



Operator: Crossland Strategic Metals Ltd

# Charley Creek – Hamilton

Arunta Region

Partial Cancellation Report for EL 28226 for the period 8 March 2011 to 7 July 2016

Tenement Holders: Crossland Nickel Pty Ltd

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11 August 2016

## Summary

EL 28226 was granted to Crossland Nickel Pty Ltd (Crossland) on the 8<sup>th</sup> March 2011 for a period of 6 years. A percentage ownership of the licence is currently being transferred to Crosslands new JV partner, Essential Mining Resources Pty Ltd (EMR).

The subject licence is one of 19 tenements that comprise the Charley Creek Rare Earth Element (REE) Project. Due to an underspend of the licence's exploration expenditure covenant, NTDME have penalised the company and cancelled 17 sub-blocks. Crossland accepted that penalty and chose the required number of blocks for surrender.

No on-ground work has been carried out within the surrendered blocks for the period covered by this report.

## Bibliographic Data

<b>Report Title</b>	Partial Cancellation Report for EL 28226 for the period 8 March 2011 to 7 Jul 2016
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<b>Project Name</b>	Charley Creek – Hamilton 226
<b>Tenement Number</b>	EL 28226
<b>Tenement Holder</b>	Crossland Nickel Pty Ltd
<b>Operator</b>	Crossland Strategic Metals Limited
<b>Commodities</b>	Rare Earth Elements
<b>Tectonic Unit</b>	Arunta Region
<b>1:250 000 MapSheet</b>	Alice Springs (SF53-14)
<b>1:100 000 MapSheet</b>	Burt
<b>Keywords</b>	Arunta Region, Charley Creek, Uranium, REE

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## 1 Introduction

Exploration Licence (EL) 28226 is located approximately 40 kilometres northwest of Alice Springs. The tenement lies within the Burt 1:100,000 and Alice Springs 1:250,000 geological map sheets. The location is illustrated in Figure 1. Access is via the sealed Tanami Highway, which is located just south of the property. Off-road access is provided by Station tracks and fence lines.

The tenement is one of nineteen licences that comprise Crossland’s Charley Creek Project. In recent years the primary target has been Rare Earth Elements (REE).

This report deals with seventeen sub-blocks that were cancelled by NTDME under Section 105 (1) (b) of the act. The cancellation was necessitated due to a shortfall in the required exploration expenditure within the subject tenement.

## 2 Tenure Details

EL 28226 was originally granted to Crossland Nickel Pty Ltd on 8<sup>th</sup> March 2011 for a period of six years. The licence comprised 39 sub-blocks, an area of approximately 122.9 km<sup>2</sup>. Crossland Nickel Pty Ltd is a wholly owned subsidiary of Crossland Strategic Metals Limited. EMR became Crossland’s joint venture partner in early 2016; a percentage ownership of the licence by EMR is in the process of being transferred.

