



# **KARUMBA PROJECT ANNUAL/FINAL MINERAL EXPLORATION REPORT**

EPM 18884

29 NOVEMBER 2014 – 28 NOVEMBER 2014

REF 2014/60

LICENSEE: AREVA RESOURCES AUSTRALIA PTY LTD

OPERATOR: AREVA RESOURCES AUSTRALIA PTY LTD

AUGUST 2014

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## SUMMARY

<b>Project Name:</b>	Karumba Project
<b>Exploration Licence:</b>	EPM 18884
<b>Holder/Operator:</b>	Areva Resources Australia Pty Ltd 68 Greenhill Road WAYVILLE SA 5034
<b>Report Type:</b>	Annual/Final Report
<b>Reporting Period:</b>	29 November 2013 – 28 November 2014
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<b>Date of Report:</b>	05 <sup>th</sup> August 2014
<b>Sheet Name (250k):</b>	Red River (SE54-08), Georgetown (SE54-12)
<b>Sheet Name (100k):</b>	Strathmore (7462), Gilbert River (7461)
<b>Target Commodity:</b>	Uranium

## EXECUTIVE SUMMARY

- Location:** EPM 18884 is part of the Karumba Project, and is located 90km north west of Georgetown, North Queensland.
- Geology:** The area is located in the Carpentaria Basin, and consists of Jurassic to Cenozoic sediments. Apart from minor uplift and subsidence, the region has been geologically stable since the Late Jurassic. Most of the area is covered by Mesozoic to Cenozoic sediments of the Carpentaria and Karumba Basins.
- The target sandstone is the fluvial/deltaic Lower Cretaceous Gilbert River Formation (GRF) of the Carpentaria Basin.
- Exploration Rationale:** AREVA Resources Australia Pty Ltd (AREVA) is exploring the Carpentaria Basin for sandstone hosted uranium deposits. The target horizon has been defined as the fluvatile member of the GRF.
- Completed Work:** AREVA undertook a regional and local historical review on tenement EPM 18884.
- During the past year field reconnaissance was conducted for road access identification and landowner meeting.
- In 2014 AREVA drilled one mud rotary/ diamond hole for a total of 163.5.5m.
- Results:** The drilling indicated the Gilbert River Formation is non-prospective over EPM 18884.
- Conclusions:** The tenement holds no potential to host uranium mineralisation within the Gilbert River Formation.
- Tenement is proposed for surrender.**

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## DIGITAL DATA ACCOMPANYING THIS REPORT

### DOWN-HOLE GEOPHYSICS

FILE NAME	DESCRIPTION	FILE TYPE	FILE SIZE
LAS	Down hole probing results	ZIP	122

### DRILLING

FILE NAME	DESCRIPTION	FILE TYPE	FILE SIZE (KB)
EPM18884_Down_Hole_Geology	Geological logging for drill hole	TXT	112
Geology_Codes	Geological logging codes	PDF	67
KASO_0038_1	Geological log	PDF	310

