



# Charley Creek North Project Partial Relinquishment Report EL33005

09 August 2022- 22 August 2024

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**Title Holder:** URO Corporation Pty Ltd

**Date of Report:** November 2024

**Target Commodities:** Uranium, rare earth elements, base metals, precious metals

**Mapsheets (1:100,000):** Anburla, Narwietooma

**Mapsheets (1:250,000):** Hermannsburg

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## Abstract

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The relinquished section of Exploration License EL33005, located approximately 105 km northwest of Alice Springs on Amburla Station pastoral land, consists of flat quaternary alluvium with aeolian, colluvial, and floodplain sands and clays that overlie a thick layer of Tertiary cover sediments. The Narwietooma Group Mount Chapple metamorphics, featuring mafic to intermediate granulite with mudstone, underlie the area's crystalline basement and protruding tors, with alluvial fans draining from the MacDonnell Ranges and Strangways Metamorphic Complex, creating a highly prospective environment for rare earth elements (REEs), uranium, and potentially sedimentary-hosted base metals.

Situated in the Proterozoic Arunta Region, primarily within the Aileron and Warumpi Provinces, EL33005 offers potential for various deposit types, including felsic intrusion-related uranium, palaeochannel-related secondary uranium, and polymetallic metamorphic-related deposits. Limited historical exploration and sparse sampling made it an attractive target, reinforced by an adjacent aero-electromagnetic (AEM) survey, which identified buried palaeochannels indicative of sediment-hosted mineralisation.

Exploration activities undertaken by URO Corporation included desktop studies, surface sampling, and preparatory equipment testing. A total of 91 samples (77 soil and 14 rock) were analysed using pXRF and scintillometers, although challenging terrain and dense vegetation restricted sampling to accessible tracks. Field campaigns were adapted to improve mobility, including the use of motorbikes, which proved beneficial for future sampling efforts. While pXRF analysis identified trace anomalies in elements such as cerium (130 ppm), lanthanum (75 ppm), and neodymium (58 ppm), no significant anomalies were confirmed by lab assays.

Despite logistical limitations and the lack of high-value geochemical findings, the relinquished sections of EL33005 remain promising for REEs, uranium, and base metals. Rising tenement costs have led to relinquishing the eastern section, enabling URO to focus on higher-priority areas within the tenement that are still deemed highly prospective. Continued exploration in the area is recommended, particularly in regions where the crystalline basement underlies the sedimentary cover, which may yield polymetallic deposits.

# 1 Introduction

## 1.1 Location, Access and Physiography

The relinquished part of EL33005 lies entirely below Amburla Station pastoral land and is situated approximately 105 km North-West of Alice Springs (Figure 1). The region benefits from Alice Springs' role as a crucial hub for transportation and services, with the Alice Springs airport facilitating access to the exploration area. The Tanami Road and the Stuart Highway provide the main routes from Alice Springs to the project area, while station tracks grant some access to the exploration area. The landscape is characterized by low hills (metamorphic granulite tors), partially covered with shrubs, mulga, gumtrees, termite mounds, and spinifex.