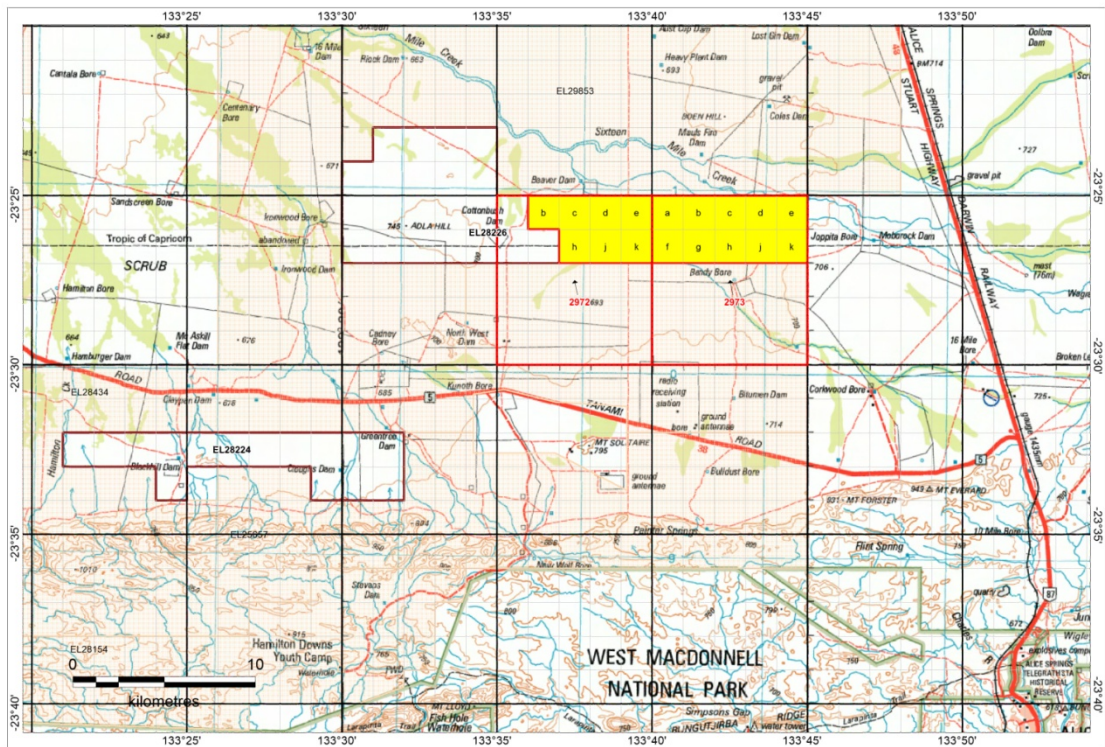
On 19 June 2016, Crossland received a Partial Cancellation Notice for the licence (Loss of Block Penalty). The penalty was for seventeen sub-blocks to be surrendered, a total area of 69.34 km<sup>2</sup>. Crossland nominated the following sub-blocks for cancellation:

Map Sheet 1:1,000,000	Map Sheet Blocks	Sub-Blocks
Alice Springs   2972		b c d e h j k
Alice Springs   2973		a b c d e f g h j k

