

TITLE HOLDER: XAVIER RESOURCES PTY LTD

OPERATOR: NORTHERN COBALT LTD



GR503 Combined Annual and Final Report
Arunta Project
EL 31777, EL 31778 & EL 31779 for the period 02/10/2018 to
25/09/2019

November 2019

Target Commodities: Li, REE
Mapsheet 100K: Utopia (5853), Macdonald Downs (5953),
Delny (5852), Dneiper (5952)
Mapsheet 250K: ALCOOTA (SF5310), HUCKITTA (SF5311)

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Abstract

EL 31777, EL 31778 and EL 31779 were surrendered by Xavier Resources Pty. Ltd., a subsidiary company of Northern Cobalt Ltd in September 2019. Poor results were returned from initial surface geochemical sampling and for this reason Northern Cobalt Ltd could not justify any further work on the tenements.

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1 Introduction

EL 31777, EL 31778 and EL 31779 were surrendered by Xavier Resources Pty. Ltd., a subsidiary company of Northern Cobalt Ltd in September 2019, based on recommendations from a tenement consolidation review. Work completed during the reporting period included: geological desktop studies, reconnaissance, mapping and surface geochemical sampling.

1.1 Location & Access

EL 31777, EL 31778 and EL 31779 are located due north of the Macdonnell Ranges, central Australia approximately 120km north-east of Alice Springs. Access from Alice Springs is north via the Stuart Highway (70km), then east along the Plenty Highway (135km), then north along station tracks (note: the project area commences ~5km north of the highway, extends north for ~70km).

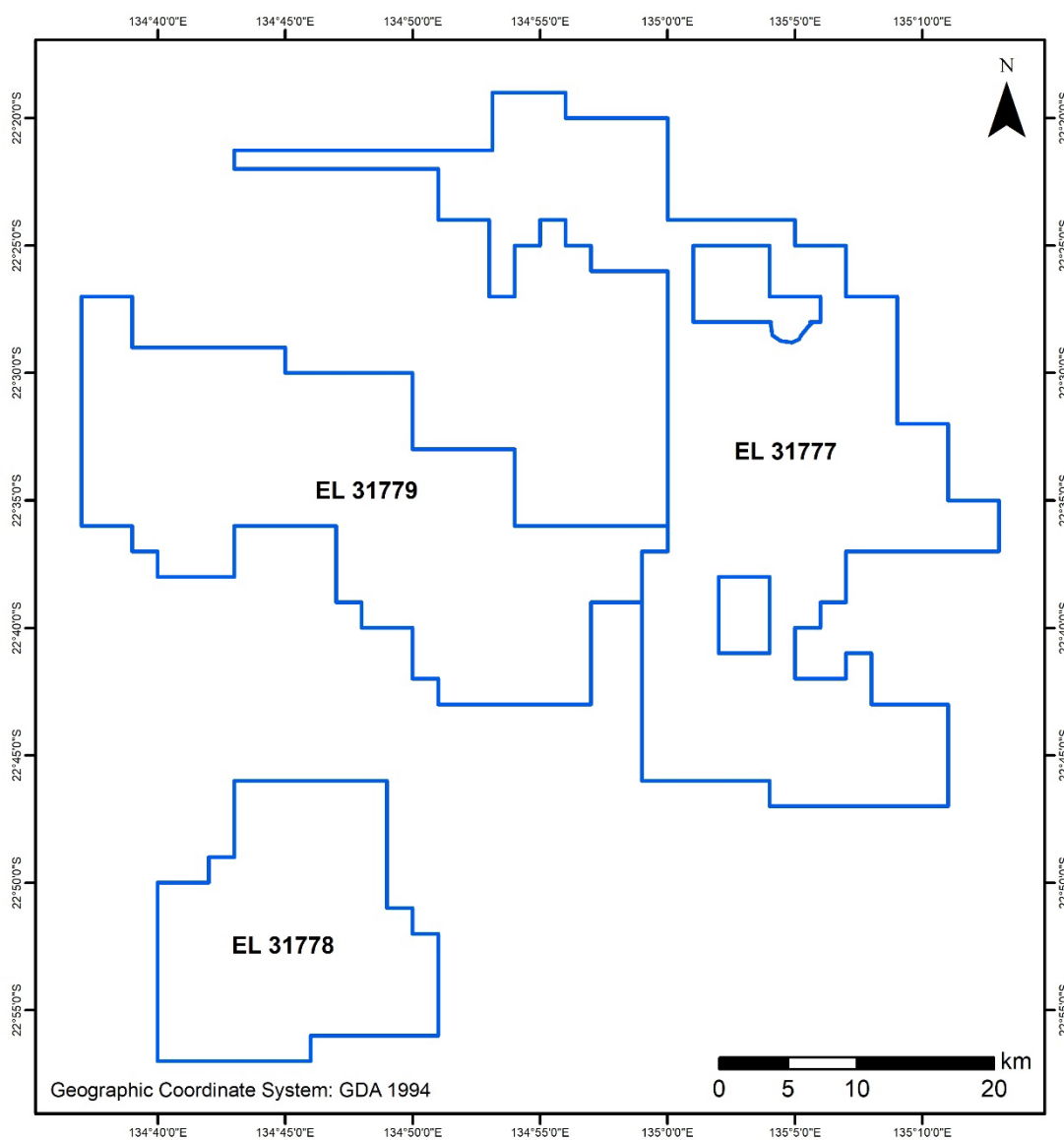


Figure 1: Location map for EL 31777, EL31778 and EL31779.

