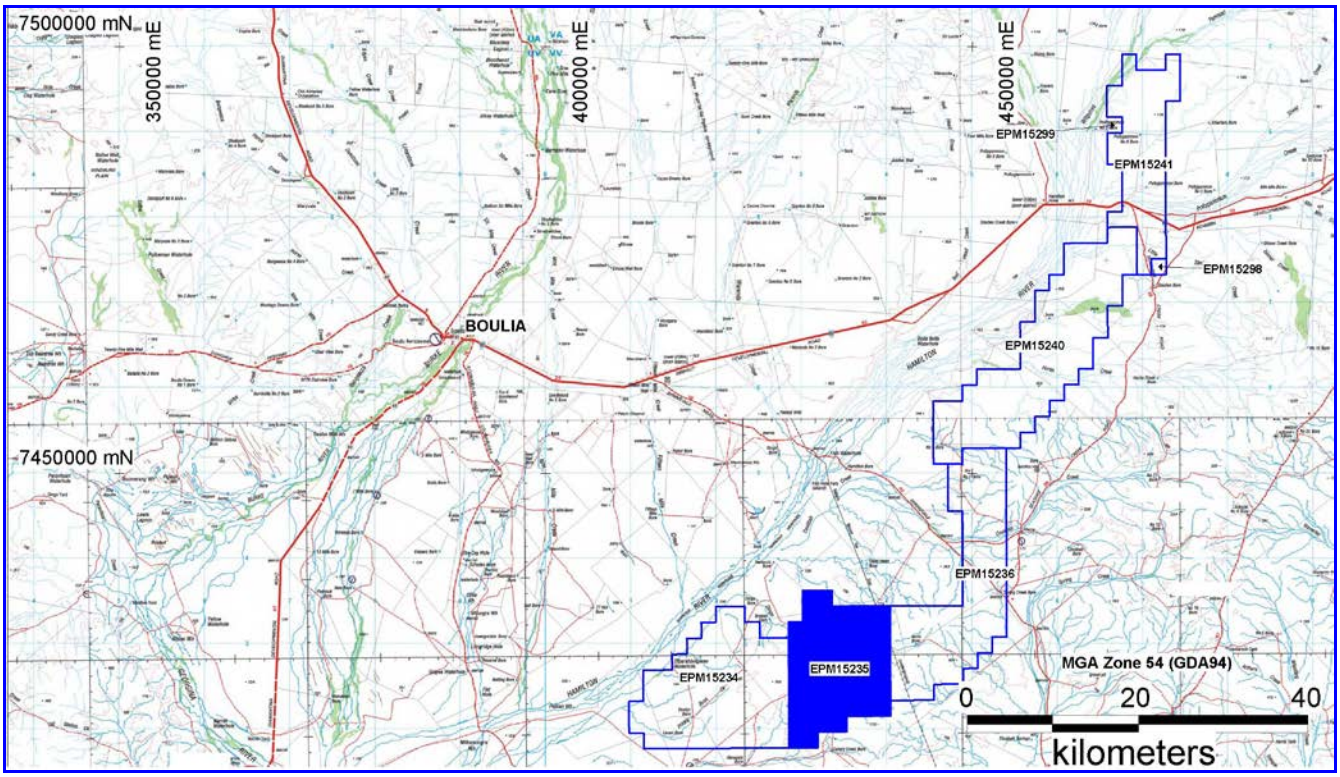
- Compilation of drill hole analytical and lithological logging database

Geological interpretation of drilling data in plan and cross section.

2. INTRODUCTION

EPM15235 is located approximately 50 km south east of Boulia in the Channel Country of south western Queensland (Figure 1).

Figure 1: Location map EPM15235



The EPM covers exposed lithologies of the Cretaceous Toolebuc Formation (Figure 2).The Jacaranda Alliance JV considers that the Cretaceous Toolebuc Formation in the Eromanga Basin has the potential to host very large size, low to medium grade molybdenum-uranium-vanadium deposits. This is supported by observations of zones of significantly anomalous airborne total count and uranium channel gamma-ray radioactivity over exposures of the Toolebuc Formation throughout the Eromanga Basin. The exploration model speculates that local foreland delta areas of palaeo-drainages which sourced material from the uranium and molybdenum rich Mount Isa-Cloncurry and Georgetown Orogens might contain large resources of low to medium grade uranium and molybdenum mineralisation.

