



## **ALLAMBER PROJECT**

### **EL 32418 Partial Final Report for the Period 22/04/2021 to 21/04/2023**

**Tenure Holder:** Trafalgar Resources Pty Ltd  
**Project Operator:** Kingsland Minerals Ltd  
**Commodity:** Uranium, Copper, Graphite  
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**Date:** 18/05/2022  
**Mapsheet:** 1:250,000 Pine Creek (SD5208)

<b>Authority</b>	<b>Grant Date</b>	<b>Expiry Date</b>
EL 32418	22/04/2021	21/04/2027

**Distribution:** NTGS  
Kingsland Minerals Pty Ltd

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## ABSTRACT

Kingsland’s Allamber Project consists of Exploration Licences (EL) 32152, 31960 and 32418 and is located approximately 175 km south-east of Darwin and 37 km north-east of Pine Creek.

The Allamber Project lies within the Archaean to Palaeoproterozoic Pine Creek Orogen (PCO), one of the major mineral provinces of Australia. The PCO is a deformed and metamorphosed sedimentary basin up to 14 km thick covering an area of approximately 66,000 km<sup>2</sup>. It is host to significant mineral

resources of gold, uranium and platinum group metals, as well as substantial base metals, silver, iron and tin-tantalum mineralisation with mining and exploration occurring in the region since the early 1870's.

Exploration was somewhat limited by Kingsland's listing in June and subsequent focus on exploration in adjacent tenements. As per government regulation half of EL32418 was reduced on the anniversary date.

Within EL 32418, future exploration will focus on testing the potential for economic uranium and copper deposits within the Palaeoproterozoic metasediments adjacent to the contact with the Cullen Granite suite.

Kingsland Minerals Pty Ltd signed an option to acquire the licence during the reporting year and are now operators of EL 32418. The option was conditional on Kingsland listing on the ASX which occurred on June 14 2022.

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# 1 INTRODUCTION

This annual report details the work undertaken by Kingsland Minerals Ltd (Kingsland) on the portion of tenement EL32418 that was reduced during the period from 22<sup>nd</sup> April 2021 to 21<sup>st</sup> April 2023.

## 1.1 Location and Access

Tenement EL32418 covers an area of 134.98 km<sup>2</sup> and forms part of Kingsland Mineral’s Allamber Project with EL32152 and EL31960, located approximately 175 km south-east of Darwin and 37 km north-east of the town of Pine Creek (Figure 1).

The Project area is located within the Mary River East Station. Access from Pine Creek is east via the sealed Kakadu Highway for 24 km from Pine Creek and thereafter north via the gravel Mary River Station Access Road for 13km. Access within the tenement area is then via smaller station access tracks.

The Exploration Licence falls within the Pine Creek 1:250,000 (SD52), and McKinlay River (5271) and Pine Creek (5270) 1:100,000 scale topographic and geology map sheets.