1.2 Regional Geology

The project area is located within the Arunta Region, along the faulted contact between the Palaeoproterozoic, Aileron Province and the Neoproterozoic to Palaeozoic, Irindina Province. The Arunta Region is a poly-deformed and metamorphosed basement terrain located along the southern margin of the North Australian Craton, which is unconformably overlain by the Ngalia, Amadeus, Murraba, Georgina and Eromanga Basins (Scrimgeour, 2003).

The Aileron Province is comprised of variably metamorphosed clastic sediments, meta-volcanic rocks, calc-silicate rocks, dolerite, mafic rock and granite and is prospective for metamorphosed VMS and carbonate replacement Pb-Zn-Cu, iron-oxide Cu-Au, orogenic Au, W(-Mo), Sn, mafic-hosted Ni-Cu, vermiculite, hydrothermal U, and apatite- and pegmatite-hosted REE-U(-P) (Scrimgeour, 2003).

The Irindina Province is a fault bounded metasedimentary and igneous province that formed a deep depocentre within the Centralian Super-basin and was metamorphosed to grades of granulite to amphibolite facies during the Ordovician (Scrimgeour, 2003). The dominant rock types include metasedimentary gneiss, quartzite, mafic amphibolite and felsic migmatite and the province is considered prospective for Ni-Cu sulphides, skarn Cu and pegmatite-hosted REE (U) (Scrimgeour, 2003).

The Georgina Basin is a Neoproterozoic to Palaeozoic intracratonic basin that was initiated as part of the Centralian Super-basin and unconformably overlies the Aileron Province (Dunster et al., 2007). The basin is prospective for sedimentary phosphate and contains several base metals occurrences and frequent oil shows (Dunster, et al., 2007)

1.3 Local Geology

The project area is dominated by Arunta Region, Palaeoproterozoic Aileron Province granites and gneisses with lesser components of and Strangways Metamorphic Complex and Reynolds Range Group in the north. The southern project area is dominated by Aileron Province Lander Rock beds. The north-east fringe of tenure is overlain by south-west margin of the Georgina Basin (STRIKE, 2019).

Surface geology is dominated by in-situ regolith, including slightly to variably weathered bedrock on erosional plains, rises, hills and plateau surfaces. A lesser component of transported alluvial regolith extends across the project area, trending south-west to north-east (STRIKE, 2019)

1.4 Previous Exploration

Historic exploration has focused on shear hosted copper, vein and sediment-type uranium, kimberlitic intrusions (diamonds), IOCGU (iron oxide copper gold uranium) and ISCG (iron sulphide copper gold) mineralisation.

Table 1: Previous Exploration Summary (adapted from Mackie, 2017)

Year	Company	Description
1970	CPM	Targeting the Perenti Cu prospect – IP survey, 3 diamond holes
1971	Kratos Uranium NL	Airborne radiometrics
1983	WMC	Stream sediments
	CRAE	Ground magnetics, rock chips, soils and auger drilling
	Uranerz Pty Ltd	Scintillometry, rock chips, radon survey.
1990	Roebuck Resources	Magnetic and non-magnetic lag sampling
2000	Rio Tinto	Heliborne HoistEM, rock chips, 4 deep drillholes
2002	Tanami Gold NL	Rock chips
2007	TGNL / Mithril JV	Magnetic/lateritic lag, rock chips, re-assay historic core, VTEM
2007	Hale Energy	AC Drilling (targeting uranium), heliborne SkyTEM
2009	ABM Resources	Desktop only

2 Work Completed

2.1 Geological Activities & Office Studies

A desktop review on tenure was commenced during the reporting period. This aided the design of a surface geochemical sampling program. Field reconnaissance and mapping was also undertaken.

Extensive surface sampling was completed on EL 31777, whereas large areas of quartzite were mapped on EL 31778 (i.e. non-prospective), so sampling was kept to a minimum. Reconnaissance across EL 31779 in conjunction with the desktop review indicated the area was prospective and warranted detailed sampling, although this did not eventuate.

