

# Partial Relinquishment Report

Mount Dundas

ASF Metals Pty Ltd

Title: EL14/2007

Reporting Period From: 23 July 2007

To: 22 July 2014

Licensee: ASF Metals Pty Ltd

Address: Suite 2 Bennelong, 3B Macquarie Street, Sydney NSW 2000

Report Date: 11 August 2014

Grant Date: 23 July 2007      Expiry Date: 22 July 2014

Prepared for:

Mineral Resources Tasmania

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## Abstract

EL14/2007 is located approximately 7km east of Zeehan and access to the centre of the tenement is via gravel road from the Zeehan Highway to the mining centre of Dundas.

Previous exploration in the relinquished area has comprised geological mapping, rock chip sampling and soil sampling with no significant surficial geochemical results. As such the area will be relinquished.

## Keywords

File Name	
Location Name:	Dundas, Adelaide Creek
Earth Science Related Terms:	Geological Mapping, Soil Geochemistry, Rock-chip Geochemistry
Environment of Mineralisation:	
Commodities:	Lead, zinc, copper, gold
Exploration Methods:	Rock chip, soil sampling
Stratigraphic Name:	Oonah Formation, Mt Read Volcanics
Lithologic Name:	
Geological Province:	Dundas Trough
Geological Age:	Cambrian

**Table 1:** Key words associated with EL 14/2007

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## Data Files

EL 142007_20140811_01_goochem.txt	Rock Chip Geochemistry
EL 142007_20140811_02_goochem.txt	Soil Geochemistry

# Introduction

## EXPLORATION RATIONALE

Previous tenement holdings in the general area have been numerous; however the majority of exploration activity has been adjacent to, rather than coincident with, the present tenure.

Previous exploration appears to have been most intensive in the 1980's/1990's, with virtually no co-incident exploration in the immediate area of EL 14/2007 from 2000 until the present. Activity within the relinquished portion has included geological mapping and geochemical grid sampling (rock chip, stream sediment and soil).

Given that much of this work was undertaken several years ago, and in many cases around, rather than within, EL 14/2007, there appeared to be scope for further examination and consideration of renewed exploration methods. The exploration target is precious, base metals and iron in the south-west of Tasmania in the vicinity of the Zeehan, Queenstown and Roseberry Mining Centres. The target mineralisation styles are volcanogenic base metals and epigenetic vein and replacement tin mineralisation.

## GEOLOGICAL SETTING

EL14/2007 is located in the highly mineralized Paleozoic Dundas Trough on the West Coast of Tasmania. The region is host to a number of significant Cambrian age volcanogenic base metal and gold deposits (Hellyer, Que River, and Henty (?)), porphyry associated copper-gold deposits (Mt. Lyell) and numerous epigenetic deposits associated with Devonian granite intrusions including tin, lead – silver and skarn tin/zinc deposits (Mt. Bischoff, Cleveland, Renison Bell, Razorback, and Oceana).

The oldest rocks in the region are the Meso to Neoproterozoic quartzitic rocks of the Tyennan Block which provide basement to the younger sequences in western Tasmania. In the area of interest the Tyennan Group is overlain by the quartzwacke turbidite rocks of the Oonah Formation (100-750Ma) which were deposited in an N-S trending basin which was probably the precursor to the later Dundas Trough. The upper sequence of the Oonah Formation is dominated by pelites and/or carbonates with some mafic rocks and conglomerates. This part of the sequence provides an important host to vein, skarn and replacement tin deposits at Zeehan and Mt Bischoff.

The Oonah Formation is disconformably or unconformably overlain by the Success Creek and Crimson Creek Groups of the Togari Group of Neoproterozoic to Cambrian age (750-520Ma). Within the project area these rocks tend to comprise a lower sequence of dolomitic shallow water sediments resting on basal conglomeratic sandstone followed by upper mafic rift volcanic and associated volcanoclastic sediments. The lower dolomitic sequence is an important host to the tin replacement deposits of Renison Bell.