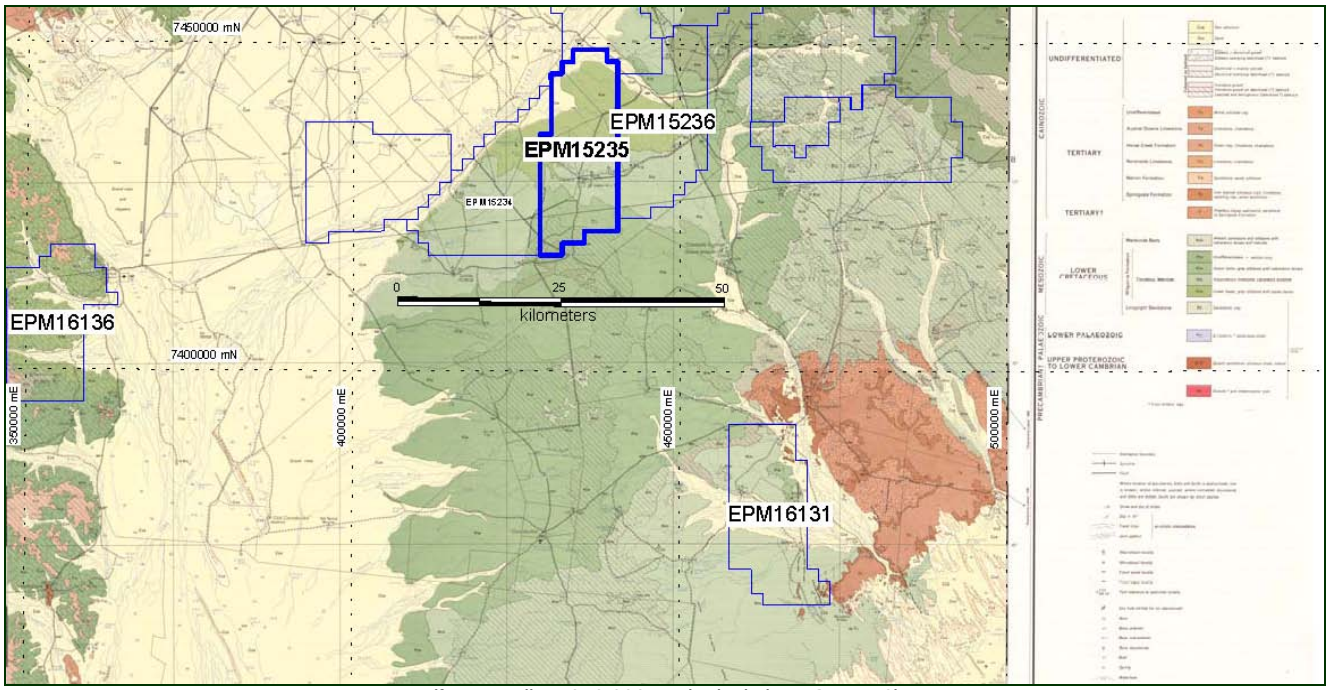
In September, 2012, following their relative lack of exploration success, the Joint Venture partners agreed to surrender EPM15236.

3. GEOLOGY

EPM15235 is located over outcropping Cretaceous Toolebuc Formation south east of Boulia (Figure 2). Lithologies in the area consist mainly of thinly bedded, fissile calcareous units, usually fossiliferous. There are also prominent outcrops of locally termed “moonstone” limestones which in sub-crop consist of very large (up to 1m diameter) spherical concretions. The Toolebuc is underlain

by the Wallumbilla Formation consisting of mudstones and siltstones. Dips in the area are 0-5°to the east and south east.

