

# CORPORATION

# Charley Creek South Project Partial Relinquishment Report EL33055

05 August 2022- 22 August 2024

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### Abstract

Exploration License EL33055, located approximately 145 km west-northwest of Alice Springs, spans Narwietooma Station and portions of Amburla and Hamilton Downs Stations. Access to the project area is facilitated by the Alice Springs airport, railway, and key transport routes such as the Stuart Highway, Tanami Road, and Kintore Road, with additional entry points via Narwietooma Homestead. Secondary roads and station tracks provide further access to various exploration zones within the tenement.

The tenement is characterized by diverse terrain, including rugged hills and foothills—such as Mount Chapple and Redbank Hill—and alluvial plains covered with mulga, gum trees, spinifex, and termite mounds. Geologically, the area features Paleoproterozoic metamorphic rocks, notably the Narwietooma Metamorphic Complex, which includes mafic-felsic granulites and gneisses, along with outcrops of the Mount Zeil Granite and Forty-Five Augen Gneiss. Thick Tertiary sediments and Quaternary alluvium overlie portions of the tenement, concealing prospective basement geology.

EL33055 sits within the Aileron and Warumpi Provinces of the Arunta Region, with sections extending into the Ngalia and Amadeus Basins. This complex geological setting supports potential mineral systems for base metals, precious metals, rare earth elements (REEs), and uranium. Multiple deposit styles were considered, including IOCG-U, felsic intrusion-related uranium and REEs, palaeochannel uranium, mafic intrusion-related nickel and copper, and polymetallic metamorphic deposits.

Exploration efforts by URO Corporation included desktop studies, field sampling, and data analysis. Initial campaigns were hindered by terrain challenges, such as dense vegetation and mountainous areas, leading to adjustments in field methodologies. Despite the collection and analysis of 85 surface samples— comprising soils and rocks analysed with portable XRF and scintillometers—no significant geochemical anomalies were detected for the target commodities.

Significant portions of the tenement overlap Northern Territory Aboriginal Sacred Sites, designated by the Aboriginal Areas Protection Authority (AAPA) as Restricted Work Areas or Recorded Sacred Sites. These restrictions rendered further exploration impractical in the relinquished areas. Consequently, these sections were surrendered, while URO continues to recognize the region's potential for REEs, uranium, and polymetallic deposits.

The relinquishment decision reflects a strategic focus on more accessible and higher-priority exploration targets. Future work in retained areas will aim to build on regional datasets and refine exploration models for discovery.

### 1 Introduction

#### 1.1 Location, Access and Physiography

The relinquished portion of EL33055 is located approximately 145 km west-northwest of Alice Springs, extending across Narwietooma Station pastoral land (Figure 1). Alice Springs serves as a vital hub for transportation and support services, with convenient access to the project area facilitated by the Alice Springs Airport and railway. Primary access routes include the Stuart Highway, Tanami Road, and Kintore Road, with additional approach through Narwietooma Homestead. Within the tenement area, a network of well-maintained secondary roads and station tracks allows access to various exploration zones.

The landscape of EL33055 is partially alluvial plains and marked by rugged hills and foothills, including mountain outliers of the Western MacDonnell Ranges. Vegetation consists primarily of shrubs, mulga, gum trees, spinifex, scattered termite mounds, with dense growth across flatter areas that contrasts with the rugged, mountainous terrain.



Figure 1: EL33055 Location Map - relinquished area highlighted in green.

#### 1.2 Mineral Titles

Tenement EL33055, the subject of this partial relinquishment report, was granted to URO Corporation Pty Ltd on 05 August 2022. The Company held a 100% interest in the relinquished area of the tenement and continues to hold the unrelinquished portion into Year 3 of the exploration license.

| Title   | Grant Date                  | Partial<br>Relinquishment<br>Date | Period  | Relinquished<br>Area | Retainea Area |
|---------|-----------------------------|-----------------------------------|---------|----------------------|---------------|
| EL33055 | 5 <sup>th</sup> August 2022 | 22 <sup>nd</sup> August 2024      | 2 Years | 68 Blocks            | 68 Blocks     |

Table 1: Mineral title information EL33055 – relinquished area.

### 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 southern margin of this 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 G., Shaw R.D., 1995).

The Paleoproterozoic (1850 to1800Ma) 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 G., Shaw R.D., 1995).

Most of the remaining project sub-area is overlain by Quaternary aeolian, colluvial and floodplain sands and clays, which conceal a thick layer of Tertiary cover sediments reaching up to 300 m in thickness. The alluvial fans, draining from the MacDonnell Ranges and the Strangways Metamorphic Complex, are highly prospective for alluvial rare earth elements, uranium, and heavy mineral sands.



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

#### 2.2 Local Geology

EL33055 sits just north of the MacDonnell Ranges. Large sections of the project area are overlain by Quaternary aeolian, colluvial and floodplain sands and clays, which conceal a thick layer of Tertiary cover sediments (Within this area, multiple channels have formed, gradually transitioning into ephemeral streams characterized by sandy compositions. The alluvial fans, draining from the MacDonnell Ranges and the Strangways Metamorphic Complex, are highly prospective for alluvial rare earth elements, uranium, and heavy mineral sands. MacDonnell Ranges orogenic outliers form isolated mountains and hills around the tenements.