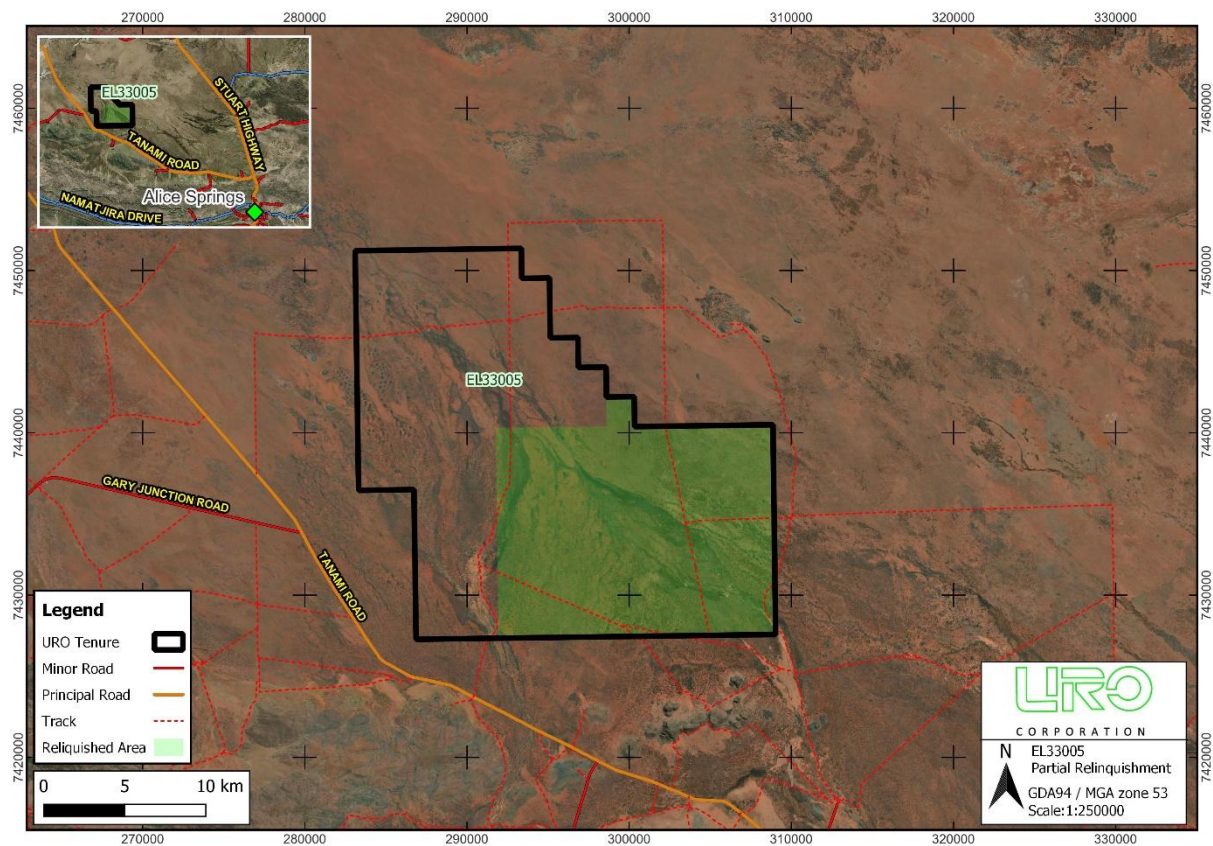


Figure 1: Location Map of EL33005 - Relinquished area highlighted in green.

## 1.2 Mineral Titles

Tenement EL33005, the subject of this Relinquishment Report, was granted to URO Corporation Pty Ltd on the 09/08/2022 (Table 1). The Company holds a 100% interest in the retained tenement area.

Table 1: Mineral title information EL33005

Title	Grant Date	Partial Relinquishment Date	Period	Relinquished Area	Retained Area
EL33005	9 <sup>th</sup> August 2022	22 <sup>nd</sup> August 2024	2 Years	71 Blocks	71 Blocks



## 2 Geological Setting

### 2.1 Regional Geology

The project area lies within the Arunta Region, on the southern margin of the North Australian Craton, partially within the Aileron and the Warumpi Provinces.

The south and south west of the block is marked by a high strain zone, the Redbank Thrust Zone, generated from the continental collision during the Anmatjira uplift phase (1500-1400Ma).

The most extensive hard rock geological feature in the area is the MacDonnell Ranges. The ranges are primarily made up of mid-late Paleoproterozoic mid to high grade, amphibolite to granulite facies metamorphic rocks. The rocks of the MacDonnell Ranges have undergone several stages of uplift, the most recent being the Alice Springs Orogeny (400-300Ma). The metamorphic sequence that makes up the ranges have been later intruded by units such as the Teapot Granite. The Teapot Granite is known to be characterized by numerous late pegmatite and aplite phases. Secondary uranium minerals have previously been identified within the Teapot Granite outcrops (Warren & Shaw, 1995).