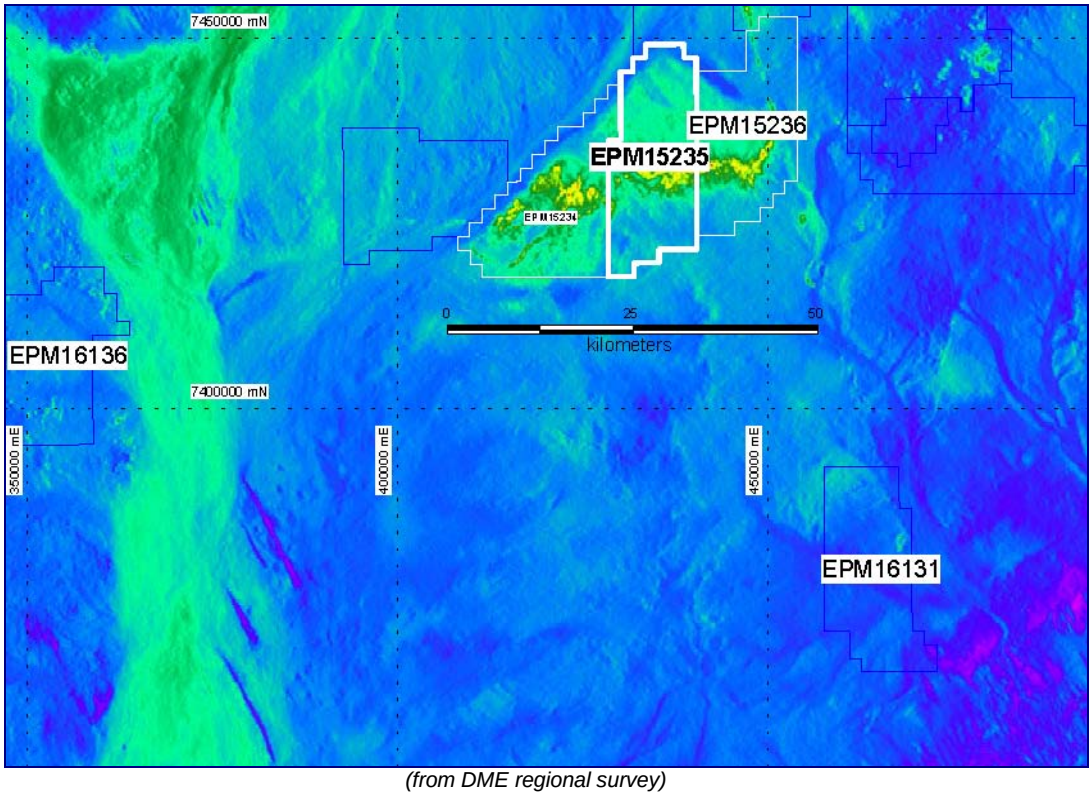
Figure 2: Geological map of the area of EPM15235



(from Boulia 1:250,000 geological sheet SF54-10)

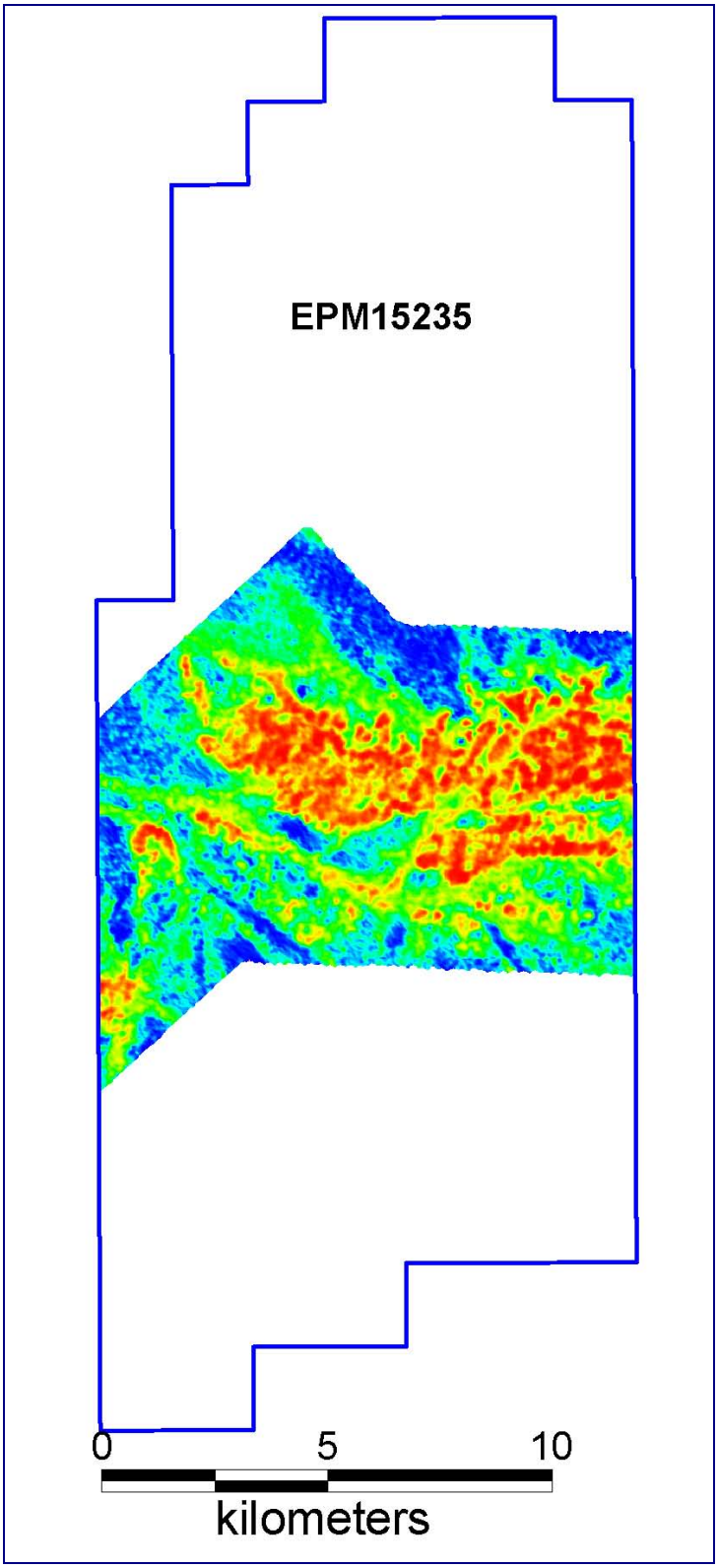
Regional radiometric survey data by the Department of Mines and Energy shows that the Toolebuc Formation is radiometrically anomalous in all its exposures in EPM15235 (Figure 3). An image of Jacaranda Alliance JV gridded low level radiometric data (uranium channel) is shown in Figure 4.

