



**INDEPENDENCE GROUP NL**  
ABN 46 092 786 304

# **FINAL SURRENDER REPORT**

## **TENEMENT EL27558**

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**Distribution**  
Department of Resources – Minerals & Energy (1)  
Independence Group NL (Perth) (1)

**Project Name:** Mordor

**Combined Reporting Number:** N/A

**Tenement Numbers:** EL27558

**Tenement Operator:** Independence Group NL

**Tenement Holder:** Independence Group NL

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## BIBLIOGRAPHIC DATA SHEET

**Project Name:** Mordor  
**Combined Reporting Number:** N/A

**Tenement Numbers:** EL27558

**Tenement Operator:** Independence Group NL

**Tenement Holder:** Independence group NL

**Date of Grant:** 12<sup>th</sup> April 2010

**Expenditure Commitment:** \$30,000

**Report Title:** Final Surrender Report Tenement EL27558

**Report Period:** 12<sup>th</sup> April 2010 to 11<sup>th</sup> April 2012

**Author:** David Haines

**Date of Report:** 30<sup>th</sup> May 2012

**1:250 000 map sheet:** Alice Springs SF 53-14  
**1:100 000 map sheet:** Riddoch 5851

**Target commodity:** Ni-Cu-PGE, Au

**Geological Province:** Arunta

**Geological Units Targeted:** Mafic-ultramafic intrusives (Ni), contacts and shears (Au)

**Keywords:** Reconnaissance

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## 1.0 SUMMARY

Tenement EL27558 is located in central Australia, approximately 70km northeast of Alice Springs in the Northern Territory (Figure 1).

Since compilation of historic work was completed during the 2010-2011 reporting period, very limited field exploration has been undertaken.

A reconnaissance field trip during which some government geological mapping was ground checked, represents the only exploration for 2011-2012. Results of this work were very disappointing, resulting in a downgrade in prospectivity and subsequent surrender of the tenement.

## 2.0 INTRODUCTION

Tenement EL27558 is located in central Australia, approximately 70km northeast of Alice Springs in the Northern Territory (Figure 1).

Access is via the sealed Ross Highway from Alice Springs to the Arltunga turnoff, and then along unsealed roads and station tracks to the various tenements.

The topography is dominated by the hills and mountains of Harts Range and other smaller ranges scattered throughout the area.

The rugged terrain of these ranges limits vehicular access and causes maintenance problems with existing roads and tracks.

Vegetation consists of large tussocks of spinifex grass (*Triodia*) with scattered shrubs and low trees of Corkwood (*Hakea*), Cypress (*Callitris*), Witchetty Bush, Gidgee and Mulga (*Acacia*).

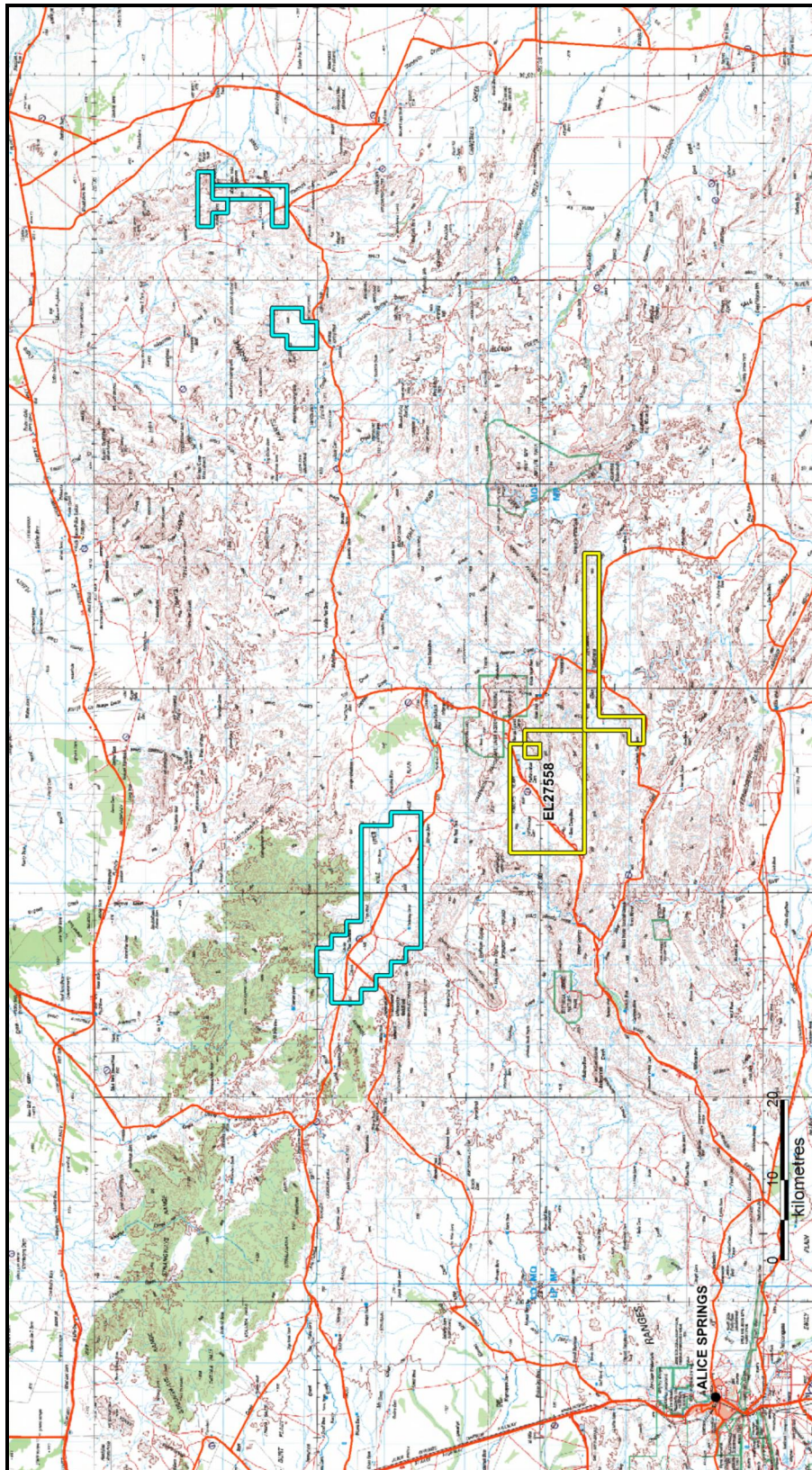
The dissected relief of Harts Range results in a high erosion rate, large sediment loads and a well-developed drainage system. Major rivers and creeks drain southeast into the Simpson Desert.