2.2 Geochemical Activities

Geochemical surface sampling included 2667 soil samples and 23 rock chips, which were assayed for a comprehensive element suite including: Ba, Ca, Cr, Fe, K, Li, Mg, Mn, P, S, Sc, Si, Ti and V determined by Inductively Coupled Plasma (ICP) Optical Emission Spectrometry and Ag, As, Be, Bi, Cd, Ce, Co, Cs, Cu, Dy, Er, Eu, Gd, Ge, Hf, Ho, In, La, Lu, Mo, Nb, Nd, Ni, Pb, Pr, Rb, Re, Sb, Sm, Sn, Sr, Ta, Tb, Th, Tl, Tm, U, W, Y, Yb, Zn and Zr determined by Inductively Coupled Plasma (ICP) Mass Spectrometry.

The most extensive sampling was completed on EL 31777, however Li results were disappointing with a maximum rock chip value of only 210ppm (sample AR1066).

Best Total REE (i.e. combined La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb and Lu) value of 3090ppm was in soil sample SA3014.

In addition to the afore mentioned samples, 1 rock chips were collected off property and 455 soils samples, 10 rock chips and 1 stream sediment were taken on ELA 31776 prior to grant. The soil samples tested all main targets, including old mica mines and mapped intrusive granites. No significant geochemical results were noted, except 1 single point Li 100ppm (Note: sample was Fe rich in Tertiary sediments), with no surrounding geochemical support. For this reason, the offer of grant was never excepted, however in good faith Northern Cobalt has provided data in addition to the data submitted with this report.

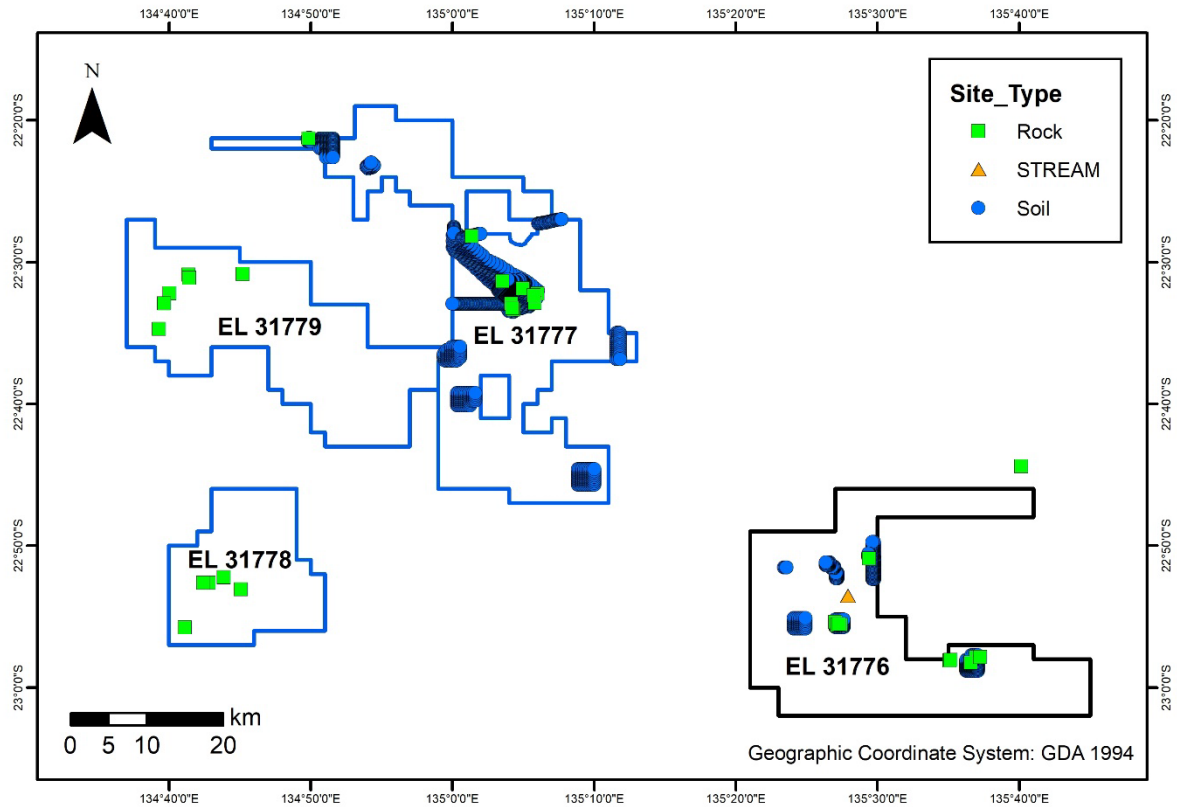


Figure 2: Location map for soil, stream and rock chip samples (Exploration Index Map).

3 Conclusion & Recommendations

Poor results were returned from initial surface geochemical sampling and consequently no drill targets were defined. After completing a tenement consolidation review on all the Arunta Project tenements, Northern Cobalt opted to relinquish EL 31777, EL 31778 and EL 31779.

4 References

- Dunster, J.N., Kruse, P.D., Duffett, M.L. and Ambrose, G.J., 2007. Geology and Resource Potential of the Southern Georgina Basin. NTGS, DIP007.
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