Figure 3: Total count radiometrics from DME regional survey



(from DME regional survey)

Figure 4: EPM15235 uranium channel from JV survey



4. EXPLORATION IN 2007-08

4.1 Geological mapping

Geological reconnaissance mapping was carried out over selected parts of Jacaranda Minerals' EPMs in the Boulia area. Outcropping lithologies observed during reconnaissance were limited to a variety of limestones and shales / mudstones described below using Jacaranda JV terminology;

- Flaggy Limestone
  - Grey-brown limestone, bedded and weathering to a flaggy habit, 5 – 20% red-brown fossil fragments, commonly with fossilised wood, usually coarsely to moderately crystalline, often with fibrous crystal growth perpendicular to bedding.
- Shelly Limestone
  - Grey limestone, poorly bedded, commonly showing dissolution weathering, 10 – 60% pale grey fossil shell fragments with occasional whole shells, rare fossilised wood, usually finely to moderately crystalline, occasionally with a powdery texture.
- Moonstone Limestone
  - Pale cream limestone, sometimes with pale pink, bedded, weathers to rounded, slightly squashed spheres known locally as "moonstones", occasional beds of shell fragments to whole shells, finely crystalline to powdery.
- Blocky Limestone
  - Pale cream to brown limestone, blocky with some evidence of weathering similarly to the moonstone limestone, however with no bedding or fossils evident, finely crystalline to powdery.
- Shale / Mudstone
  - Chocolate to dark brown shale / mudstone, subcrops very poorly, micaceous in some areas
- Gypsiferous Shale / Mudstone
  - Chocolate to dark brown shale / mudstone, subcrops very poorly, micaceous in some areas, abundant coarse gypsum crystals occur.

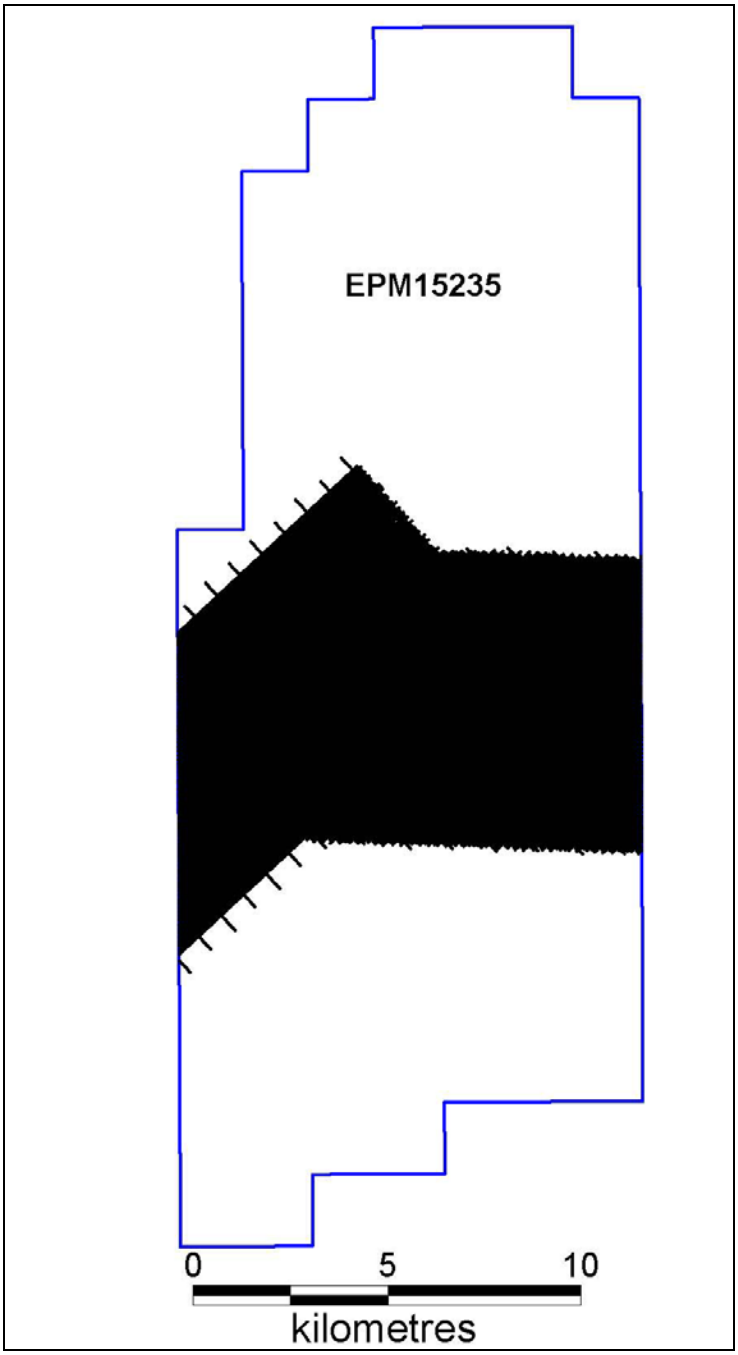
Geological reconnaissance in part of EPM 15235 identified two distinct calcareous units, Moonstone Limestone and Shelley Limestone in the area with some subcrop of shale/mudstone units which do not form coherent outcrops for mapping purposes. No detailed geological mapping has been done in EPM15235.