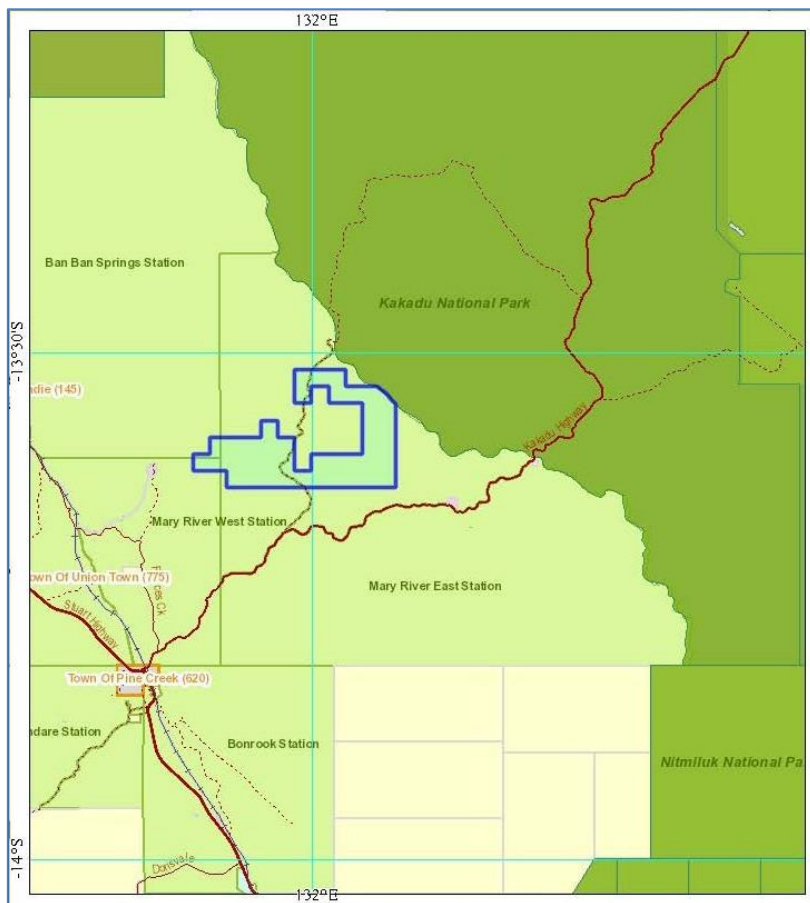


Figure 1: EL32418 – Tenement location

## 1.2 Tenure and Licence Details

Tenement details of the tenement EL32418 are provided in **Error! Reference source not found.** below.

Kingsland Minerals Pty Ltd signed an option to acquire the licence during the reporting year and are now operators of EL 32418. Following Kingsland’s successful listing on the ASX on June 14 2022 the tenement was transferred to Kingsland Minerals Ltd.

Table 1: Exploration Licence summary EL32418

Tenement	Holder	Grant Date	Expiry Date	Area (blocks)	Area (km <sup>2</sup> )
EL32418	Kingsland Minerals Ltd	22/04/2021	21/04/2027	41	134.98

## 1.3 Partial Reduction

The following blocks were reduced from the tenement effective 21 April 2023 2023.

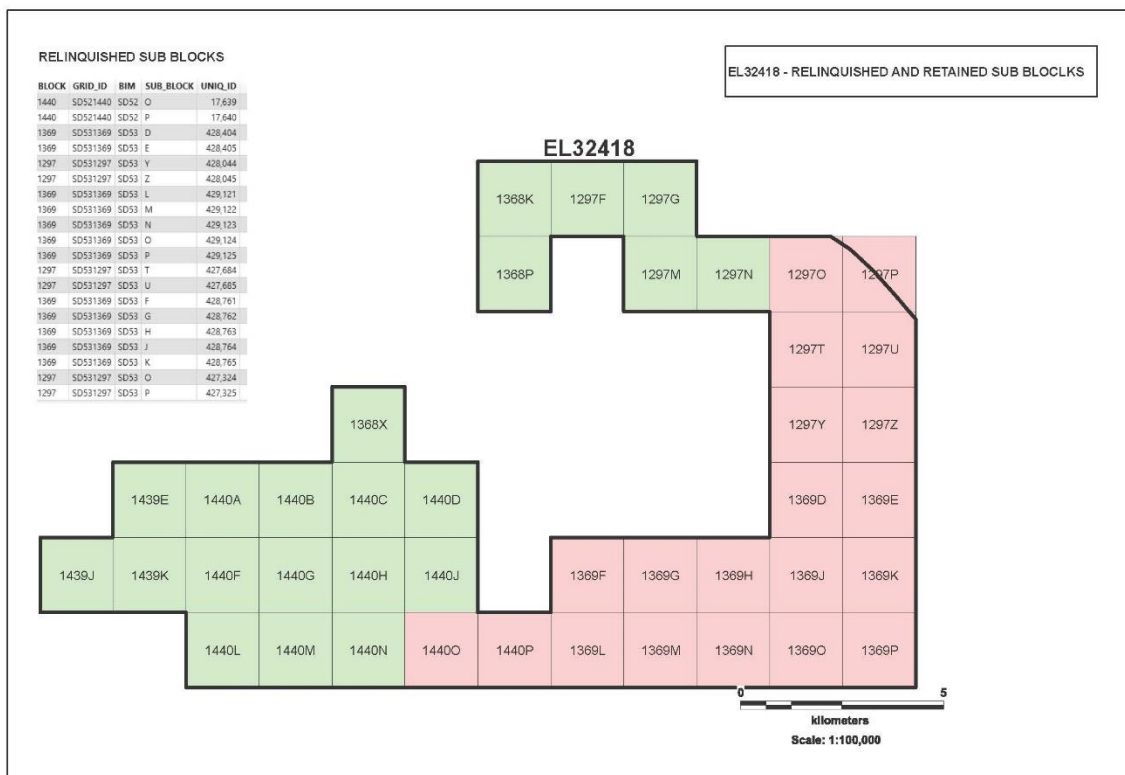


Figure 2: EL32415 – Relinquished blocks (in red)