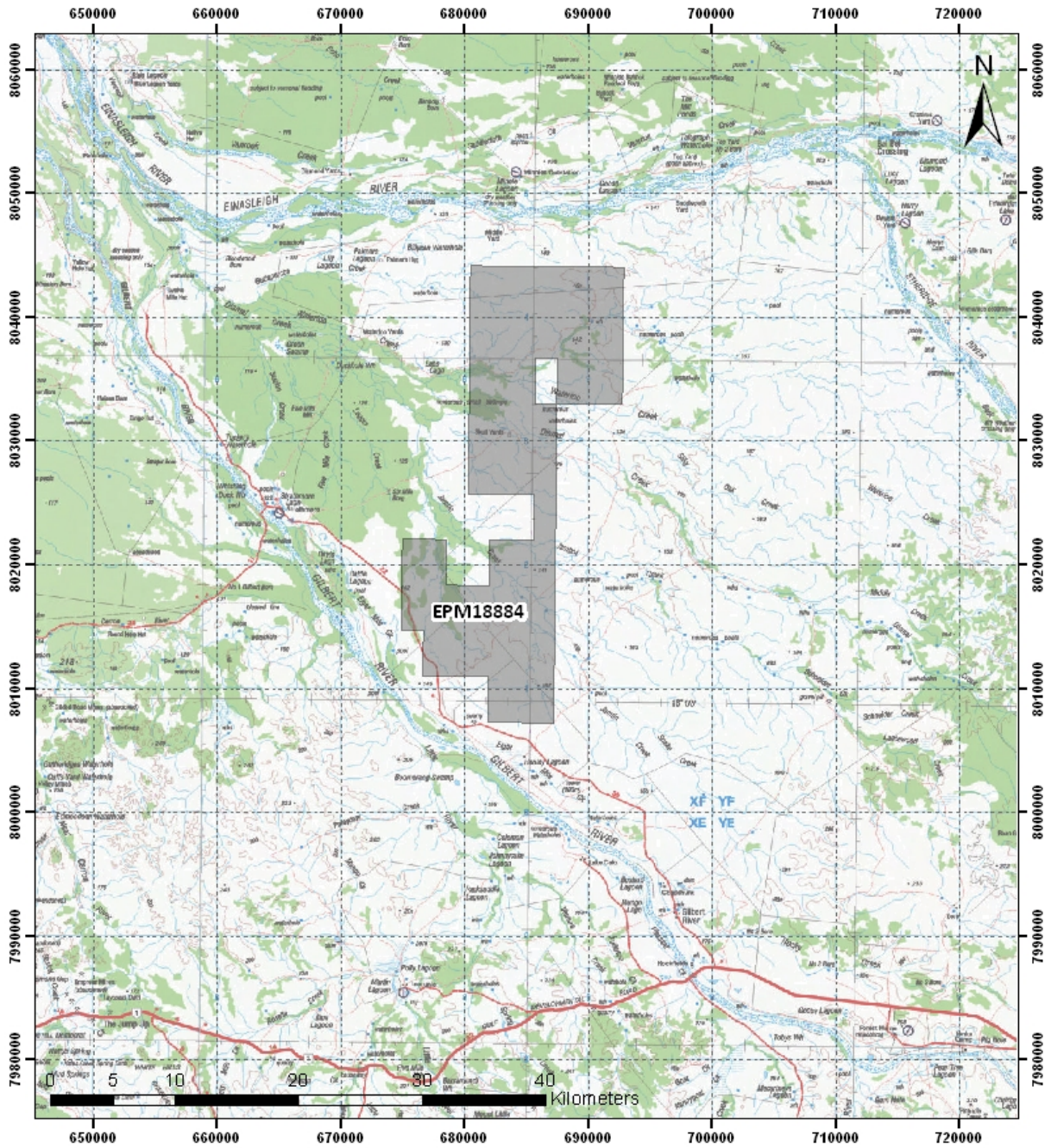
## **SUMMARY OF ACTIVITIES**

AREVA Resources Australia is targeting Uranium roll-front deposit in the Cretaceous Gilbert River Formation sandstones.

During the reporting period, a historical review was conducted, along with a field reconnaissance to identify road access and meet landowners.

Further to this, AREVA drilled one mud rotary hole/ diamond hole to a depth of 163.5m.





**Tenement EPM 18884  
Location Map**

Date: 27 November 2013

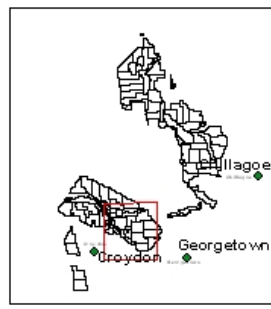
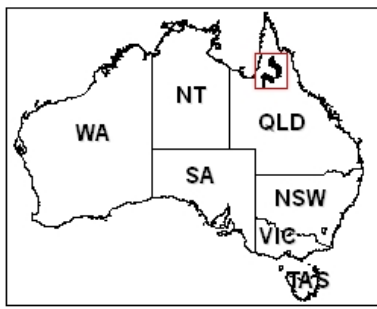


Figure 1: QLD - Karumba Project - Location Map.

