

Operator: Crossland Strategic Metals Ltd

# **Charley Creek EL 25657**

Arunta Region

Partial Relinquishment Report for EL 25657 for the period 30 August 2007 to 29 August 2017

Tenement Holders: Crossland Nickel Pty Ltd; Essential Mining Resources Pty Ltd; Western Desert Resources Base Metals Pty Ltd

P Melville October 2017

## **Summary**

EL 25657 was granted to Alistair Mackie on 30th August 2007. The licence was transferred to Western Desert Resources Base Metals Pty Ltd, (WDRBM) a wholly owned subsidiary of Western Desert Resources Ltd (in Liquidation) on the 17th June 2008. WDRBM then entered into a short-lived joint venture with NuPower Resources Ltd. In July 2010, Crossland Nickel Pty Ltd entered into a Farm-In arrangement with WDRBM to joint venture the licence. Crossland Nickel is a wholly owned subsidiary of Crossland Strategic Metals Limited (Crossland), who is the Operator of the licence. In late 2015, the new joint venture of Crossland Nickel Pty Ltd and Essential Mining Resources Pty Ltd (EMR) purchased an 80% share in the licence. WDBRM still retains it's 20% share.

In August 2017, Crossland relinquished 72 sub-blocks.

EL 25657 comprises part of Crossland's Charley Creek project. The project area is considered prospective for Rare Earths Elements (REE), Uranium and other metals, although the focus is now exclusively centred on the Rare Earths potential. The remaining portion of the subject licence is considered an integral part of the potential REE resource.

## **Bibliographic Data**

Report Title	Partial Relinquishment Report for EL 25657 for the period 30 August 2007 to 30 August 2017
Author	Paul Melville
Project Name	Charley Creek
Tenement Number	EL 25657
Tenement Holder	Crossland Nickel Pty Ltd; Essential Mining Resources Pty Ltd; Western Desert Base Metals Resources Pty Ltd
Operator	Crossland Strategic Metals Limited
Commodities	Rare Earth Elements, Uranium
Tectonic unit	Arunta Region
1:250 000 MapSheet	Hermannsburg (SF53-13) Alice Springs (SF53-14)
1:100 000 MapSheet	Anburla 5551 Burt 5651
Keywords	Arunta Region, Charley Creek, REE, Uranium

This document and its content are the copyright of Crossland Strategic Metals Limited and their Joint Venture Partners for the Charley Creek Project. The document has been prepared for submission to the Northern Territory Department of Mines and Energy as part of the tenement reporting requirements as per the Minerals Titles Act (NT). Any information included in the report that originates from other sources is listed in the "References" section at the end of the document. All relevant authorisations and consents have been obtained. Crossland Strategic Metals Limited authorise the department to copy and distribute the report and associated data.

# **Table of Contents**

1	Introduction	5
2	Tenure Details	5
3	Geology	6
4	Previous Exploration	7
5	Western Desert Resources	7
6	Western Desert Resources and NuPower Resources	7
7	Crossland - Western Desert JV	8
8	Conclusions	9
9	References	9

## **Figures in Text**

Figure 1 Relinquished and Retained Portion of Licence

# **Appendices Accompanying Report**

- **Appendix 1** Figures Stream Sediment sample Locations
- Appendix 2 Stream Sediment Sampling Analytical
- Appendix 3 Airborne Mag-Rad Survey Images

## **1** Introduction

The relinquished portion of EL 25657 is centred approximately 50 km northwest of Alice Springs, and is located on both the Hamilton Downs and Bond Springs pastoral leases. The Tanami and Stuart Highways are located immediately north and east respectively. Access within the licence area is via station tracks and fence lines.

Crossland commenced exploration activities on EL 25657 in 2010 following signing of a Heads of Agreement with WDRBM Pty Ltd. Alluvial-hosted REE mineralisation is the target following successful discoveries made by Crossland on its adjacent Charley Creek licences. Prior to Crossland's involvement, three years of exploration activities were supervised by WDRBM.

This report covers all work carried out on the 72 sub-blocks relinquished by Crossland in August 2017. The works include those activities carried out by WDRBM and NuPower from 2007 to 2010 and those by Crossland since commencement of their joint venture with WDRBM in mid 2010.