## 2 GEOLOGY

### 2.1 Regional Geology

The Pine Creek Orogen (PCO) is exposed over 66,000 km<sup>2</sup> and is one of the largest continuous areas of Proterozoic rocks in the world. The orogen comprises Neoproterozoic (2670–2500 Ma) granitic and gneissic basement that is unconformably overlain by a thick succession of Palaeoproterozoic clastic, carbonate and carbonaceous sedimentary and volcanic rocks. These rocks experienced regional metamorphism and deformation of varying grades and intensities in different parts of the orogen between 1867–1850 Ma and syn- to post-tectonic granite emplacement from 1830–1800 Ma (Ahmad and Hollis, 2013). The Palaeoproterozoic sequences of the PCO are host to over 1,000 known mineral occurrences, with major commodities including Au, U, Pb-Zn-Ag, PGE, Cu-Co-Ni, Fe ore, Sn-Ta-W and phosphate (Hollis and Wygralak, 2012). In addition to differences in metamorphic grade and structural styles, these regions are also distinct in the timing and nature of metamorphism and the timing and chemistry of the main phases of magmatism (Ahmad and Hollis, 2013).

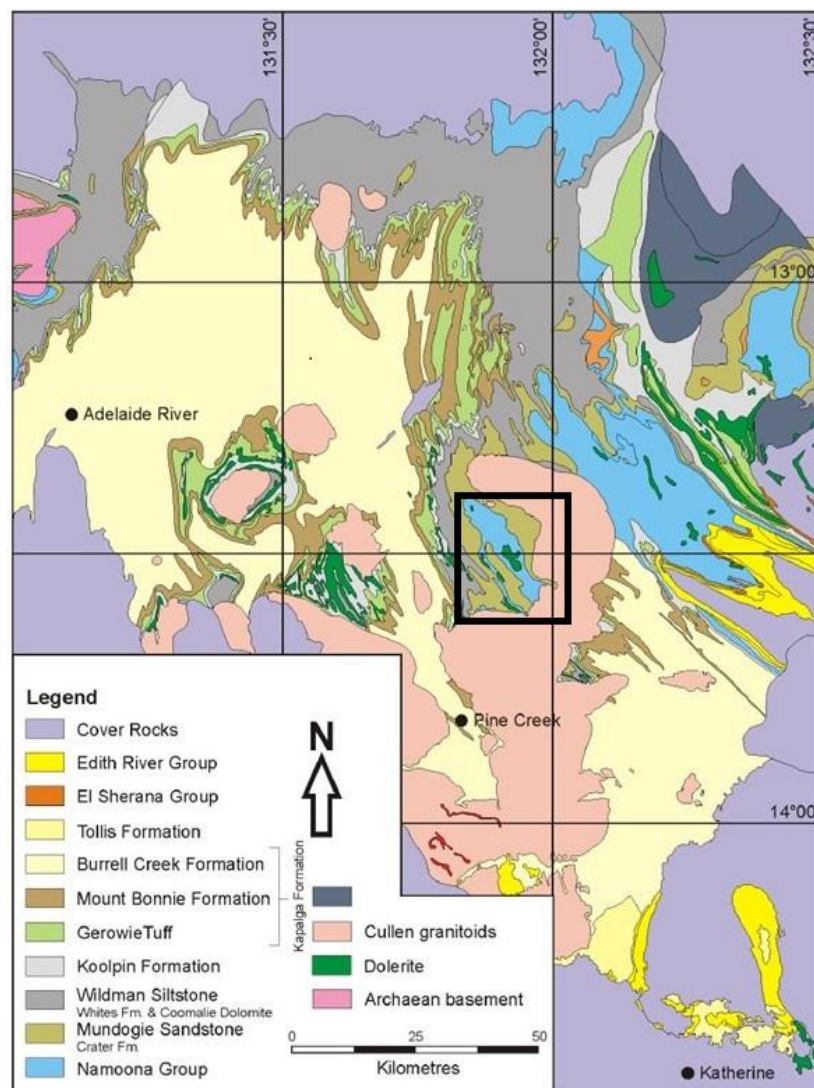


Figure 3: Pine Creek Geology showing location of Figure 4

### 2.1.1 Stratigraphy

The Namooona Group includes the Masson Formation and conformably overlying Stag Creek Volcanics. The Masson Formation comprises a succession of laminated, black pyritic and dolomitic slate, with interbeds of rhyolitic