## 1. INTRODUCTION

### 1.1. LOCATION AND ACCESS

EPM 18884 is located 300 km south west of Cairns and 90km north-west of Georgetown in the Carpentaria Basin in northern Queensland (Figure 1).

Access to the tenement from Cairns is south-west via the Kennedy Highway and Gulf Developmental Roads. Numerous pastoral tracks access the interior of the tenement.

The climate of the tenement area is dry tropical with seasonal rainfall. Over 80% of total rain falls between Mid-November and March and mean annual rainfall is around 800 mm in the study area. Most rivers are seasonal but the major rivers maintain some flow during the dry season. Temperatures are relatively high, between 15 and 35°C. Eucalyptus trees are mainly present within the area and grass-covered swamps are developed on clay soils.

### 1.2. TENEMENT DETAILS

Table 1: QLD - Karumba Project - Tenement Summary

TENEMENT	DATE GRANTED	AREA (KM <sup>2</sup> )	NO OF SUB BLOCKS	EXPENDITURE COMMITMENT (ANNUAL)
EPM 18884	29/11/12	325.91	100	See attached

Table 2: QLD - Karumba Project - Tenement block details

<u>BIM</u>	<u>Block</u>	<u>Sub-blocks</u>
NORM	1497	H J K N O P S T U X Y Z
NORM	1498	F G H J L M N O Q R S T V W X Y
NORM	1569	C D E H J K N O P S T U X Y Z
NORM	1570	B C D G H J L Q V
NORM	1640	U Z
NORM	1641	C D E Q T U V Y Z
NORM	1642	A F L Q V
NORM	1712	E K
NORM	1713	A B C D E F G H J K L M N O P Q R S T U Y Z
NORM	1714	A F L Q V
NORM	1785	D E
NORM	1786	A

Total: 100 Sub-Blocks

### 1.3. EXPLORATION RATIONALE AND EXPLORATION METHODS

Following project generation work completed by AREVA Resources Australia in 2010, the Carpentaria Basin was identified as a potential host to sedimentary-hosted roll front uranium deposits. The Carpentaria Basin holds a lot of critical qualities required for the creation of such type of uranium deposit.

The Carpentaria basin is filled with alternating sandstone and clay units, it is known for the presence of regional oil and gas field and Uranium rich basement (with known mineralisation) is neighbouring most part of this (Jaireth and al., 2008). Therefore, the Carpentaria basin appears to hold a good pedigree for roll front uranium deposits.

The uranium rich basement hosts numerous uranium occurrences within the Georgetown Inlier (Maureen).

Initially the entire GRF was targeted for uranium (McKay, 2001), but historical data analysis and core library reviews led to focus on the Lower Yappar Member as the best reservoir and trap. Previous exploration has demonstrated the presence of REDOX contrast and potential for uranium mineralisation in the Yappar Member (Davies, 1979).

Work completed during the reporting period consisted of a field reconnaissance, one drill hole and a review of historical drilling.

Table 3: QLD - Karumba Project - Drilling activity

ACTIVITY	DETAILS	TENEMENT
Drilling	1 mud rotary/diamond drill hole totalling 163.5m	EPM 18884

### 1.4. HISTORICAL EXPLORATION

#### 1.4.1. Regional Historical Exploration

Historical uranium exploration within the Karumba Basin occurred primarily during the mid to late 1970's. The majority of this work was completed in the Eden Vale region, southward of the Karumba Project area (Table 4). Only stratigraphic BMR and GSQ drilling, or base metal and gold exploration drilling are located in the vicinity of the working area.

A majority of the Karumba Basin remains untested, with most historical uranium exploration focused downstream from the Edenvale deposit (Esso: Graveson, 1973); a small basement hosted uranium deposit. Australia and New Zealand Exploration located a REDOX front within a north east trending paleochannel with anomalies up to 8 times background (Davies, 1979).

Attempts by exploration companies were unable to continually replicate results, indicating mineralisation was erratic and non-continuous. It was determined that further exploration was not feasible and the tenements were relinquished.