The Paleoproterozoic (1850 to 1800Ma) Strangways Metamorphic complex is predominantly composed by Felsic and mafic gneiss metavolcanics and metapelites. These are overlain by the Narwietooma Metamorphic Complex, inclusive of the Mt Chapple Metamorphics (Warren & Shaw, 1995).

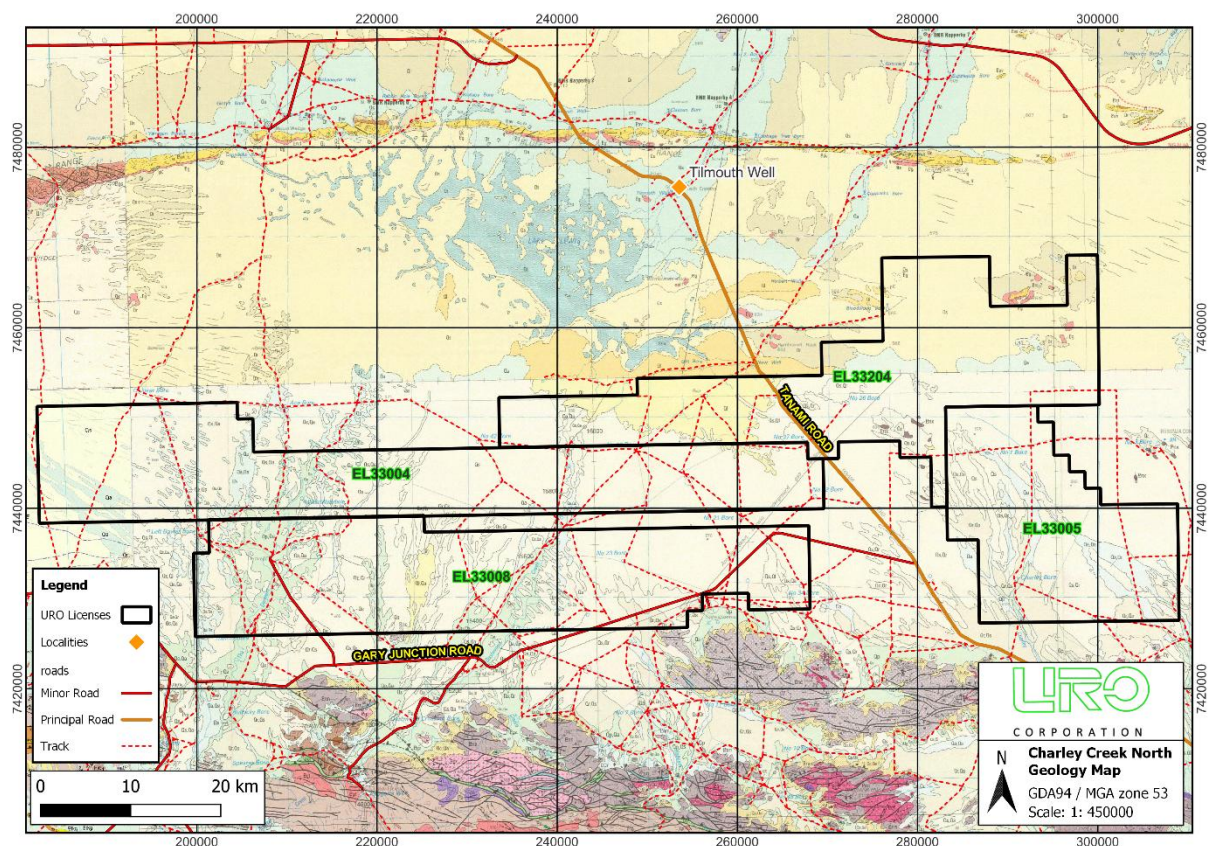


Figure 2: Charley Creek North Geology Map - NT Government Geology, Hermannsberg 250k.