tuff, volcanoclastic slate, metagreywacke and dolarenite. Reduced pelitic and dolomitic sedimentary rocks dominate this formation and suggest deposition in a sub-wavebase marine shelf or broad, shallow basin environment. The Stag Creek Volcanics contain mainly basaltic to andesitic lavas and agglomerate that are discontinuously exposed in the South Alligator Valley region. Exposures are generally poor, due to deep weathering and extensive Cenozoic cover. The mafic volcanic succession comprises amygdaloidal to massive basaltic lava, mafic agglomerate and minor interbedded volcanoclastic arenite and shale. Rare pillow structures and the presence of interbedded tuffaceous shale indicate a subaqueous depositional environment (Stuart-Smith et al 1984). An agglomeratic sample from 1 km north of El Sherana homestead, just south of Gunlom Falls, has yielded a xenocrystic population with an age of  $2021 \pm 10$  Ma, interpreted as a maximum extrusion age.

This provides a maximum age of deposition for the Namooona Group (Worden et al 2008a, b). Zircons obtained from an outcropping mafic tuff have yielded a SHRIMP U-Pb age of  $2048 \pm 13$  Ma (Page 1996a, Ferenczi and Sweet 2005). This is a maximum extrusion age, based on the interpretation that these were xenocrystic zircons, and is consistent with the results of Worden et al (2008a, b).

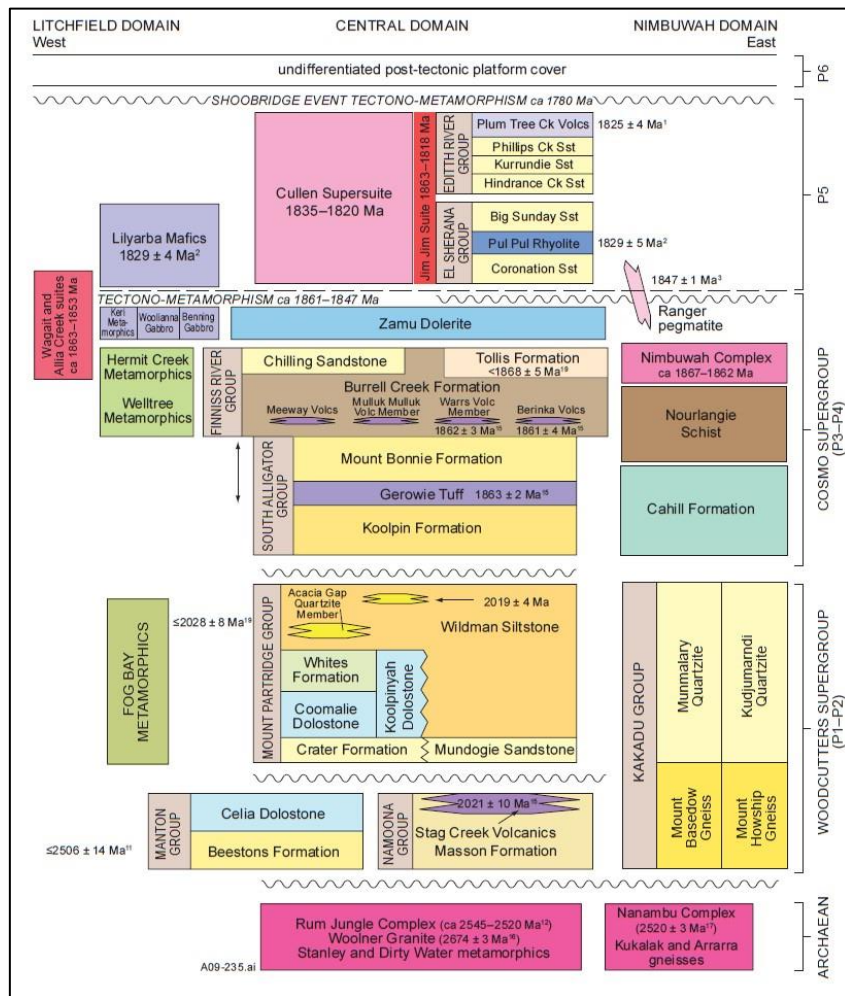


Figure 4: Pine Creek Stratigraphy (Ahmad, Munson 2013)