Table 4: QLD - Karumba Project - Historical regional uranium and gold or base metals exploration

COMPANY	YEAR	ACTIVITY	COMMENT
Eso Australia Ltd	1973	Uranium Exploration	<ul style="list-style-type: none"> <li>• CR4612 (Graveson, 1973): limit of Yappar Member in the GRF was not obvious, and sediments were oxidised (14 drill holes).</li> <li>• CR4613: in Fiery Creek area, Limit of Yappar Member in the GRF was not obvious, and sediments were oxidised (15 drill holes).</li> <li>• CR4651: in Turtle Creek area, Limit of Yappar Member in the GRF was not obvious, and sediments were oxidised with minor gamma anomalies (6 drill holes).</li> </ul>
Australia and New Zealand Exploration Company	1979	Uranium Exploration	CR7607 (Davies, 1979): in Eden Vale area, identification of Yappar Member paleochannel with REDOX front but no uranium associated (51 drill holes)
North Mining Ltd	1994	Gold and Copper Exploration	<ul style="list-style-type: none"> <li>• CR26209 (McInnes, 1994): northward of Blackdown area, limit of Yappar Member in the GRF was not obvious, and sediments were reduced (4 drill holes).</li> </ul>
Cyprus Gold Australia	1996	Base metals and Gold Exploration	<ul style="list-style-type: none"> <li>• CR28622 (Wilkins, 1996): northward of Blackdown area, limit of Yappar Member in the GRF was not obvious, and sediments were reduced (5 drill holes).</li> </ul>

#### 1.4.2. Local Historical Exploration

No historical exploration has been undertaken on the tenement.

## 2. GEOLOGY

### 2.1. REGIONAL GEOLOGY

The Carpentaria and Karumba Basins cover parts of northern Queensland and the Northern Territory, extending an area of 560,000 km<sup>2</sup>. The Carpentaria Basin is Middle Jurassic to Late Cretaceous in age and divided into both onshore and offshore components. AREVA's tenements are located within the onshore component located in North Queensland.

The Carpentaria Basin is bounded to the east by the Paleozoic and Proterozoic Coen, Yambo and Georgetown Inliers (Figure 2). The western part is delimited by the Proterozoic Mount Isa Inlier and the McArthur Basin. The Eromanga Basin flanks the south part of these basins and the northern boundary is defined by latitude 11°S (Doutch, 1976). Sediments overlie a cratonic basement of Proterozoic and Paleozoic rocks of the inliers outcropping on edges of the basin. The Pascoe River Basin underlies the northern part of the Carpentaria Basin.

The central part of the onshore Carpentaria Basin is unconformably overlain by the Cainozoic Karumba Basin. These basins form a shallow oval depression that is around 1,000 meters thick in the onshore centre (Passmore, 1979; Bain and al., 1997). Sedimentation break of 80 Ma occurred between last deposits of the Carpentaria Basin and first deposition of the Karumba Basin (Smart and al., 1980).



