



PARTIAL CLOSURE REPORT

EL31058

02 August 2016 to 16 July 2020

Author: David Rawlings, Amy Lockheed and Andrea Hodgson
Date: 10 September 2020
Tenement Holders: Lithium Developments Pty Ltd (100%)
Tenements: EL 31058
Reporting Period: 02 August 2016 to 16 July 2020
Distribution: Core Lithium Ltd (1)
Northern Territory Department of Primary Industry and Resources (1)
Map Sheet: Barrow Creek 1:250,000 sheet (SF53-06)
Crawford, Barrow and Home of Bullion 1:100,000 sheets
Target Commodity: Lithium, Gold, Base Metals
Keywords: Lithium, Gold, Base-Metals, Soil Geochemistry, Rock-Chip Geochemistry, Geological Mapping, Pegmatite, LCT-Type

CONTENTS

1. SUMMARY 3

2. INTRODUCTION 4

3. TENURE 5

4. GEOLOGY AND MINERALISATION..... 6

5. PREVIOUS EXPLORATION 7

6. CXO EXPLORATION..... 9

7. REHABILITATION 10

8. CONCLUSIONS AND RECOMMENDATIONS..... 10

9. REFERENCES 11

LIST OF TABLES

Table 1: Tenure details for the relinquished area of EL31058 5

LIST OF FIGURES

Figure 1: Location map of Exploration Licence EL31058..... 4

Figure 2: Regional Geology of EL31058, BARROW CREEK 1:250 000 Sheet 53-06..... 5

Figure 3: Regional mineral occurrences 8

Figure 4: Soil samples collected from the relinquished portion of EL31146..... 9

APPENDICES

Appendix Number	Title	File/ Folder Name
Appendix 1	EL31058_Soil_Samples.txt EL31058_Soil_Samples.kml	Soil_Geochem

Copyright Statement

The owned information acquired by Core Lithium Ltd (CXO) includes all information under the previous work by CXO and work during reporting year sections. The rest of the information has been sourced from open reports and data through the Northern Territory – Department of Primary Industry and Resources. The Minister has authority to publish the copyrighted information accordingly.

1. SUMMARY

This report details exploration conducted within the relinquished portion of Exploration Licence 31058 by Core Lithium Ltd (CXO). The area is located around the historical Barrow Creek Pegmatite Field in the Northern Territory, approximately 300km North of Alice Springs.

The pegmatite occurrences in the Barrow Creek Pegmatite Field have previously provided opportunities for the discovery of commodities such Sn-Ta-W. However, prior to investigation by government geologist Frater (2005), no historical exploration or prospecting investigations had explored the potential for pegmatite-related lithium (Li) mineralisation. It is worth noting that previous exploration and investigations have not focused on, and in many cases not included, the area being relinquished.

CXO believes there is a high potential for prospective L-C-T Type pegmatite mineralisation in the region, but the relinquished portion has low prospectivity based on geology and soil geochemistry. Minimal on-ground exploration has taken place on this portion, but a literature review was carried out and is the basis of the regional geology section below. Reconnaissance mapping, rock chip sampling and soil geochemistry programs have been undertaken on the adjacent still-granted ground.

CXO has commissioned an AAPA heritage clearance, the results of which have been received.

Following a review of CXO's exploration tenure holding in the NT the company has decided to partially relinquish this license so it can focus further on developing and progressing the Finniss Lithium Project.

2. INTRODUCTION

This report details exploration conducted within the area of EL31058 relinquished by CXO (Figure 1). This area forms part of CXO’s Barrow Creek Li-Pegmatite Project with the reporting period being 02 August 2016 to 16 July 2020

EL31058 is located the Crawford, Barrow and Home of Bullion 1:100,000 map sheet areas and is located within the BARROW CREEK (SF53-06) 1:250,000 map sheet (Figure 2).