## 2.2 Local Geology

The Allamber Project is located within the central part of the Pine Creek Orogen (PCO) which is a tightly folded sequence of Palaeoproterozoic rocks, >4km in thickness, laid down on granitic and gneissic Archaean basement unconformably. The sequence is dominated by clastic, carbonate and carbonaceous sedimentary volcanics. Pre-orogenic mafic sills of the Zamu Dolerite intruded the sequence prior to regional metamorphism and deformation. The sequence was tightly folded and pervasively altered with metamorphic grade averaging greenschist facies to phyllite in a period ca 1867–1850 Ma. The Cullen intrusive event introduced a suite of fractionated calc-alkaline granitic magma into the sequence in the period ~1830–1800 Ma. During emplacement, magma experienced differentiation and fractionation which subsequently led to the emanation of hydrothermal fluids responsible for gold, uranium and base metals mineralisation in the adjacent meta-sediments.

Rocks of the Masson Formation (Namoon Group) and Mundogie Sandstone and Wildman Siltstone (Mt Partridge Group) are exposed, which have been intruded by the members of the Cullen Batholith/Cullen Supersuite (Minglo, Frances Creek and Allamber Springs Granites). Sills and dykes of the Zamu Dolerite may also intersect the sequence in places. The Masson Formation comprises carbonaceous phyllite, slates, siltstone and dolomite beds which are exposed towards the base of the formation. It hosts significant uranium mineralisation in the south at Cleo's and Cliff South. In addition, it also contains some occurrences of base metals + gold mineralisation such as Hatrick and Ox-Herring prospects (Figure 4). It may be noted that entire granite- sediment contact within the project area is marked by the presence of Cu anomalism and, so far, it has returned significant assay results from Hatrick, Tarpon and Ox-Eyed Herring prospects.