## 2.2 Local Geology

The tenements are characterised by large flat areas believed to consist of quaternary alluvium, consisting of aeolian, colluvial and floodplain sands and clays, which conceal a thick layer of Tertiary cover sediments. Within this area, multiple channel belts have formed, gradually transitioning into ephemeral streams characterized by sandy compositions. The Narwietooma Group, Mount Chapple metamorphics, described as Mafic to intermediate granulite with accessory mudstone, dominate the massif, with small low outliers jutting out from the alluvium, similarly mapped as the Mount Chapple metamorphics.

The alluvial fans, draining from the MacDonnell Ranges and the Strangways Metamorphic Complex, are highly prospective for alluvial rare earth elements, uranium, and possibly sedimentary hosted metals. The underlying crystalline basement are likewise prospective for these commodities in higher concentrations.

## 3 Exploration Rationale

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This tenement is located approximately 90 km to 115 km northwest of Alice Springs and primarily within the Aileron and Warumpi Provinces of the Proterozoic Arunta Region. The area is prospective for REEs, uranium, and precious and base metals. Multiple mineral type targets and therefore multiple deposit style models were considered, including IOCG-U, felsic intrusion-related uranium and rare earths, palaeochannel-related calcrete and redox style secondary uranium, mafic intrusion-related nickel, copper, and polymetallic metamorphic-related deposits.

The area was previously untested by significant field work or drilling. Only two stream sediment samples were previously reported with no anomalous geochemical results. However, the one whole rock samples reported in the area had 750 ppm nickel and 140 ppm vanadium, making the area prospective for base metals. A large AEM survey was acquired just to the east of the tenement, indicating buried palaeochannels prospective for sediment hosted mineralisation. Therefore, targeting was not only focused on newly identified anomalism but also tested opportunities that may exist due to a lack of work.

## 4 Previous Exploration

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**EL755 – CRA Exploration, 1973:** 27 Auger drill holes failed to find any indication of significant calcrete development or of any anomalous uranium values. Uranium mineralisation of any grade was virtually eliminated due to the incorrect source rocks, insignificant U values in groundwater upstream and no major development of calcrete in the EL.

**EL2822 – Alcoa of Australia 1981-82:** Explored for sedimentary uranium deposits. Work included ground resistivity surveying and rotary-mud drilling. Lack of suitable host rocks for uranium mineralisation downgraded potential and no further exploration was recommended.

**EL22616: BHP Billiton, 2002-2003:** Work was aimed at discovering polymetallic Ni-Cu magmatic sulphide mineralisation. No groundwork was completed. A thorough open-file review was completed including geological interpretations and re-processing of historical geophysical data. No target areas were defined.

**EL27283 – Crossland Strategic Metals, 2009-2017:** Crossland took over a large number of tenure in the project area as part of Group 86 which included 8 other licenses. Exploration focused on sedimentary uranium and REE's. An airborne radiometric/magnetic survey was flown in 2010 which covered a number of their licenses in the area. Stream sediment sampling programs for REE were conducted.



**EL31782 – Scriven Exploration, 2018-2020:** completed a thorough literature review and soil sampling program. Thought the area to be prospective for several minerals including Gold, Copper, Iron Oxide, Uranium and possible REEs. Area deemed to be mildly anomalous for gold.

## 5 Exploration Activities conducted within Reporting Period

During the lifetime of the relinquished area, URO completed the following exploration work:

- Desktop/office studies including geological and geochemical analysis of results
- Surface Sampling and Field Reconnaissance