4.2 Aerial geophysical survey

During July-August 2008 HEMS conducted a detailed aerial radiometric and magnetic survey of the outcropping Toolebuc Formation in the combined Jacaranda JV tenements in the Boulia area. The location of the Toolebuc Formation outcrop was interpreted using the existing DME regional radiometric survey data.

The survey flight lines were oriented parallel to the general strike of the Toolebuc Formation, with lines spaced at 80m intervals across strike and with a mean ground clearance of 40 meters. A total of approximately 9000 line km was surveyed. The layout of flight lines in EPM15235 is shown in Figure 4.

Figure 5: Radiometric survey flight lines EPM15235



5. EXPLORATION IN 2008-09

5.1 Aerial geophysical survey

The processed results of the aerial geophysical survey completed during 2007-08 were received and assessed. This data is included in electronic format with the previous annual report as text files *magnetic survey data 15235.txt* and *radiometric survey data 15235.txt.*

The geophysical survey data confirms that the Toolebuc Formation in the Boulia area contains anomalous concentrations of uranium throughout the extent of its outcrop (see Figure 4 above). The data indicates that within EPM15235 there are multiple (possibly three) separate stratigraphic horizons in the Toolebuc with anomalous uranium content. The thickest horizon is approximately 7-10m thick. Cross sectional interpretation suggests that the Toolebuc Formation in EPM15235 generally dips to the south at approximately 0.5-1°.

5.2 Geological reconnaissance

HEMS geologists not familiar with the Jacaranda Alliance JV tenements in the Boulia and Richmond areas conducted a four day geological reconnaissance of the two areas during September 2008.

5.3 Planning of drilling programme

Based on the results of the aerial geophysical survey and geological field work since 2007-08 a scout drilling programme was designed to investigate the near surface and shallow down-dip occurrences of the Toolebuc Formation. The programme includes a total of approximately 10,000m of air core drilling in the JV Boulia EPMs.

Due to long delays in reaching agreement with the Native Title claimants over the area concerning the conduct of heritage surveys the planned drill programme was not started in 2008-09.

6. EXPORATION IN 2009-10

6.1 Air core drilling programme

During May-August 2010 Hancock Exploration Management Services completed an air core drilling programme in EPMs15234, 15235, 15236, 15240, 15241, 15298 and 15299. A total of 413 air core holes were drilled for 12,400 meters.

Forty one (41) air core holes were drilled in EPM15235 (total 1230 meters). The location of the drill holes in shown in Figure 6 and the drill hole coordinates are listed in the electronic file *EPM15235_082011_1_location*.

Holes were logged where possible using an Auslog gamma probe. Gamma logging was sometimes precluded due to frequent unreliability of the logging equipment and also due to some holes collapsing when rods were pulled. All samples were analysed using a hand-held Niton XRF spectrometer. Check samples were analysed by ALS Chemex in Mt Isa to provide calibration factors for correcting the Niton XRF readings.