All weather access to the Project area from Alice Springs is north via the Stuart Highway (~300 km). Reliable fair-weather access to individual sites is via a series of established pastoral and historical exploration tracks. The portions of EL31058 being relinquished overlie the Neutral Junction Pastoral Lease (PPL 3375) and Stirling Station Pastoral Lease (PPL 655 and 1092).



Figure 1: Location map of Exploration Licence EL31058

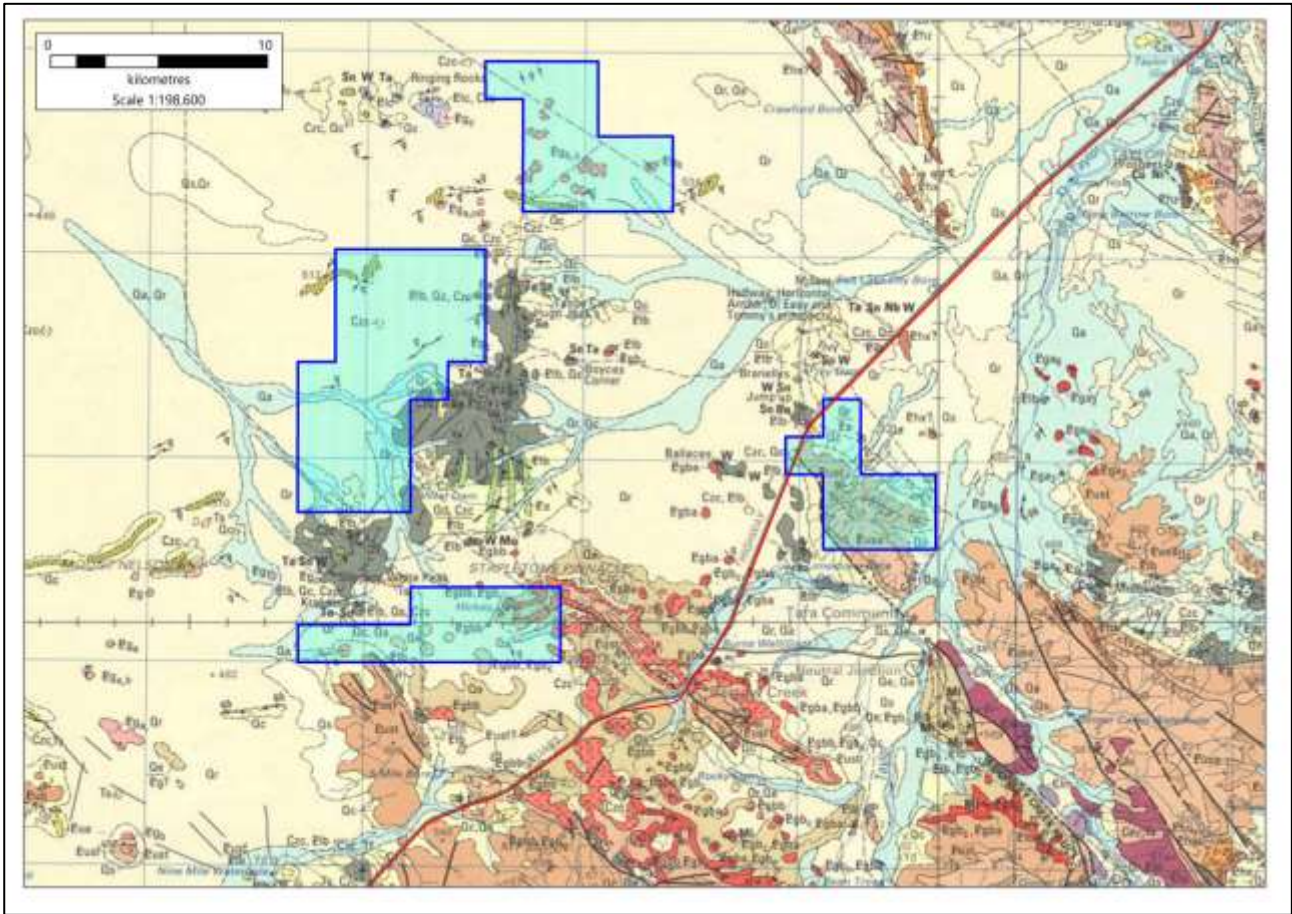


Figure 2: Regional Geology of EL31058, BARROW CREEK 1:250 000 Sheet 53-06

3. TENURE

EL 31058 was granted to Lithium Developments Pty Ltd, a wholly owned subsidiary of CXO, on 2 August 2016. Only the area being relinquished is tabulated below (Table 1).