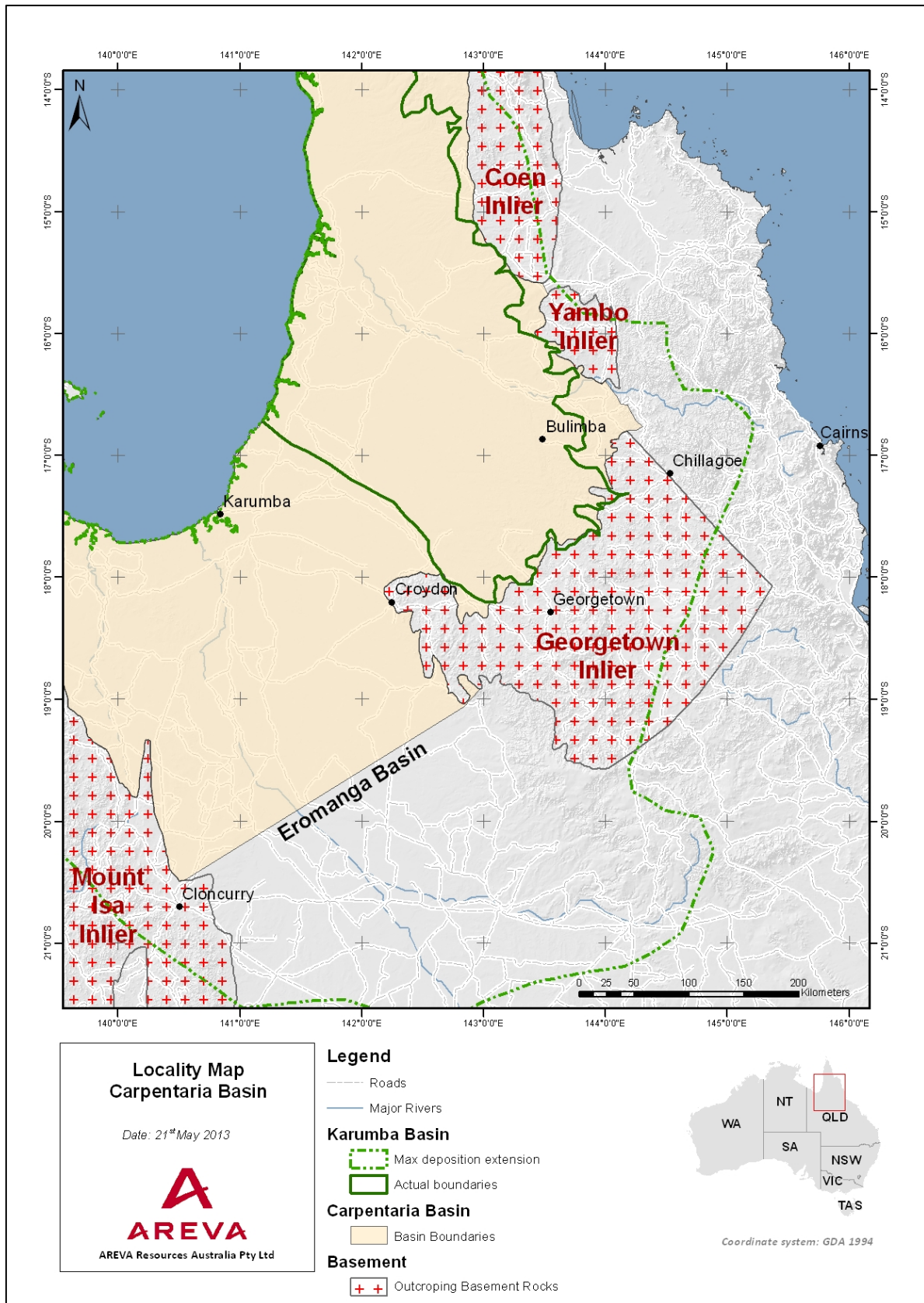


Figure 2: QLD - Karumba Project - Regional Geological Map.

## 2.2. STRATIGRAPHY

Ground surface geology of the border of the Carpentaria Basin is constituted by Carpentaria the following units, with from surface to basement (Figure 3):

- Quaternary alluvium, 0 to 20 m thick of sand, gravel to conglomerate;
- Late Cretaceous to Tertiary Karumba units:
  - Wayaaba Formation, 0 to 100 m thick of red claystone, sand and sandstone;
  - Bulimba Formation, 0 to 150 m thick of red sand, gravel and conglomerate;
- Cretaceous units:
  - Wallumbilla Formation, 0 to 200 m thick of marine shales;
  - Gilbert River Formation (GRF), 0 to 100 m thick of fluvial to shallow marine sandstones:
    - Upper Member: Coffin-Hill Member (0 to 70 m thick) is deltaic to marine, with shales and sands to sandstones, and characterized by glauconite;
    - Lower Member: Yappar Member (0 to 30 m) is fluvial to deltaic or lagoon, with sandstones.

The regional dip is approximately 0.05° to the NW. The basin tectonics are not well constrained; only the NW-SE trend of the Gilbert – Mitchell Trough influencing the shape of the basin limits.