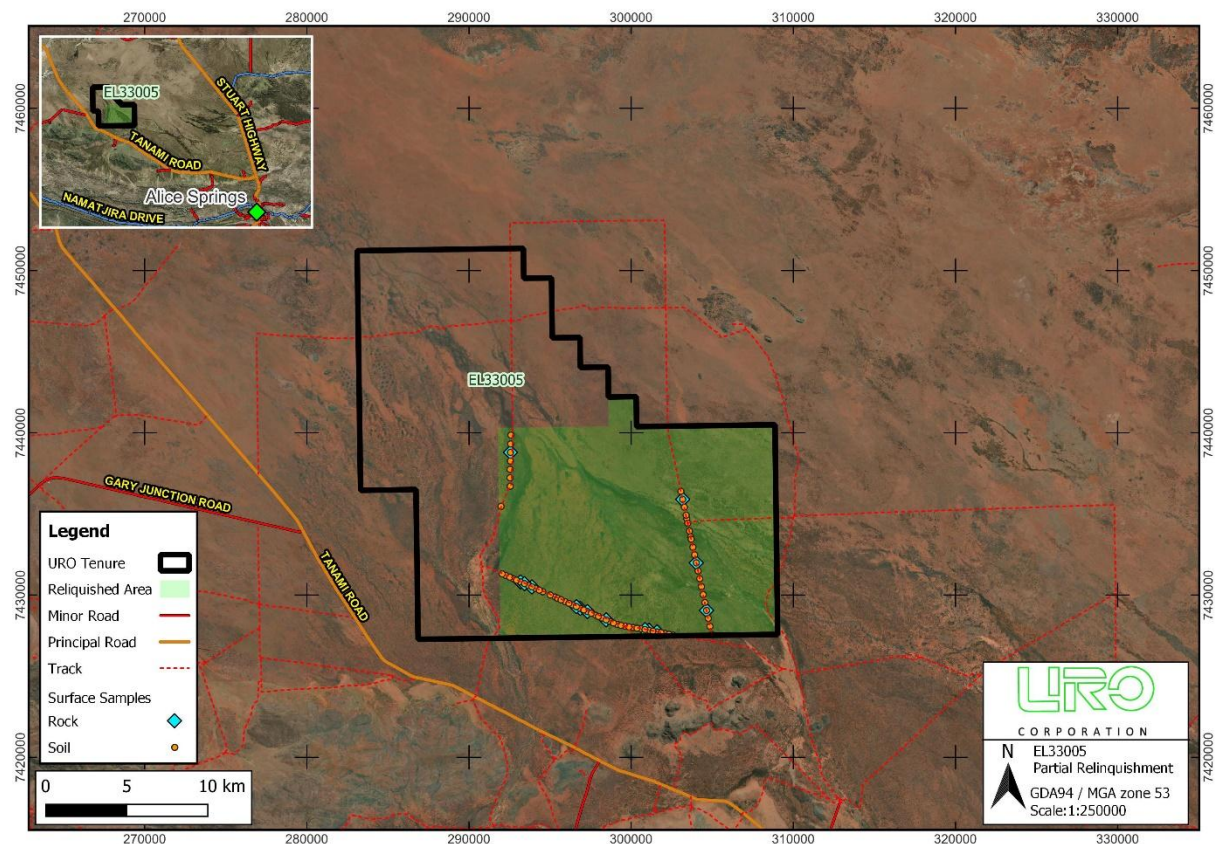


Figure 3: Exploration work completed in the relinquished area.

## 5.1 Office Studies

Most of the office studies for EL33005 focused on past work and the geology of the area to understand the potential prospectivity and mineral systems. Likewise, preparation for fieldwork began with a comprehensive review of regional geology, deposit types, and prior exploration efforts within the project area. New equipment, including Thermo Scientific PRD4 “RadEye” handheld scintillometers and SciApps X555 portable X-ray fluorescence (pXRF) analyser, were tested in the office to ensure efficient sample analysis in the field. A detailed grid soil sampling program was initially designed for the first field campaign in September 2022. However, due to challenging terrain, field sampling was instead conducted along pre-existing tracks.

After fieldwork, visual inspection and pXRF measurements of samples were performed, with desktop analysis incorporating pXRF and assay data collected during the period. This data analysis guided the design of a more targeted field campaign in March 2023. Subsequent office-based interpretation of all soil and surface samples helped URO focus its August 2023 air-core (AC) drilling campaign. Unfortunately, the difficulty of the terrain and access issues prevented AC drilling during the August 2023 campaign.