Group reporting of the Barrow Creek amalgamated tenure (including EL31058) GR458 was granted by NT DPIR on 26 June 2017. The NT DPIR defined the initial reporting period for EL31058 as 02 August 2016 to 07 December 2017.

Table 1: Tenure details for the relinquished area of EL31058

Tenement	Owner	Date Granted	Size
EL 31058	Lithium Developments Pty Ltd (100%)	02/08/2016	58 blocks/185.49 km ²

4. GEOLOGY AND MINERALISATION

The Barrow Creek Lithium Project area is located at Barrow Creek, Northern Territory, approximately 300 km N of Alice Springs (Figure 1). The area is characterised by light mulga and acacia tree species in spinifex and tussock grass aeolian sandy plains that largely obscure underlying bedrock. The region is punctuated by low hills and rises that are cut by NE and W trending recent alluvial drainage systems. The drainage systems are only periodically subject to seasonal flooding events and are generally dry. In the S and SE are several SE trending low ranges.

The oldest rocks in the region are the poorly exposed Paleoproterozoic Lander Rock Formation (formerly Lander Rock beds) and mafic intrusive rocks of the Aileron Province, Northern Arunta (Bagas & Haines 1990, Haines et al 1991, Scrimgeour 2013; Figure 2). The Lander Rock Formation is considered a transitional lateral equivalent (Scrimgeour 2013) of the Bullion Schist of Haines et al (1991) and a probable time equivalent of the Ooradidgee Group in the Davenport Province of the Tennant Region to the N (Claoué-Long et al 2008b). Sedimentary facies and associations within the Lander Rock Formation indicate deposition in a proximal shallow-water marine environment (Donnellan 2008). Regional geochronological studies suggest a likely depositional age in the range 1840 – 1830 Ma (Cross et al 2005, Cross and Crispe 2007, Claoué-Long et al 2008a). Metasedimentary rocks of the Lander Rock Formation exhibit LP-HT metamorphic grade and generally comprise biotite-muscovite-andalusite+/-sillimanite+/-garnet bearing metapelitic, metapsammitic and metapsammo-pelitic schist. In the Barrow Creek-Lander River region the Lander Rock Formation and mafic intrusives have gold and base-metal prospectivity.

The region is punctuated by several large Paleoproterozoic felsic intrusive bodies with ages in the range 1820–1789 Ma (Scrimgeour 2013). Granitoids are typically equigranular to porphyritic biotite-granite, biotite-muscovite granite, medium to coarse-grained quartz-feldspar-muscovite-tourmaline+/-garnet leucogranite+/-metasedimentary enclaves, biotite-granodiorite and monzogranite. In adjacent Lander Rock Formation local tourmalisation, pseudomorphic replacement of andalusite by quartz-muscovite and growth of minute garnet porphyroblasts are interpreted to be associated with contact metamorphism during intrusion. Similarly, local hornfels and calc-silicate rock in areas such as the Ringing Rocks Ta-Sn prospect may be attributed to contact metamorphism.

In the area swarms of intrusive pegmatite dykes and sills are related to the Ooralingie and Bean Tree granites of the Barrow Creek Granite Complex (~1803 Ma; Smith 2001). Pegmatite veins vary compositionally and texturally from medium to coarse-grained equigranular quartz – feldspar-muscovite-tourmaline+/-garnet pegmatite, quartz-rich muscovite-tourmaline pegmatite, compositionally segregated (zoned) quartz-muscovite/quartz-feldspar+tourmaline pegmatite and megacrystic feldspar-bearing pegmatite. Greisenisation associated with pegmatite intrusion is also common.