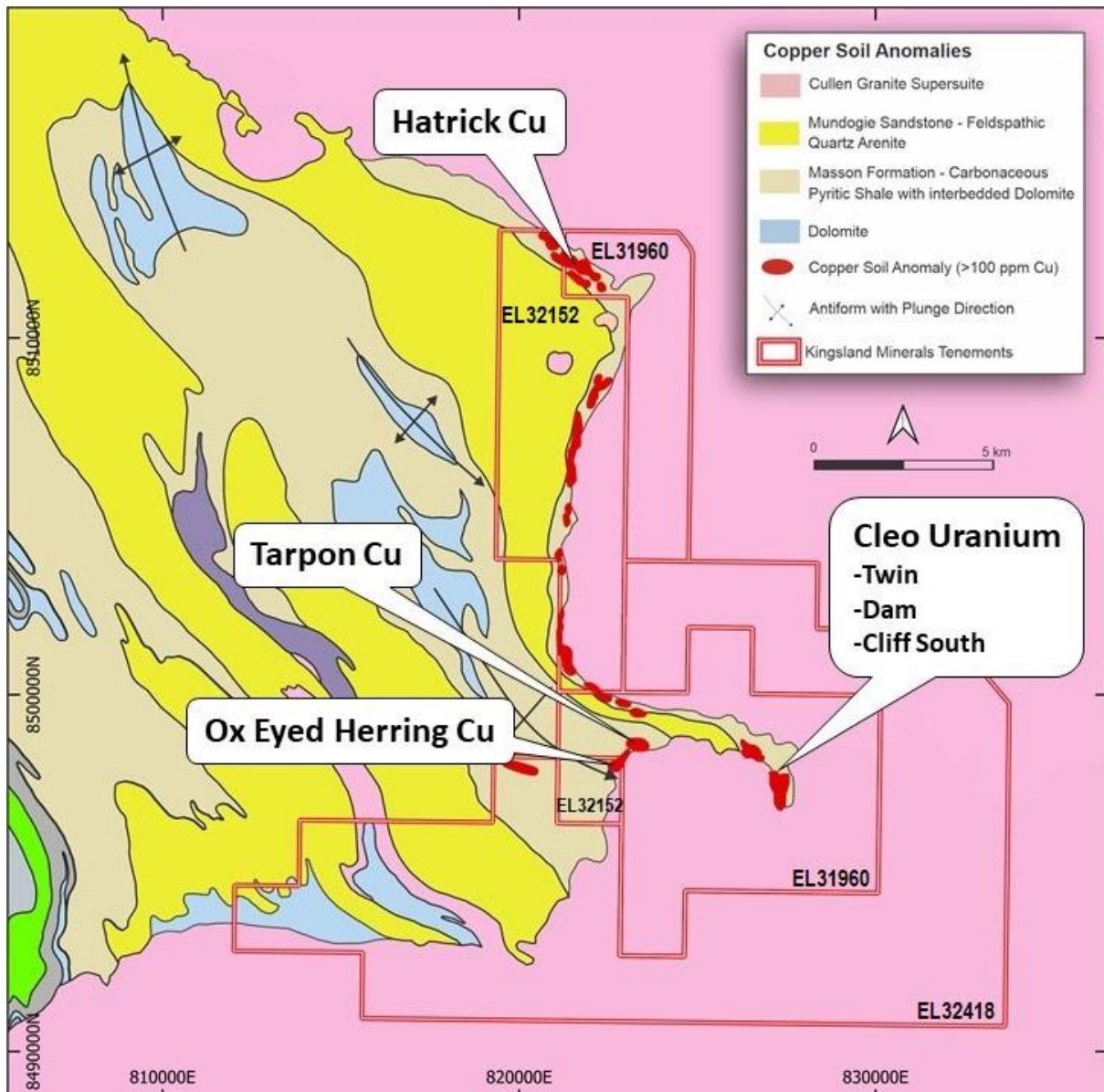


Figure 5: Geology and Prospects Allamber Project EL32418

### 3 MINERALISATION

Geological setting of the project area shows that it is mainly underlain by the prospective Palaeoproterozoic rocks of the Masson Formation, which host significant uranium and base metals mineralisation towards the south-east within the Allamber Embayment. The embayment is where a EW-trending belt of metasediments of the Masson Formation is deformed between two granite intrusions; the Allamber Granite towards south and the Minglo Granite to the North. These granite bodies are fractionated, I-type and characterised by high heat-producing elements, and are responsible for the formation of gold, uranium and base metals in the adjacent meta-sediments (Bajwah, 1994). In the Allamber Project area, granite-metasediment contact is marked by base metal anomalism (Figure 4). Here, approximate contact of the Allamber Springs Granite with the metasediments is characterised by a series of ENE trending SE dipping gossan outcrops (the Ox-Eyed

Herring Gossan Line (OEH Line)), which appears to be weathered massive pyrite-pyrrhotite bodies. This is interpreted to be a major fault structure in the area. Within the granite, but probably representing splays from the OEH Line, are several major NE trending, moderately SE dipping sulphide-quartz breccia lodes, composed of predominantly pyrite-pyrrhotite and minor chalcopyrite, and numerous parallel minor quartz-sulphide veins and veinlets.

#### **4 PREVIOUS EXPLORATION**

CRA Exploration Pty Ltd (“CRA”), in 1978, conducted regional soil traverses covering areas of EL32418. The contact of the Cullen Granite and the Masson Formation proved to be anomalous for copper mineralisation. Subsequent drilling intersected copper mineralisation on or close to this contact (see Figure 4). Much of the exploration was however focussed on the northern extent of this contact. The southern extent of the contact, much of which lies within EL32418 is yet to be fully explored.

In 1983 Total Mining Australia Pty Ltd pegged historic tenements EL4414 and EL4460 for hydrothermal uranium mineralisation. The geological model interpreted the Cullen Granite intrusive history was similar to that of the Rum Jungle and Waterhouse Archean granite domes to the north-east. Total Mining Australia Pty Ltd discovered uranium anomalies using airborne radiometrics at the Allamber Project in 1983.

## **5 WORK COMPLETED DURING YEAR ENDING APRIL 2023**

No exploration work was conducted on the ground within the area of the relinquished blocks in the term of the tenement.

## 6 REFERENCES

Ahmad M and Hollis JA, 2013. Chapter 5: Pine Creek Orogen: in Ahmad M and Munson TJ (compilers). 'Geology and mineral resources of the Northern Territory'. *Northern Territory Geological Survey, Special Publication 5*.

Sener A. K., 2004. Characteristics, Distribution and Timing of Gold Mineralisation in the Pine Creek Orogen, Northern Territory, Australia. PhD Thesis, University of Western Australia, Crawley, Perth WA 6009

The following reports were used from the Northern Territory GEMIS database:

CR1985-0072

CR1986-0144

CR1987-0067

CR1988-0209

CR1989-0151

CR1989-0152

CR1990-0044

CR1991-0112

CR1992-0145

CR2007-0554

CR2008-0588

CR2011-0405