## 2 Tenure Details

EL 25657 was granted to Alistair Mackie on 30<sup>th</sup> August 2007. The licence was then transferred to WDRBM, a wholly owned subsidiary of Western Desert Resources Ltd on 17<sup>th</sup> June 2008. The original area granted was 240 blocks (742.09 km<sup>2</sup>), which was subsequently reduced to 130 blocks (396.68 km<sup>2</sup>) after Year 2.

On July 1 2010, a Heads of Agreement relating to Crossland's Farm-In on the licence was signed between Crossland and WDRBM.

On 14 August 2013 the first renewal application was lodged with DPIR Mines and Energy (then NTDME). In February 2014, the department approved that renewal for two (2) years, expiring on the 29 August 2015. A further two year period of tenure was applied for in 2015 and was subsequently granted.

In August 2017, Crossland submitted to the DPIRME a notification that it was relinquishing 72 of the current 130 sub-blocks (see Figure 1). The reduction was confirmed by DPIR on 12 September 2017 and the date of relinquishment stated as 30<sup>th</sup> August 2017.

In late 2014, Western Desert Resources Pty Ltd was placed in receivership. Crossland has been corresponding with the Receivers since that time in matters relating to the licence. Transfer documents giving Crossland majority ownership of the licence were lodged with NTDME in 2015; the transfer was eventually accepted and the current licence holders are as follows: Crossland Nickel Pty Ltd 45.024%, EMR Pty Ltd 34.976% and WDRBM 20%. Crossland Strategic Metals Ltd remains Operator of the licence. Crossland has continued to approach the Receivers with the proposition to purchase the remaining 20%, without any success to date.



Figure 1. EL 25657 Image showing blocks for relinquishment and area retained.

## 3 Geology

The project area straddles the contact between the Aileron Province and the Warumpi Province of the Palaeoproterozoic Arunta Block. The Aileron Province forms part of the North Australia Craton and is aged between 1865-1740 Ma. The Warumpi Province is aged between 1690-1600 Ma and is thought to have accreted onto the craton at 1640 Ma.

Geology of the tenement and surrounds is shown in Figure 3. The Aileron Province is represented by the Illyabba Metamorphics, consisting of biotite gneiss, amphibolite and granitic gneiss, and the Strangways Metamorphic Complex, consisting of granitic and basic gneisses. It is separated from the granitic gneiss and quartzite of the Warumpi Province to the south by the Charles River Thrust/Fault zone. The Warumpi Province is made up of the Iwupataka Metamorphic Complex, the Teapot Granite Complex and the Madderns Yard Metamorphic Complex. The Redbank Thrust Zone, which crosses the northern part of the licence consists of mylonitic rocks and forms a prominent scarp. Tertiary sediments occur north of the thrust with some isolated outliers of Arunta age rocks.

## 4 **Previous Exploration**

#### **Other Companies**

#### CRA Exploration (1971-72)

CRA Exploration explored the northern and western parts of the project area for uranium and base metals. A stream sediment survey was completed and station bores were water sampled. Vehicle-borne scintillometer traverses were completed during the collection of the station bore samples. No anomalous base metal or uranium values were reported from the stream sediment survey. Anomalous uranium and radon values were found in water samples from the Bulldust and New Well bores, both located within the current EL.

#### CRA Exploration (1981-82)

The company explored EL 3100 during 1982 for sedimentary-hosted uranium deposits. This tenement was situated immediately north of EL25657. Two holes were drilled south of Hamilton Downs homestead; neither intersected any uranium mineralisation.

## 5 Western Desert Resources

#### 2007-2008 Year 1

- 39 stream sediment samples collected. BLEG sampling for Au; multi-element analysis by ICP-MS. ALS Chemex Laboratories. See Appendix 2 for analytical results.
- Results : no indication of gold. Minor base metal response. Several anomalous values of Ce, La, U and Th. A sample of -5mm stream sediment was collected from each site. This was split off-site and one portion was retained for BLEG analysis for gold and the other portion was sieved to -40# for multi-element analysis by ICP-Mass Spectrometry. See Appendix 1\_01 for sample analysis.

## 6 Western Desert Resources and NuPower Resources

#### 2008-2009 Year 2

- Gravity survey conducted by Geoscience Australia and NTGS. A line of gravity stations were located within the relinquished area.
- No ground activities conducted.

#### 2009-2010 Year 3

• Minimal work completed. On-ground anomaly follow-up.