The felsic intrusives have historically provided opportunities for the discovery of commodities such as those in the Barrow Creek Sn-Ta-W Pegmatite Field (Frater 2005, Donnellan 2013, Scrimgeour 2013; Figures 2 and 4). However, prior to Frater (2005) no historical investigations had explored the potential for pegmatite-related lithium mineralisation. The pegmatite of the Barrow Creek Pegmatite Field is divided on geochemical grounds by Frater (2005) into the Eastern and Western Pegmatite Groups, and a third weakly mineralised Neutral Junction Pegmatite Group. A summary of these divisions is provided in Scrimgeour (2013)

Unconformably overlying the Paleoproterozoic stratigraphy and intrusive rocks are the unmetamorphosed, Neoproterozoic to Devonian platform cover sedimentary sequences of the contiguous Southern Georgina and Wiso basins (Dunster et al 2007, Kruse et al 2013). The

interconnected Georgina and Wiso basins (and Daly Basin) collectively formed part of the vast middle-Cambrian Centralian Superbasin that extended across northern, central and southern Australia. In the S of the project area the ranges of flat lying-to gently undulating sedimentary rock sequences are eroded remnants of the Central Mount Stuart Formation of the Georgina Basin.

Throughout the area are numerous W-WNW to NW trending thick white quartz blows and resiliified creamy brown quartz-breccia zones.

These structures are most likely associated with numerous W to NW trending faults interpreted from geophysical data and mapped by Bagas and Haines (1990), Haines et al., (1991) and Donnellan (2008). The on-ground positions of interpreted faults are often coincident with elongate low mounds of white quartz lag and areas of scattered quartz lag, float metasedimentary and mafic rock. Where exposed these structures are generally steep N to NE dipping with interpreted N-over-S thrust displacement. A major NW-trending thrust fault system likely separates rocks of the Barrow Creek Granite Complex and associated Barrow Creek Sn-Ta-W (Pegmatite) mineral field in the S and SW, from the Ali Curung Granite dominated polymetallic domain to the N and NE. It is suggested here that the apparent mineral species partitioning across the interpreted structure may indicate the influence of a fundamental crustal scale controlling structure though the region. These faults appear to define a semi-continuous network from the Barrow Creek Region through to the Tanami, parallel to and coincident with the Willowra Gravity Ridge. Results of the 2005 Tanami Seismic Survey indicate many of the faults with comparable scale and along-strike position are fundamental crustal-scale features interpreted to be associated with a buried Paleoproterozoic-age continental suture zone (Goleby et al 2009). The structure has a probable multi-phase history from the Paleoproterozoic through to the ~300Ma Alice Springs Orogeny, involving extensional basin-formation, reactivation (inversion?) and modification.

5. PREVIOUS EXPLORATION

The portion of EL31058 being relinquished falls within the general region known as the Barrow Creek pegmatite Field which was subject to scattered early prospecting and small-scale mining in the period 1930s –1950s. Shallow metre-scale discovery pit workings and alluvial scrapes sited on and around pegmatite occurrences are generally all that remain of this early phase of mining, exploration and prospecting. None of these named or unnamed mineral occurrences fall within the area being relinquished (Figure 3).

From the 1970s to 2016 several companies (Kewanee early 1970s, AV Miller 1978-79, R.B Mining 1980-82, Normandy 1993-99, Excedo 2016) conducted exploration programs in the Barrow Creek Pegmatite Field region, however this report only includes activity relevant to specific area being relinquished.

In the early 1970's Kewanee Australia Pty Ltd (Kewanee) conducted a regional exploration campaign across the Barrow Creek region which primarily focused on identifying Cu, Pb, Zn, W and Sn mineralisation (Cogar 1972). Analysis for Li-content were not conducted.