A typical down-hole gamma log trace of the Toolebuc Formation is shown in Figure 7. Gamma logging clearly identifies the radiometrically anomalous section of the Toolebuc Formation.

Figure 6: Location of air core drill holes in EPM15235 (uranium radiometric image)

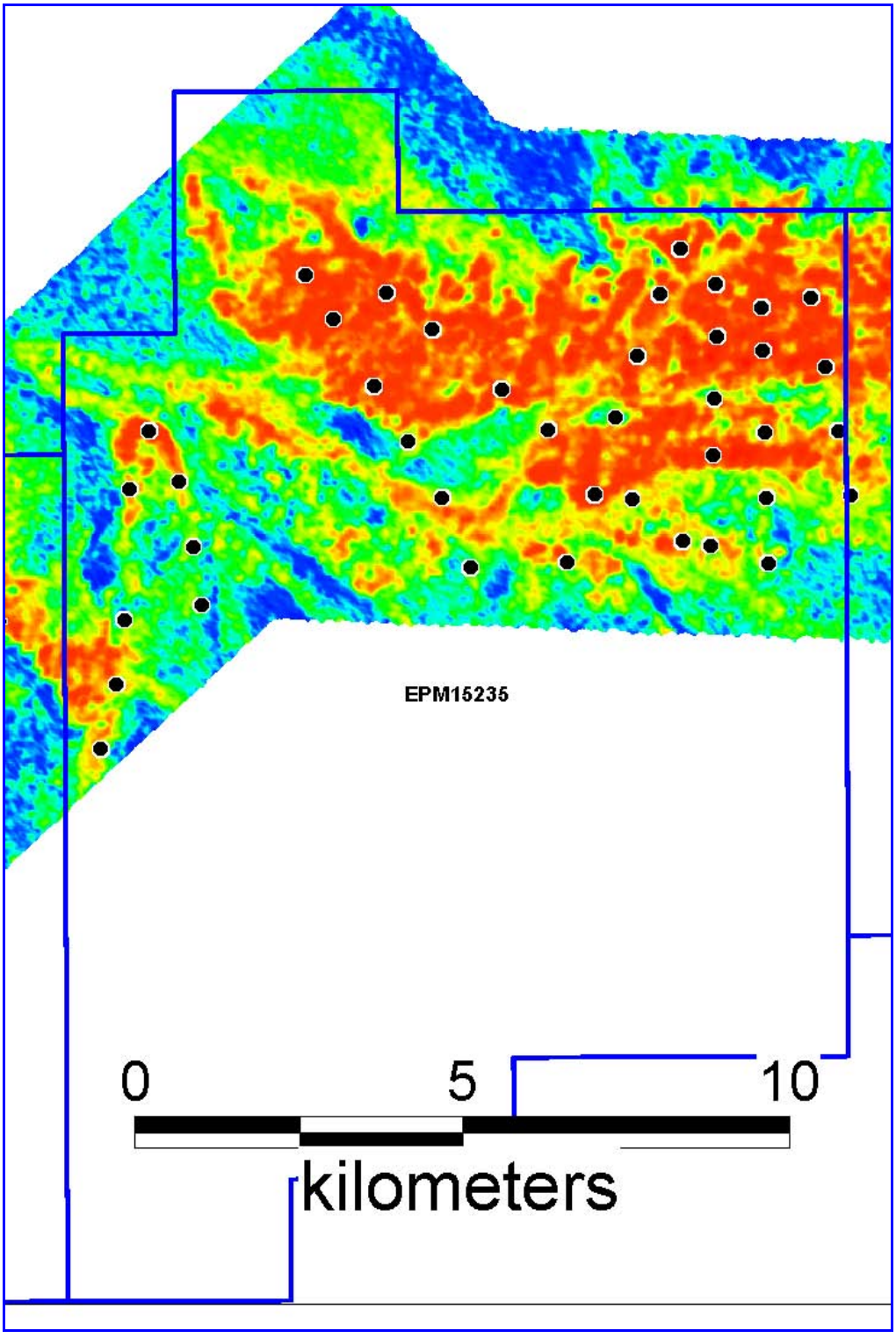
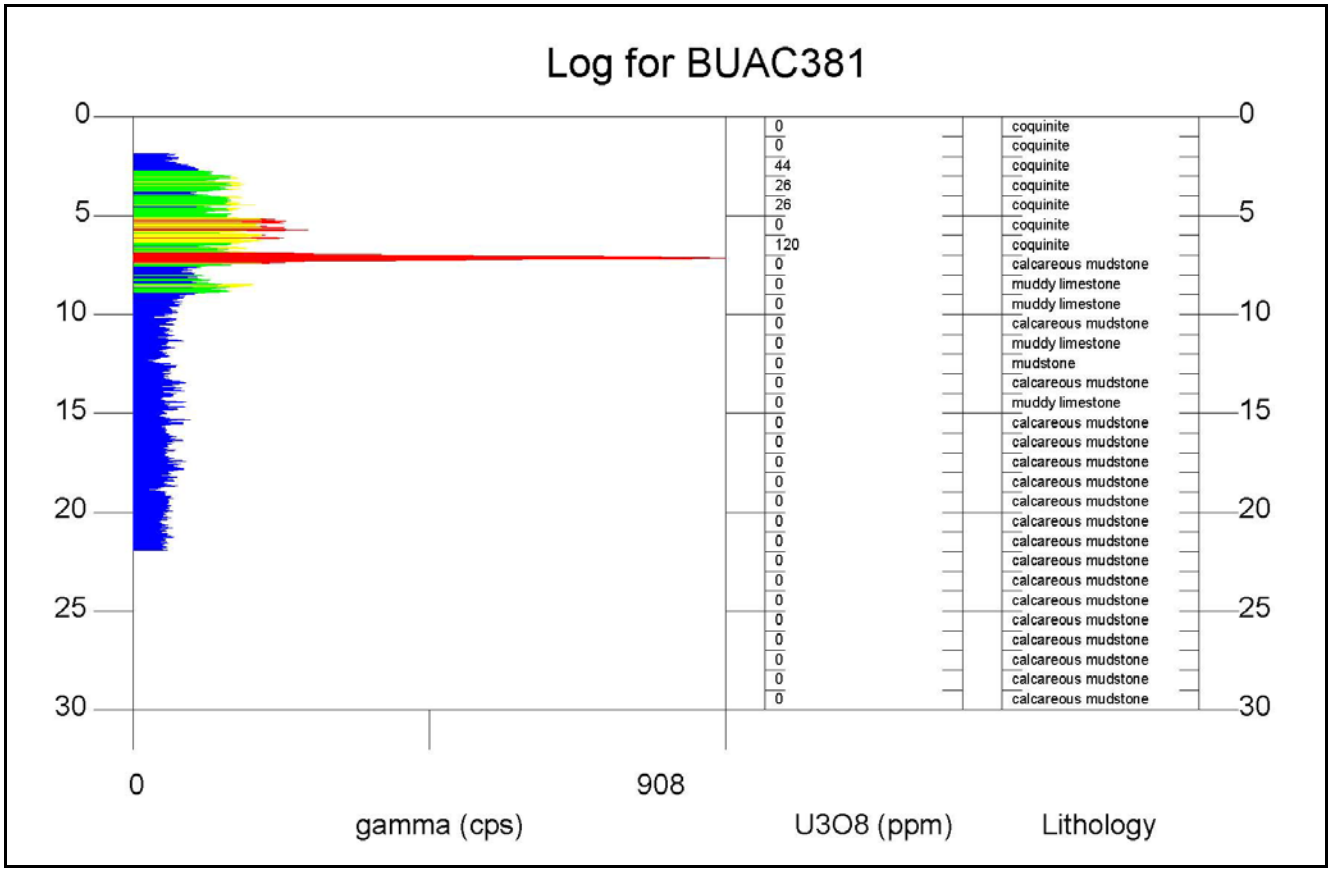