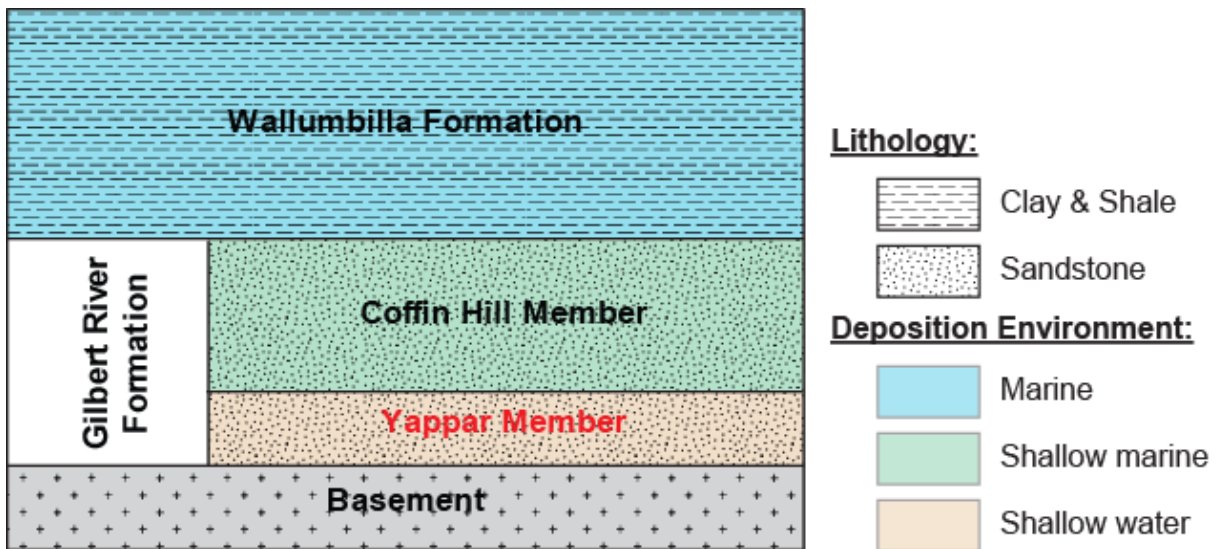


Figure 3: QLD – Karumba Project - Regional Cretaceous Lithostratigraphic log (Carpentaria Basin).

### 3. WORK COMPLETED DURING REPORTING PERIOD

Work completed during the reporting period consisted of one drill hole, desktop studies and reviews of historical drilling, along with a field reconnaissance visit.

#### 3.1. FIELD RECONNAISSANCE

Field visit included a reconnaissance of access to EPM and meeting with landowners.

#### 3.2. DRILLING

Drilling commenced on 16/06/2014 and terminated on 20/06/2014 (Table 5)

One hole was drilled using mud rotary and core techniques for a total of 163.5m (Table 5 and Figure 4). Drilling conditions were tough so drilling alternated between mud rotary and core. The drilling company was AED (Associated Exploration Drillers). Reduced Yappar was intersected.

The core is being stored while all cuttings from the hole have been disposed of in the water sumps used for drilling, along with all holes being cemented from the maximum depth to the top.

Table 5 : QLD - Karumba Project – Collar information

TENEMENT NUMBER	DRILL HOLE NUMBER	DRILL METHOD	DATE DRILLED		HOLE DEPTH (m)	EASTING	NORTHING	ZONE	DATUM	GEOPHYSICAL LOGS
			START	END						
EPM 18884	KASO_0038_1	MUD ROTARY	16/6/14	16/6/14	0-62.8	683000	8035419	54	GDA94	DEVIATION CALIPER RESISTIVITY INDUCTION GAMMA SPONTANEOUS- POTENTIAL
		DIAMOND	16/6/14	17/6/14	62.8- 67.6					
		MUD ROTARY	17/6/14	19/6/14	67.6- 125.2					
		DIAMOND	19/6/14	20/6/14	125.5- 163.5					

#### 3.2.1. Mineralisation

No significant anomaly was encountered.