The area of EL31058 being relinquished falls within the extent of the early Kewanee reconnaissance program which utilised aeromagnetics, radiometrics and EM survey techniques to identify areas of interest for follow-up mapping and geochemical surveys. However, identified areas for follow up were not located within the boundary of the area being relinquished.

In 2002 as part of a regional government survey into the mineralisation potential of pegmatite in the Northern Territory, historical prospects in the nearby area were briefly inspected and sampled by Frater (2005). Results from these samples led to the Barrow Creek Pegmatite Field being divided on geochemical grounds by Frater (2005) into the Eastern and Western Pegmatite Groups, and a

third weakly mineralised Neutral Junction Pegmatite Group. Samples were not taken from the area being relinquished.

Subsequent to the work by Frater (2005), Excedo Exploration (Excedo) conducted a 3-day lithium-focussed reconnaissance in EL 31058 over several prospects of the Western Pegmatite Group in early 2016. This reconnaissance focussed on mineral occurrences and prospects which are not within the portion being relinquished, none the less Excedo concluded that they could confirm the presence of Lithium-Caesium-Tantalum (LCT) type pegmatites in the region

Excedo also commissioned a report by CSA Global Pty Ltd, Perth with an emphasis on EL 31058. The report provides guidance as to the prospectivity or otherwise of lithium (Li) and related mineralization such as tin (Sn), tantalum (Ta) and Niobium (Nb).

The pegmatite class considered most important for lithium mineralization (target minerals include spodumene, petalite, amblygonite and lepidolite) is the L-C-T type. CSA Global concluded that while there is insufficient geological and geochemical information to draw any definitive conclusions with respect to prospectivity for lithium mineralization, geochemical information contained in the Northern Territory Geological Survey (NTGS) Whole Rock database indicates pegmatites in the Barrow Creek region are most likely of the L-C-T type, and therefore should be prospective for lithium.