As shown in Figure 2, the relinquished south-west part of the project area contains outcrops of the faulted Madderns Yard Metamorphic Complex (Warren & Shaw, 1995). This complex includes Glen Helen Metamorphics Formation are Banded migmatitic quartzofelspathic gneiss, minor gneissic granite. Bungharra Metamorphics, which consist of mafic-felsic granulite and gneiss, with minor occurrences of metasediments is also exposed in the area. As is the Mount Zeil Granite, an augen gneiss composed of deformed migmatitic granodiorite, along with minor microgranite and homogeneous granitic gneiss (Warren & Shaw, 1995).

### 3 Exploration Rationale

This tenement is located approximately 130km to 157km northwest of Alice Springs and primarily within the Aileron and Warumpi Provinces of the Proterozoic Arunta Region. As previous workers have shown, the application areas are prospective for precious and base metals, uranium, REE, energy metals and PGEs. The area was previously untested by field work. Therefore, targeting was not only focused on newly identified anomalism but also tested opportunities that may exist due to a lack of work.

The area of EL33054 was a target for REE considering Crossland Nickel's Charley Creek alluvial rare earth and heavy mineral sands deposit is just south. The rare earth mineralisation exists from the surface alluvium to a maximum depth of around 80 meters into the saprolite. Therefore, a program of surface sampling and reconnaissance was key to exploration efforts.

### 4 Previous Exploration

Previous exploration in Charley Creek south has focused mostly on sedimentary hosted uranium, with minor exploration for base metals and REE's. There was a notable gap in exploration throughout the 1990's. Noteworthy previously exploration includes:

**EL519 – CRA Exploration, 1973:** Exploration focussed on sedimentary hosted Uranium. Conducted geological mapping, gamma-logging of open file water bores. Results not encouraging.

**AP2713 – CRA Exploration, 1973**: Conducted auger drilling for sedimentary hosted uranium. Results not very encouraging.

**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.

**EL25794 – Crossland Strategic Metals, 2008-2017:** 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, base metals and REE's. An airborne radiometric/magnetic survey was flown in 2010 which covered the entire tenement area. Processing and interpretation identified mineral potential. 297 stream sediments and rock chip samples were taken, all assayed for REE, uranium, thorium and base metals.

**EL31783 – 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 on EL33055, URO completed the following exploration work:

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

#### 5.1 Office Studies

Most of the office studies for EL33055 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 SciAps 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 the 2022 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 on other parts of EL33055.

#### 5.2 Surface Sampling and Geochemistry

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. The mountainous areas of the tenement were difficult to access. Dense scrub and mulga wood in the flats 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. This made grid sampling easier.

During the period of exploration in the relinquished area, a total of 85 surface samples were collected, including 70 soil samples and 15 rock samples (Figure 3). These samples were analysed using portable X-ray fluorescence (pXRF), used as a rapid and non-sample destructive method for elemental analysis. Based on the pXRF results, no significant findings were identified that would require further investigation. Consequently, it was determined that none of the samples needed to be sent for additional laboratory-based assay analysis

Although no anomalous results of target commodities were discovered during geochemical analysis using the pXRF. Subsequently no samples were sent for lab assays.



Figure 3: Work completed in the relinquished area of EL33055.

### 6 Conclusions

Exploration License EL33055, situated in the mineral-rich Arunta Region, holds significant potential for base metals, precious metals, rare earth elements (REEs), and uranium deposits. The area's complex geology, characterised by Paleoproterozoic metamorphic rocks and widespread alluvial systems, provides favourable conditions for diverse deposit styles, including IOCG-U, sediment-hosted uranium, REEs, and polymetallic metamorphic-related deposits.

During its tenure, URO Corporation conducted desktop studies and surface sampling to assess the area. While no significant geochemical anomalies were identified in the accessible areas, the tenement remains underexplored with strong discovery potential. However, large portions of the relinquished area are designated as Northern Territory Aboriginal Sacred Sites, categorised as Restricted Work Areas, Recorded Sacred Sites, or Extents of Recorded Sites by the Aboriginal Areas Protection Authority (AAPA).

Due to the restricted nature of these sites, further exploration in these areas is impractical, leading to their relinquishment. Nonetheless, URO considers the region highly prospective, particularly for base and precious metals, REEs, and uranium. The crystalline outcrops, regolith, and sedimentary cover continue to show potential for polymetallic, metamorphic-hosted deposits.

# 7 List of digital data files

Table 2: List of digital files attached.

| Attachment                               | Description                        |
|--|------------------------------------|
| EL33055_2024_P_01.pdf                    | Report Body                        |
| EL33055_2024_P_02_SurfaceGeochemPXRF.txt | PXRF results from surface sampling |
| EL33055_2024_P_03_FileListing.txt        | File verification listing          |

### 8 References

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:

CR1972-0069 CR1973-0120 CR2004-0184 EL25794\_2017\_AS EL31783\_2020\_S\_01