## 3.0 TENURE

EL27558 was granted to Independence Group NL on the 12<sup>th</sup> April, 2010.

**Table 1: Tenement Schedule**

Tenement	Area (km <sup>2</sup> )	Area (Blocks)	Rent	Expenditure Commitment	Grant	Expiry
EL27558	188.9	60	\$1,200	\$40,000	12/04/2010	11/04/2016



**Figure 1: Location of EL27558 (yellow). Other IGO tenure in Blue.**



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## 4.0 GEOLOGY

The following summaries are mainly taken from Bell (2010). The Arunta Province can be divided into three tectonic regions, each of which has undergone a separate history of metamorphism and deformation during the early to middle Proterozoic.

The Northern Arunta consists of low-grade metasediments of amphibolite and greenschist facies. It is separated from the Central Arunta by large granitoids.

The Central Arunta consists primarily of hypersthene-bearing augen gneiss, migmatitic and quartzofeldspathic gneiss and felsic and mafic granulite.

The Redbank Thrust is a 7-10km wide east-west trending zone of anastomosing mylonites that dips 45° to the north and separates the Central Arunta from the Southern Arunta.

These high strain mylonites are thought to be the result of reactivation of the Redbank Thrust during the Alice Springs Orogeny (400Ma – 390Ma).

The Southern Arunta, between the Redbank Thrust and the northern margin of the Amadeus Basin, consists predominantly of amphibolite-grade quartzofeldspathic and migmatitic gneiss with minor potassic granite.

Five major magmatic events have been recognised at ~1810Ma, ~1780Ma, ~1690, ~1635 and a much younger early Proterozoic event.

A sixth event at ~1135Ma has alkaline-ultramafic affinities.

Later mafic-ultramafic events may also have some significance for magmatic sulphide mineralisation in the region.

The area of EL27/558 has been mapped at 1:250,000 scale by the BMR and NTGS, with the tenement on the ALICE SPRINGS (SF53-14) sheet. This map sheet was published in 1983. A 1:100,000 geological map of the tenement area is available (“Arltunga-Harts Range Region”), covering the RIDDOCH (5851) and part of the FERGUSSON RANGE (5850) map sheets. The map by the BMR was published in 1984.

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## 5.0 PREVIOUS EXPLORATION ACTIVITIES

The Arunta Province has a very limited history of mining and exploration, and although several mines have been operated, total production is low.

Deposits mined include gold, copper, lead and zinc, tin-tungsten-tantalum, fluorite and mica.

Exploration has been limited due to the rugged terrain and remoteness, as well as the perception that the Arunta Province is too highly metamorphosed and has had too protracted a tectonothermal history to host significant mineralisation.

However, recent exploration efforts and geochemical studies indicate that the western and central portions of the Arunta Province have the potential to host Ni-Cu-Co mineralisation, while the eastern portion has the potential to host orthomagmatic and hydrothermal PGE mineralisation.

Some potential also exists for structurally controlled hydrothermal polymetallic deposits of Cu-Au±PGE±Ag±Pb.

### 5.1 Gold

Gold was first discovered at Arltunga in April 1887, when Joseph Hele and Isaac Smith panned alluvial gold from a dry creek bed near Paddy's Rockhole.

By 1888 between 150 and 200 prospectors were camped in the area and central Australia's first gold rush was underway.

Mining activity decreased significantly by 1913, primarily due to a lack of water.

In 1937, geologist, P. Hossfeldt, estimated that a total of 19,960 ounces of gold bullion had been produced from Arltunga and White Range.