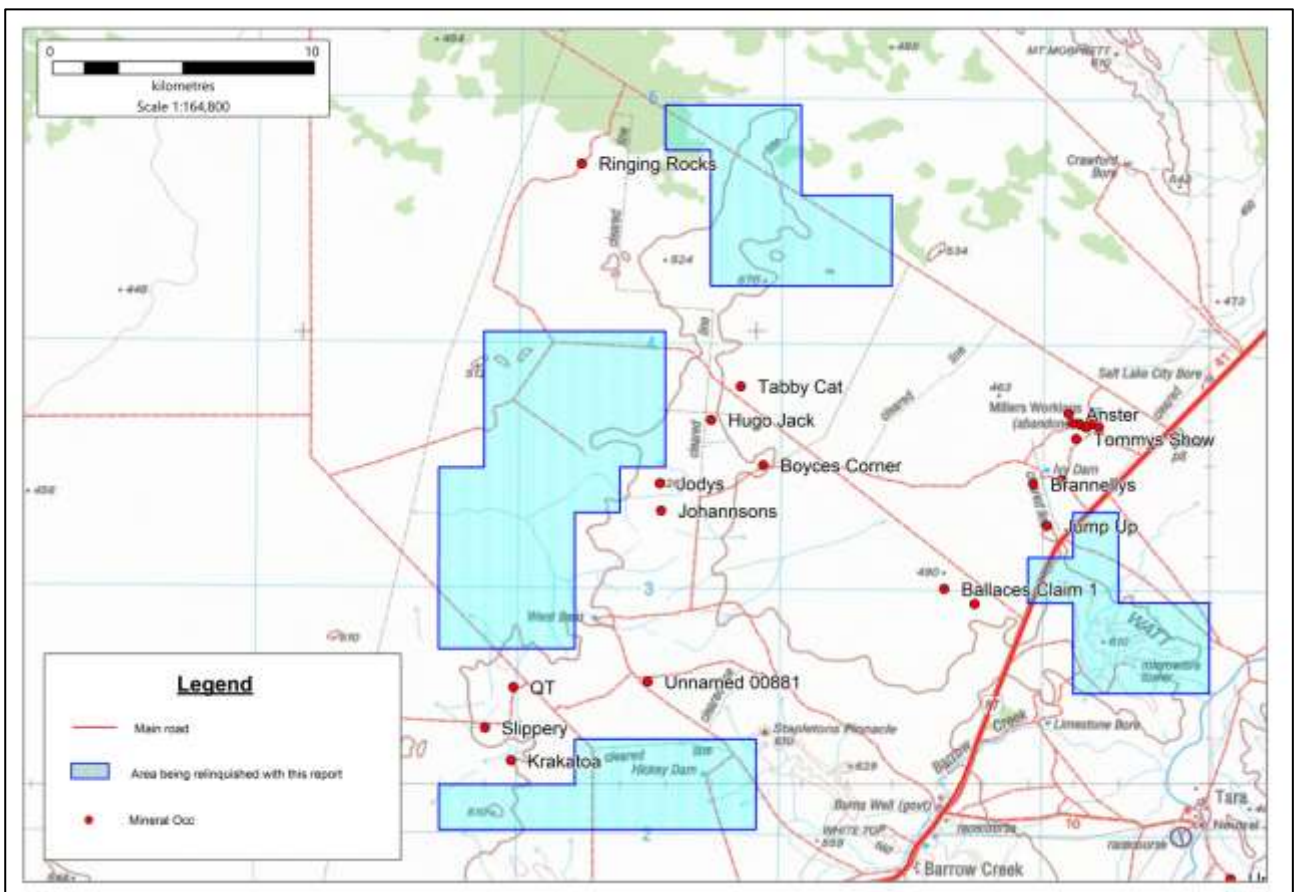


Figure 3: Regional mineral occurrences

6. CXO EXPLORATION

During the first reporting period (02 August 2016 to 07 December 2017) the following key activities were undertaken on the area being relinquished:

- Literature review and development of an exploration model for the project area more broadly.
- As part of a broader project wide geochemistry sampling program 164 soils samples were collected from the area being relinquished (Figure 4). All soil samples returned low lithium of less than 32 ppm. The spatial data and results of these soil samples are included in Appendix 1.
- Cultural and Heritage Surveys were organized through the Northern Territory Aboriginal Areas Protection Authority (AAPA). Clearance advice for EL31058 was received from the AAPA on 16 February 2017,

Prior to any field work being undertaken Leon Vandenberg (contracted geologist to CXO) undertook reconnaissance visits to the Barrow Creek area in May 2016 and May 2017 to meet with Pastoral Station Landholders and assess logistics.

CXO has commissioned an AAPA heritage clearance, the results of which have been received. This will allow drilling on EL31058.

During 2017 through to 2020 CXO’s key objective has been to make Darwin and CXO’s Finnis Lithium Project near Darwin a central processing and global transport hub for NT lithium and spodumene production. Consequently, on-ground exploration activities were not conducted in the relinquished area of EL31058.