## 5.2 Surface Sampling and Field Reconnaissance

During the lifetime of the relinquished area, a total of 91 surface samples were collected, consisting of 77 soil samples and 14 rock samples. All samples were analysed using the SciApps portable XRF, and subsequently, 2 of these samples were sent to a laboratory for multi-element geochemical analysis to obtain more detailed insights into their composition.

Due to challenging terrain, sampling was largely confined to existing tracks and predefined grids. The campaign aimed to evaluate the area for potential rare earth element (REE), uranium (U), and base metal deposits. Dense scrub and mulga wood made access difficult, with flat tires and vehicle wear rendering standard 4WD Land Cruisers impractical. Following the September 2022 campaign, URO adjusted its sampling approach to improve accessibility in remote areas, purchasing two agricultural (Ag) motorbikes to enhance field mobility and sampling efficiency during the March 2023 field campaign.

Although no anomalous results of target commodities were discovered during geochemical analysis, the following anomalous measurements were made of several elements with pXRF: Ce 130 ppm; La 75 ppm; Nd 58 ppm. However, no anomalous results were seen in the laboratory assays.



## 6 Conclusion and Recommendations

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Exploration License EL33005, located in the mineral-rich Arunta Region, shows strong potential for rare earth elements (REEs), sediment hosted uranium deposits and base metals. The region's complex geology, characterised by Paleoproterozoic metamorphic rocks and widespread alluvial systems, creates favourable conditions for diverse deposit styles, including sediment-hosted uranium, REEs, and polymetallic metamorphic-related deposits.

During its tenure, URO Corporation advanced its exploration efforts through desktop studies and surface sampling. Although no significant geochemical anomalies were identified, much of the tenement remains underexplored, with considerable potential for discovery. Despite logistical challenges, including limited access to certain areas, surrounding AEM surveys and drilling results have provided valuable insights that will inform future exploration.

In response to rising tenement costs, URO has streamlined its portfolio, relinquishing the eastern portion of EL33005 to focus on higher-priority areas. However, URO still considers this tenement highly prospective, particularly for REEs and sediment-hosted uranium. The deeper crystalline basement beneath the regolith and sedimentary cover also holds potential for polymetallic metamorphic-hosted deposits.

### ***Recommendations for Future Work in the Retained Area:***

**Surface Sampling and Field Reconnaissance:** Expand ground-based sampling to better delineate prospective zones for REEs, uranium, and base metals. Detailed mapping and sampling will be essential for refining exploration models and planning future drilling programs. Accessibility can be improved by using motorbikes and side-by-sides, allowing for more extensive grid sampling.

**Geophysical Surveys:** Conduct aero-electromagnetic (AEM) and ground-based gamma-ray spectroscopy (GRS) radiometric surveys to refine target areas. These surveys will help prioritise regions with the highest REE and uranium potential.

**Air Core (AC) Drilling Program:** AC drilling offers an efficient, cost-effective method for testing anomalies in up to 100 meters of sedimentary cover, reaching into the base hard rock. Future AC drilling should target previously inaccessible areas to assess REE, uranium and base metal potential fully.

**Data Integration and Analysis:** Combine results from desktop studies, geochemical analyses, and pXRF data with laboratory assays to enhance target generation following field sampling and drilling. This integration will improve the understanding of the mineralogical and geochemical characteristics of EL33008, supporting more effective exploration.

## 7 List of Digital Data Files

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Table 2: List of digital files attached.

Attachment	Description
EL33005_2024_P_01.pdf	Report Body
EL33005_2024_P_02_SurfaceGeochemPXRF.txt	PXRF results of surface sampling
EL33005_2024_P_03_SurfaceGeochemAssay.txt	Assay results of surface sampling
EL33005_2024_P_04_FileListing.txt	File Listing

## 8 References

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Warren, R. G., & Shaw, R. (1995). *Hermannsburg NT 1:250,000 Geological series. NTGS. Explanatory Notes SF53-13*. NT: NTGS.

Open File mineral exploration reports:

CR19730214

CR82/11

CR2004-0184

EL27283\_2016\_P

CR10802

CR2020-0409\_EL31782