# 7 Crossland - Western Desert JV

#### 2010-2011 Year 4

- Stream sediment sampling.
- On-site sample processing.

Batch 1 stream sediment samples (Appendix 2, 2011a) underwent HL (Heavy Liquid) separation at Diamond Recovery Services P/L in Perth prior to being analysed at Australian Laboratory Services. The HL process utilises TBE (Tetrabromoethylene) as the heavy liquid used to separate the light minerals from the heavies. Following this process the samples were forwarded to ALS for analysis. Analytical procedures included ME-MS81h and ME-XRF12

#### 2011-2012 Year 5

- On-site sample processing.
- Off-site metallurgical Test Work.

Batch 2 samples (Appendix 2, 2011b), collected the previous reporting year underwent sieving and Wilfley Table processing on-site . An aliquot of the processed sample was taken and forwarded to Genalysis/Intertek in Adelaide. The aliquots were assayed by methods FB6/MS and FB6/OE. This method utilises a lithium borate fusion which offers a relatively low temperature, aggressive digest that dissolves almost all geological samples while limiting losses due to volatilisation.

#### 2012-2013 Year 6

- Airborne Mag-Rad Survey by UTS, Perth, WA. The survey covered the entire licence. Figures illustrating the geophysical data for both the relinquished and retained area of the licence are presented in Appendix 3.
- Pre-feasibility and Scoping Studies.

#### 2013-2014 Year 7

- 3 stream sediment samples collected within the relinquished portion. The samples were concentrated using the on-site Wilfley Table. Two concentrate samples were analysed by Genalysis, Perth. See Appendix 2 for analytical results.
- Apportionment of costs related to the project wide Scoping Study and preliminary Environmental studies for EIS.

#### 2014-2015 Year 8

- No on-ground activities for the period due to Panconoz takeover and on-going JV negotiations.
- Apportionment of project related costs.

#### 2015-2017 Years 9 and 10

- No on-ground activities for the period.
- Apportionment of project related costs.

## 8 Conclusions

The farm-in and subsequent joint venture with WDRBM was entered into as the licence area represented a large and strategic piece of land that would potentially add to the Charley Creek Project REE resource.

Several years of exploration by the original title holder, including a tenement-wide regional geochemical stream sediment survey in 2008, pointed to the presence of a large area of potential REE source rocks within the west MacDonnell Ranges. The latter area of 'hard rock' covered approximatel y 70% of the original tenement. Further sediment sampling by Crossland in 2011 identified the presence of Xenotime, a source of HREE, making the alluvial resource contained within the licence of increased importance.

The decision to relinquish the area, which is the subject of this report, is that it is almost entirely 'hard rock' and therefore of no economic importance to the company.

## **9** References

Buskas, A.J., Ainsley, P.J. & Porter, J., 2012: COMBINED ANNUAL REPORT ELS ELS 24281, 25230, 27283, 27284, 27338, 27358, 27359, 28154, 28155, 28224, 28225 & 28226. CHARLEY CREEK PROJECT (NT) 7/02/2011 TO 6/02/2012

Fraser, N., 1977. Annual Report for period 12 November 1976 to 11 November 1977. EL1323 Razorback, Esso Australia Ltd., CR78/27

Home, D.P., Wilkinson D.L. & McCoy, A.D., 1997: Combined final report for period ending 14 Sept, 1997. Mount Hay-Sixteen Mile Project. ELs 9565/9566/8126/8988. CRAE, CR1988-008.

Hughes, F.E. and O'Sullivan, K.N. 1973: Final Report – Milton Park EL519.CRAE. CR1973-0120.

O'Sullivan, F.R. and Tham, G.H.P, 1972. Final Report AP3384 and EL440 Mt Hay. CRAE, CR1972-0066.

Shaw, R.D., Warren, R.G., et al 1995; Hermannsburg (1:250000 Scale Map). Australian Geological Survey Organisation, Canberra.

Warren, R.G., Shaw, R.D. 1995, Hermannsburg NT – 1:250000 Geological Series. NTGS. Explanatory Notes SF53-13.

Wembenyui, E.W. and Buskas, A.J., 2011. Combined Annual Report ELs 24281, 25230, 27283, 27284, 27358 & 27359 Charley Creek Project 7/02/2010 to 6/02/2011.