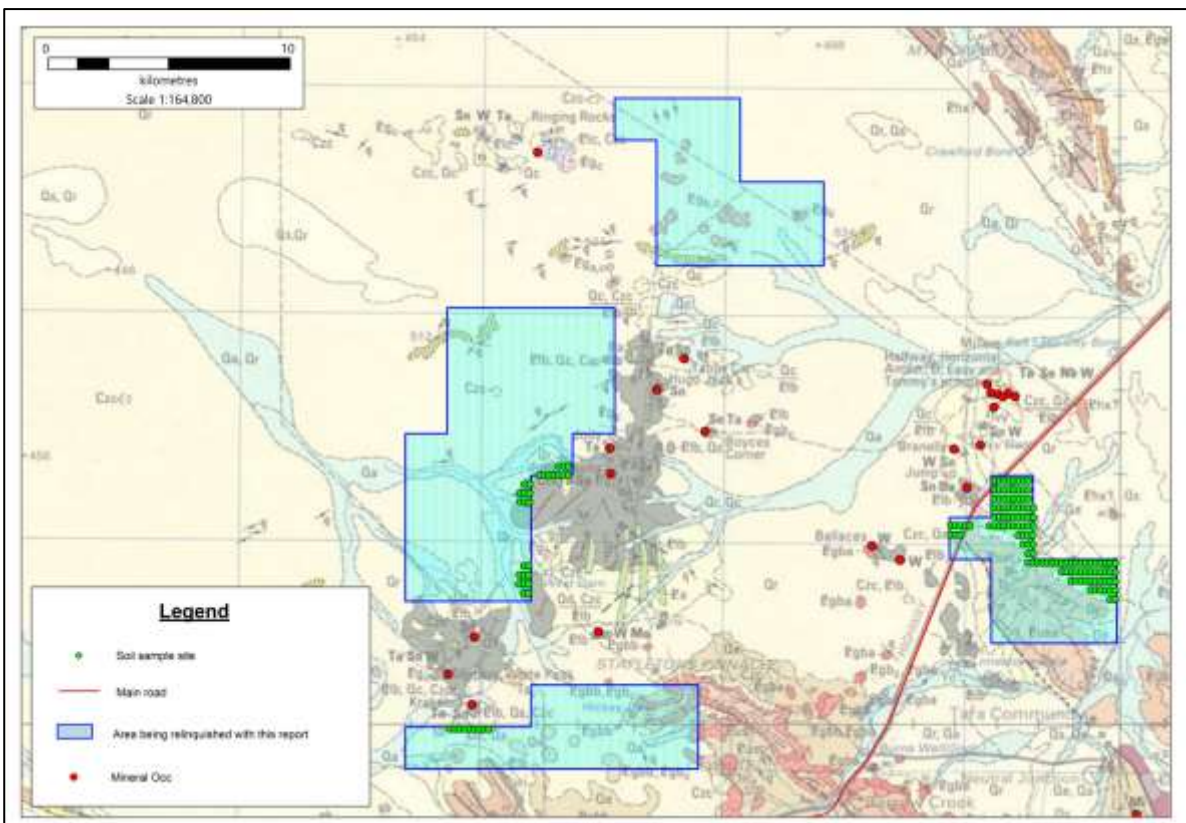


Figure 4: Soil samples collected from the relinquished portion of EL31146

7. REHABILITATION

No ground disturbing work or rehabilitation was undertaken prior to relinquishment.

8. CONCLUSIONS AND RECOMMENDATIONS

Following a review of CXO's tenure in the Northern Territory the company has decided to relinquish 58 blocks (185.49 km²) of EL31058. This review takes into consideration previous work carried out on the region in addition to CXO's ongoing commitment to the Finniss Lithium Project.

9. REFERENCES

Bagas PW & Haines 1990. Barrow Creek, Northern Territory (First Edition). 1: 250 000 geological map series, SF53-6. Northern Territory Geological Survey, Darwin.

Claoué-Long JC, Edgoose CJ and Worden K, 2008a. A correlation of Aileron Province stratigraphy in central Australia. *Precambrian Research* 166, 230 –245.

Claoué-Long JC, Maidment D and Donnellan N, 2008b. Stratigraphic timing constraints in the Davenport Province, central Australia: a basis for Proterozoic correlations. *Precambrian Research* 166, 204 –218.

Cogar PE, 1972. Geological Report, “D A” Copper Nickel Project. Kewanee Australia Pty Ltd. Northern Territory Geological Survey, Open File Company Report CR1972-0072.

Cross A, Claoué-Long J, Scrimgeour IR, Crispe AJ and Donnellan NC, 2005. Summary of results. Joint NTGSGA geochronology project: northern Arunta and Tanami regions 2000-2003. Northern Territory Geological Survey, Record 2005-003.

Cross AJ and Crispe AJ, 2007. SHRIMP U-Pb analyses of detrital zircon: a window to understanding the Paleoproterozoic development of the Tanami region, northern Australia. *Mineralium Deposita* 42 (1–2), 27–50.