The above sequence was subjected to a number of major deformations during the Tyennan Orogeny commencing with the south directed compression (515-510Ma) followed by E-W compression from Middle Cambrian which produced the linear narrow Dundas Trough. The Dundas trough was an important depositional site for the Mount Read Volcanics and associated sediments and their polymetallic mineralisation.

The Mount Read Volcanics (MRV) is divided into three sequences. The Central Volcanic Sequence (CVS) is comprised of marine, proximal volcanics consisting of rhyolite and dacite domes and cryptodomes, massive

pumice breccias, andesites and rare basalts. The CVS is host to most of the polymetallic volcanogenic hosted mineralisation in the Dundas Trough ie Hellyer, Que River and Rosebery. The CVS interfingers with the Western Volcano-Sedimentary Sequence to the west comprised of lithicwacke, turbidites, mudstones, siltstones, shale with subordinate intrusive rocks and lavas. The CVS inter fingers with the Eastern Quartz Phyric Sequence (EQPS) to the east, comprised of quartz phyric lavas, intrusive porphyries and volcanoclastics intruded by magnetite series granite.

The MRV on the Western side of the Dundas Trough is overlain by the Tyndall Group of quartz bearing volcanoclastic sandstone and conglomerates of mixed felsic and andesitic provenance. Some workers (Seymour et al 2007) have suggested that the Tyndall Group is a time correlate of the EQPS to the east.

In the late Cambrian – Lower Ordovician, a period of E-W compression caused basin inversion of the Dundas Trough, resulting in uplift of the Tyennan Block to the west and subsequent deposition of the Owen Group conglomerate in a half graben on the western side of the Dundas Trough. Basin inversion also caused reactivation of the major faults in the Dundas Trough.

In the Middle Devonian, Tasmania was affected by polyphase deformation, attendant folding and intrusion by major I-type granite batholiths. In the west most of the intrusions post-date the folding event and are represented by reduced, moderately to strongly fractionated I-type granite.

## LICENCE

EL14/2007, comprised 23km<sup>2</sup> of land in the land district of Montagu vicinity of Mount Dundas (5km SE of Dundas) was granted to ASF Resources Pty Ltd on 23 July 2007 for five years. In 2011, 100% of EL14/2007 was transferred to ASF Metals Pty Ltd and a joint venture was established between ASF Resources Pty. Ltd. and Heilongjiang Pty. Ltd. Extensions of term have been granted until 22 July 2014.

A partial relinquishment (**Table 2**) was lodged in July 2014 over 11.3km<sup>2</sup> of the Mt Dundas tenement (**Figure 1**)

Tenement	Partial	Grant Date
EL14/2007	11.3	23/07/2007

**Table 2:** EL14/2007 Licence Details

## LOCATION AND ACCESS

EL14/2007 is located approximately 7km east of Zeehan and access to the centre of the tenement is via gravel road from the Zeehan Highway to the mining centre of Dundas. The eastern and southwestern area of the Mount Dundas Project is heavily vegetated and access is limited (**Figure 2**).