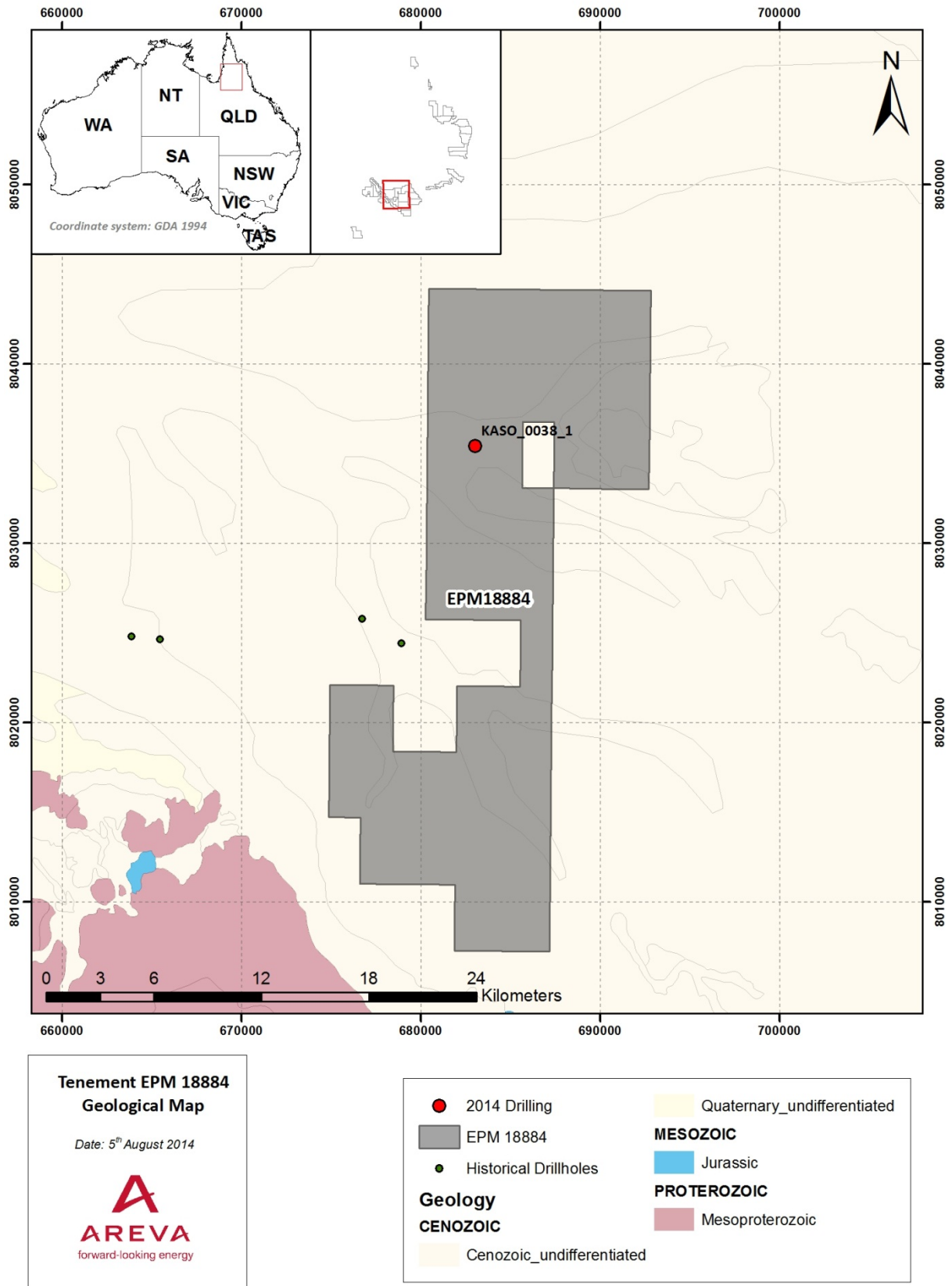


Figure 4: QLD – Karumba Project - Geological map of EPM (Queensland Geology 1:1,000,000)

## **4. CONCLUSIONS**

Results of this work determined EPM 18884 is not prospective and therefore AREVA Resources Australia applied for surrender.

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- Wilkins, N. (1996). EPM 10851 and EPM 10806 Report to August 1996. Cyprus Gold Australia.

## APPENDIX

1. Drilling Logs
  - a. KASO\_0038\_1
2. LAS Files for probing data
  - a. KASO\_0038\_1