Donnellan N, 2008. Mount Peake and Lander River, Northern Territory. 1:250 000 geological map series explanatory notes, SF 53-05, SF 53-01. Northern Territory Geological Survey, Darwin.

Dunlop RB, 1942. Report on the Barrow Creek, Sterling and Enningie fields. Northern Territory Mines Branch, Report.

Dunster JN, Kruse PD, Duffett ML and Ambrose GJ, 2007. Geology and resource potential of the southern Georgina Basin. Northern Territory Geological Survey, Digital Information Package DIP007.

Forsythe DL 1982a. Final report on 1981 exploration program Barrow Creek. R.B Mining. Northern Territory Geological Survey, Open File Company Report CR1982-0034.

Forsythe DL 1982b. Final report on exploration program, Barrow Creek, tantalum-tin prospect Northern Territory. R.B Mining. Northern Territory Geological Survey, Open File Company Report CR1982-0054.

Frater KM, 2005. Tin-tantalum pegmatite mineralisation of the Northern Territory. Northern Territory Geological Survey, Report 16.

Freeman MJ, 1978. A preliminary note on Miller's tantalite occurrence, Barrow Creek 1:250,000 sheet area SF53-6. Northern Territory Geological Survey, Technical Report 1978-029.

Freeman MJ, 1979. Notes on Miller's tantalite prospect. Northern Territory Geological Survey, Technical Report 1979-011A.

Goleby BR, Huston DL, Lyons P, Vandenberg LC, Bagas L, Davies BM, Jones LEA, Gebre-Mariam M, Johnson W, Smith T and English L, 2009. The Tanami Deep Seismic Reflection Experiment: an insight into gold mineralization and Paleoproterozoic collision in the North Australian Craton. *Tectonophysics* 472(1–4), 169–182.

Haines PW, Bagas L, Wyche S, Simons B and Morris DG, 1991. Barrow Creek, Northern Territory (Second Edition). 1:250 000 geological map series explanatory notes, SF 53-06. Northern Territory Geological Survey, Darwin.

Kruse PD, Dunster JN and Munson TJ, 2013. Chapter 28: Georgina Basin. In: Ahmad M and Munson TJ (compilers), 2013. 'Geology and mineral resources of the Northern Territory'. Northern Territory Geological Survey, Special Publication 5.

Longmire RA & Adrichem SM, 1999. Third and Final Report for EL9433 (Bambi) for the period 13/05/96 to 16/12/98, Barrow Creek District, Northern Territory, Normandy NFM Ltd, CR1999-0130.

Morris T, 1997. Fourth Annual Report for Exploration License 8177 for the period 29/09/96 to 28/9/97, Barrow Creek District, Northern Territory, Millers Prospect, Normandy Gold Pty Ltd, CR1997-0627.

McGain A, 1980. Annual report on EL2188. Northern Territory Geological Survey, Open File Company Report CR1980-0206.

Mujdrica S, 1994. Annual Report for the Exploration Licence 8177 for the period 29/10/93 to 28/10/94, Barrow Creek District, Northern Territory, Millers prospect, Barrow Creek 1:250000 Sheet SF 53-6, Volume 1 of 1, CR1994-0830.

Scrimgeour IR, 2013. Chapter 12: Aileron Province. In: Ahmad M and Munson TJ (compilers), 2013. 'Geology and mineral resources of the Northern Territory'. Northern Territory Geological Survey, Special Publication 5.

Smith J, 2001. Summary of results. Joint NTGS-AGSO age determination program. Northern Territory Geological Survey, Record 2001-007.

Smith MEH 1999a. Third and Final Report for EL8177 (Millers) for the period 29/09/93 to 15/12/98, Barrow Creek District, Northern Territory, Normandy NFM Ltd, CR1999-0126.

Wyche S, 1986. Geology of the Crawford 1:100 000 map sheet, Northern Territory. Northern Territory Geological Survey, Technical Report 1986-020.