White Range was briefly reworked again in the 1950's.

In the 1980's prospectors returned to Cavenagh Range with gold pans, metal detectors and dolly pots to assess the potential of gold bearing quartz-pyrite veins proximal to the Woolanga Lineament.

Mithril Resources announced significant Au results from about 900m south of EL27/557 in an ASX announcement in December 2010 (named the Tibbs Prospect).

### 5.2 Uranium

During the nineties Japanese Government owned PNC Exploration (Australia) Pty Ltd ("PNC") explored vast tracts of Western Australia, South Australia and the Northern Territory in search of uranium and other commodities.

Their Harts Range Project was located in the eastern portion of the Arunta Province and under underwent extensive exploration including geological and structural mapping, costeaning, rock chip sampling, soil sampling, stream sediment sampling, petrology, airborne magnetic surveys, airborne radiometric surveys, ground magnetic surveys, ground spectrometric surveys and diamond drilling.



These exploration efforts highlighted several anomalous uranium values, the best of which was 633,000ppm U, 40,500ppm Pb and 5,200ppm Th from rock chip sample HR05313.

### **5.3 Base Metals**

In the early seventies, companies like Russgar Minerals NL (“Russgar”) and Central Pacific Minerals NL (“Central”) completed mapping, costeaning, rock chip sampling, soil sampling, stream sediment sampling, ground magnetic surveys and downhole hammer drilling.

Russgar delineated a magnetic conductor over 1,200 feet in length and collected rock chips up to 5.6% Cu and 6.9% Zn from cupriferous outcrop traced for over 3 miles at its Oonagalabi Prospect.

Central discovered a lenticular Pb-Zn±Cu horizon associated with a former calcareous sandstone horizon at its Winnecke Project. This mineralised horizon can be traced 12 miles east of their Rankins Prospect and returned rock chips up to 180ppm Cu, 3,800ppm Pb, 210ppm Zn, 12ppm Ag and 1.80ppm Au.

In the late eighties Petrocarb Exploration NL (“Petrocarb”), in joint venture with Peko-Wallsend Operations Ltd, evaluated mineralisation at Blueys Silver Prospect. Mineralisation consisted of secondary Ag-Pb-Cu mineralisation associated with barite and quartz veining in dolomites and dolomitic sandstone. Rock chips returned up to 10,000ppm Ag and drilling returned up to 55g/t Ag.

Previously mentioned PNC, whose focus was primarily uranium, also discovered some highly anomalous base metal results in the 1990’s.

Rock chip sample HR01436 returned 195ppb Au, 16ppm Ag, 31,000ppm Cu and 370ppb Pt+Pd from malachite stained, epidote-sericite-quartz altered wall rock in intermediate granite adjacent to a quartz blow.

Similarly, rock chip sample HR02378 1,800ppb Au, 35ppm Ag, 190,000ppm Cu and 160ppb Pt+Pd from a malachite stained, clay altered pod of copper mineralisation in granite.

### **5.4 Ferrous Metals**

Nickel exploration began in the seventies, when CRA Exploration Pty Ltd (“CRA”) started its search for economic nickel sulphide mineralisation associated with mafic-ultramafic intrusives.

Work completed by CRA included helicopter reconnaissance, mapping, stream sediment sampling, rock chip sampling, soil sampling, petrology, ground magnetic surveys and ground scintillometer surveys.

Results were considered to be disappointing with average values of 300ppm Ni and 600ppm Cu – although rock chip sample 192361 (collected from a serpentinised mica-peridotite containing traces of pentlandite-pyrrhotite-chalcopyrite) did return 3,000ppm Ni.

In addition, rock chip samples collected from a small gossanous feature over a shonkinite returned up to 1,950ppm Ni, 5,000ppm Cu, 140ppm Pb and 300ppm Zn.

Very few companies explored the Arunta Province for nickel sulphide mineralisation during the eighties and nineties, but this has changed in recent years.

Mithril Resources Ltd (“Mithril”) has had significant exploration success at its Huckitta Project with the discovery of six new nickel sulphide prospects and three new copper sulphide prospects.

Nickel sulphide mineralisation appears to be associated with weakly to unaltered olivine bearing gabbroic intrusions, while copper sulphide mineralisation appears to be associated with highly metamorphosed amphibolites.

Reverse circulation drilling at the Baldrick Prospect returned 9m @ 0.48% Ni and 0.37% Cu from BARC006.

Recent diamond drilling at the Basil Prospect returned 59m @ 0.63% Cu and 0.06% Co from LBDD035.

## **6.0 EXPLORATION COMPLETED 2010-2012**

### ***6.1 Geological Reconnaissance***

A reconnaissance trip was undertaken in order to confirm the presence of mapped mafics and ultramafics and to examine an area representing the possible extension to a competitor’s prospect on a neighbouring lease. The areas mapped as mafic/ultramafic intrusive rocks were all interpreted as chamockites representing upper amphibolite facies rocks of likely metasedimentary origin, with no prospectivity for magmatic Ni-Cu sulphide deposits. As a consequence of this work no further exploration was carried out.

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