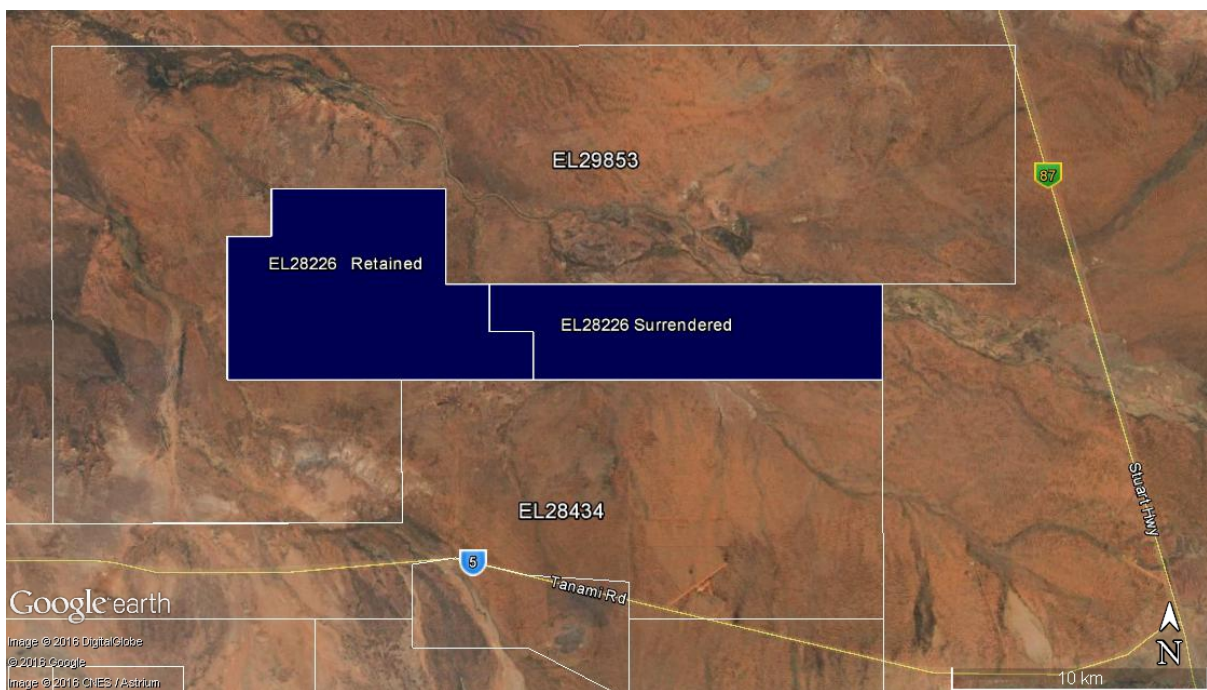
Total Number Of Sub-Blocks: 17

Total Area Of Surrender: 53.5736 (sq km)

Datum: GDA94



**Figure 1** Location map of EL 28226 illustrating Surrendered blocks



**Figure 2** Google Earth image of EL 28226 illustrating Surrendered and Retained areas



**Figure 3** Google Earth image showing current EL 28226 outline

### 3 Regional Geology

The project area lies within the Central Province of the Arunta Block on the southern margin of the North Australian Craton. The southern margin of this block is marked by a high strain zone, the Redbank Thrust Zone, which contains several mapped units. Most of the Central Province is granulite facies metamorphic grade with some retrograde zones of amphibolite facies. The oldest rocks are dated as Lower Proterozoic.

Much of the plains country to the north of the ranges is composed Quaternary and to a lesser degree Tertiary sediments. The Tertiary sediments have been described as sands, clays, siltstone, and conglomerates with some lignitic horizons. The Quaternary sediments are characterised by shallow alluvial fans of coarse gravels, sandy ephemeral creek deposits, sand and clay with a surficial covering of aeolian silts and sand with minor calcrete and carbonate deposits. The degree of cover formed by these sediments varies regionally.

The licence area is covered by various drainages composed of alluvial sands and silt. Red silt and sands are present between the channels. There are isolated occurrences mapped of a ferruginous capping on crystalline rocks.

## **4 Previous Exploration**

There is no indication of any previous exploration activities on the area covered by the surrendered blocks.

## **5 Exploration Rationale and Work Completed**

Initially, Crossland entered the region to explore for nickel-copper within the Mount Hay complex.

The recognition that the Teapot Granite had an anomalously high radiometric background caused a shift in exploration strategy. Due to the high uranium content of the granite, it was considered an ideal source rock for the formation of sedimentary uranium deposits. Crossland proposed that this mass of 'hot' granite could potentially supply sufficient uranium to form these types of deposits in the plains to the north of the foothills. Therefore, the underlying alluvial fans and buried paleochannels were considered prospective targets for calcrete-hosted uranium and "redox" zone-related concentrations respectively.

Crossland acquired several tenements along the northern fringe of the MacDonnell Ranges with the intention to explore for these types of sedimentary-hosted uranium deposits. Following the discovery of anomalous REE in aircore drillhole samples in EL 24281, the emphasis shifted again from uranium to alluvial-hosted concentrations of REE. The location of the subject tenement in relation to a complex of alluvial channels suggested a potential to host alluvial REE mineralisation.

There have been no exploration activities carried out by Crossland within the subject cancelled blocks.

## **6 Conclusions**

The surrendered ground could hold potential for the occurrence of alluvial REE mineralization given that it covered a subsidiary channel of the Sixteen Mile Creek complex. There is also the potential to contain buried Tertiary channels, which could provide a water resource.



## 7 References

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Shaw, R.D. et al 1978, Alice Springs NT – 1:250,000 Scale Map Geological Series. SF53-14. Bureau of Mineral Resources, Canberra.