Figure 7: Typical down-hole gamma log through the Toolebuc Formation



7. EXPLORATION IN 2010-2011

7.1 Air core drilling data compilation 2010-2011

All analytical, gamma logging and lithological data for air core holes drilled in 2009-10 was compiled and validated. Geological interpretation was done both on cross-sections and in plan.

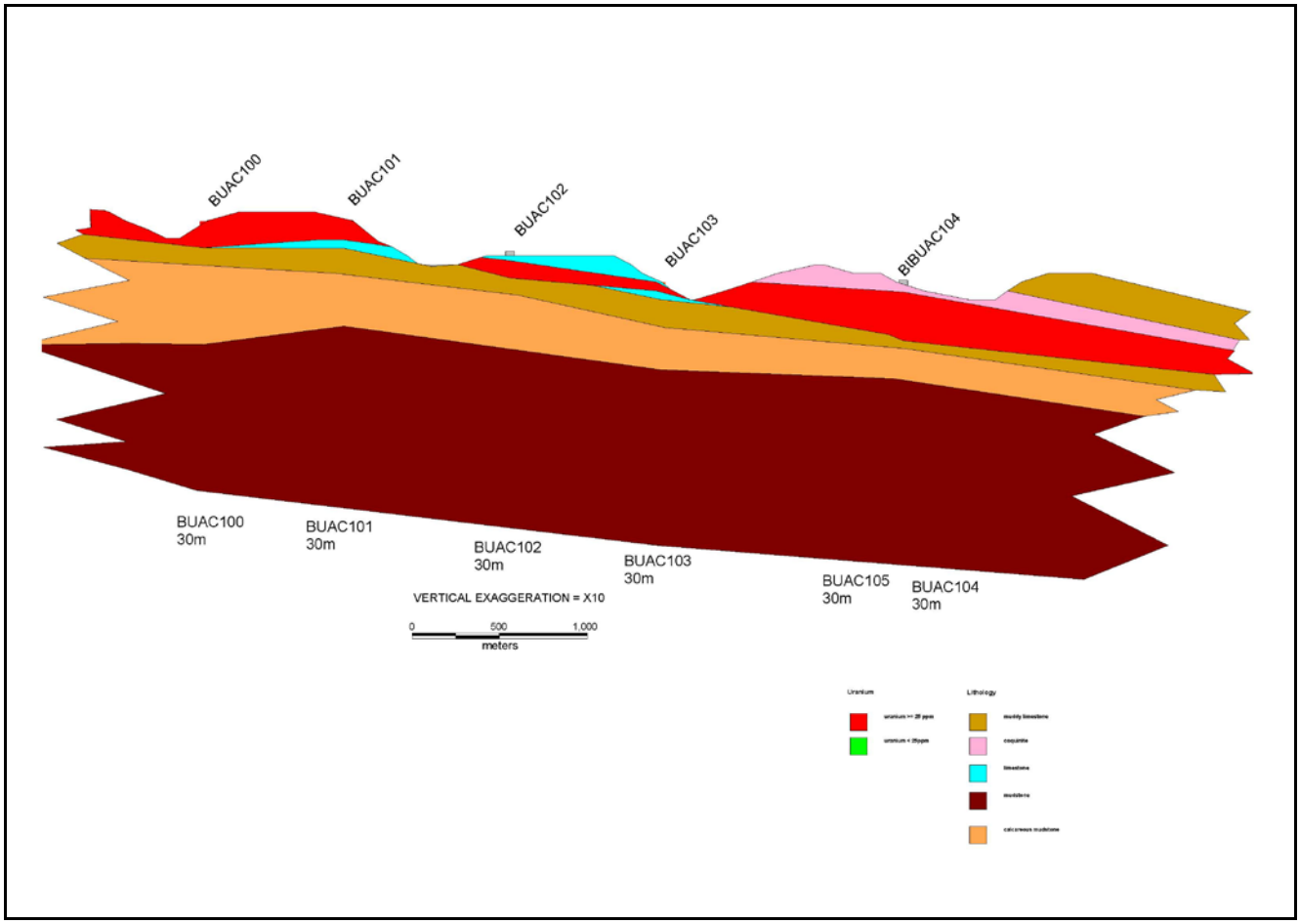
The analytical and lithological data was compiled into a single data set. This is provided electronically in the file *EPM15235_082011_2_analytical.txt*. All XRF analyses for U, Cu, Pb, Zn and V have been re-calculated using check samples analysed by ALS to provide the correction factors.

The locations of drill holes are provided electronically in the file *EPM15235_082011_1_location*.txt.

Available down-hole gamma logger data is provided electronically in the file *EPM15235_082011_3_gamma.txt*.

A cross-sectional interpretation of the drilling data is shown in Figure 8.

Figure 8: Interpreted NW-SE geological cross section - EPM15235



8. CONCLUSIONS

Air core drilling of forty-one holes in EPM15235 has shown the following:

- The Toolebuc Formation occurs at a depth of zero to four meters below surface.
- The formation is on average nine meters thick but varies from two to twenty-two meters. It generally dips to the southeast at less than 0.5 degrees.
- Uranium, vanadium, molybdenum and base metals generally all show elevated values within the Toolebuc Formation. Uranium tends to be concentrated within limestone and coquinite units near the base of the formation near the contact with underlying mudstones.
- The average grade of uranium in drill holes is low, approximately 44 ppm U_3O_8.
- The maximum grade of uranium in drill holes in EPM15235 is 285 ppm U_3O_8 over a one-meter interval.
- The apparent lack of any structural variability and the very flat dips of the Toolebuc Formation in EPM15235 indicate that conditions are probably not conducive to the formation of roll-front type mineralisation.
- It is recommended to surrender EPM15236.