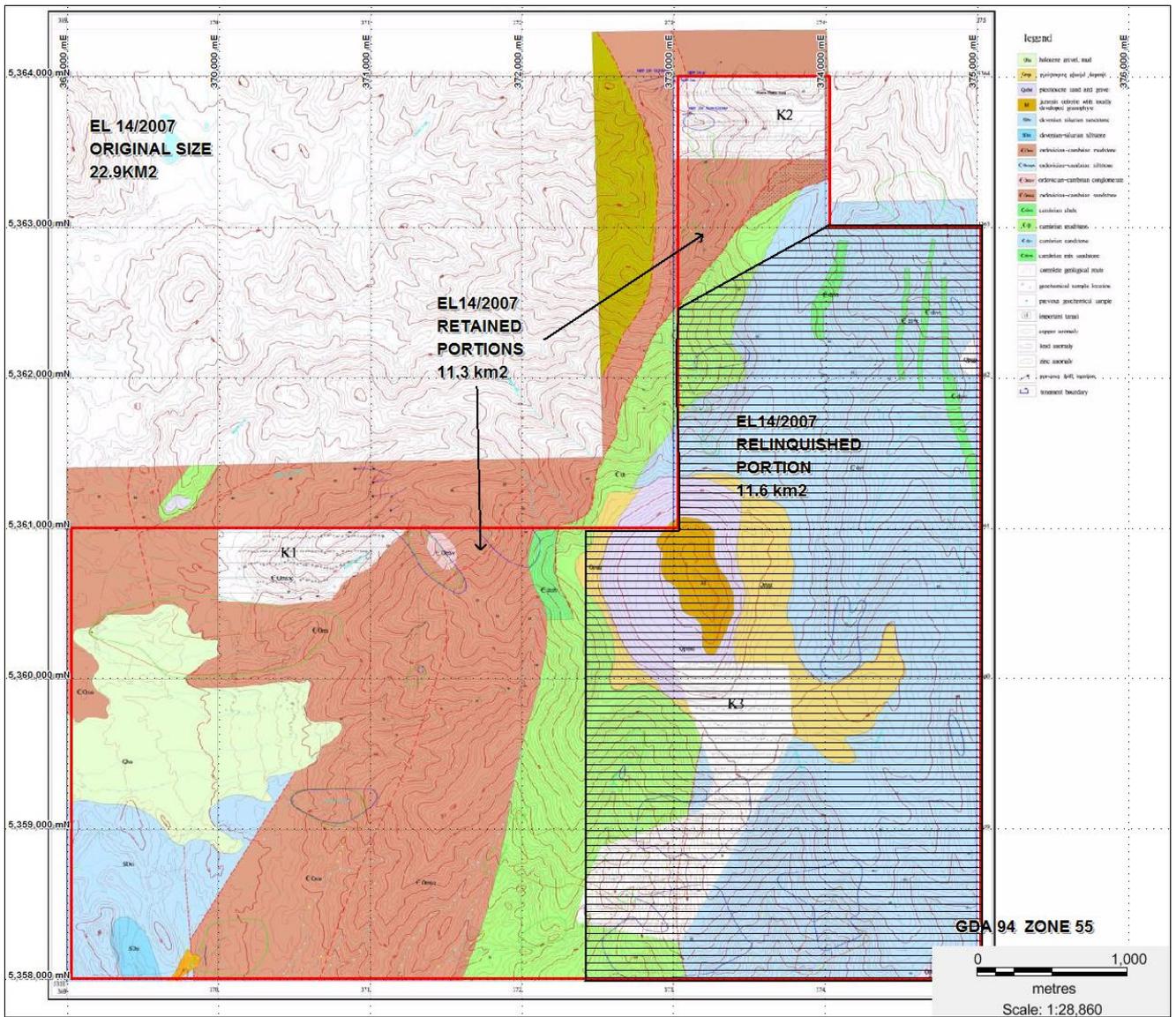


Figure 1: EL14/2007 Tenement Reduction Map and Solid Geology

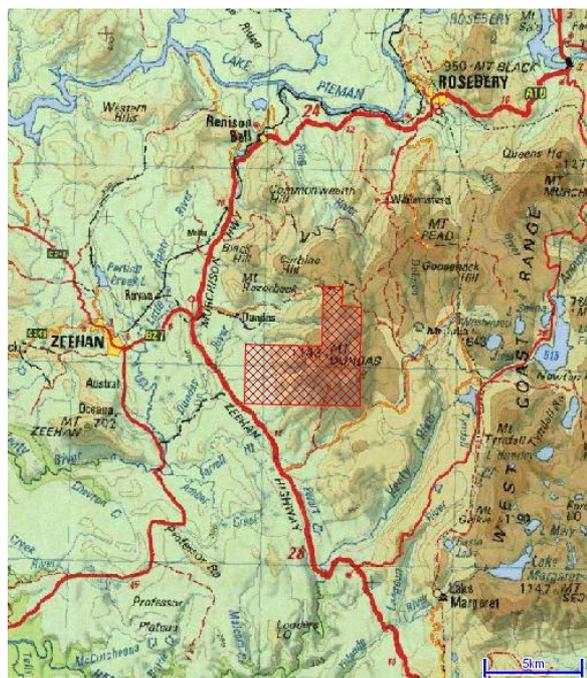


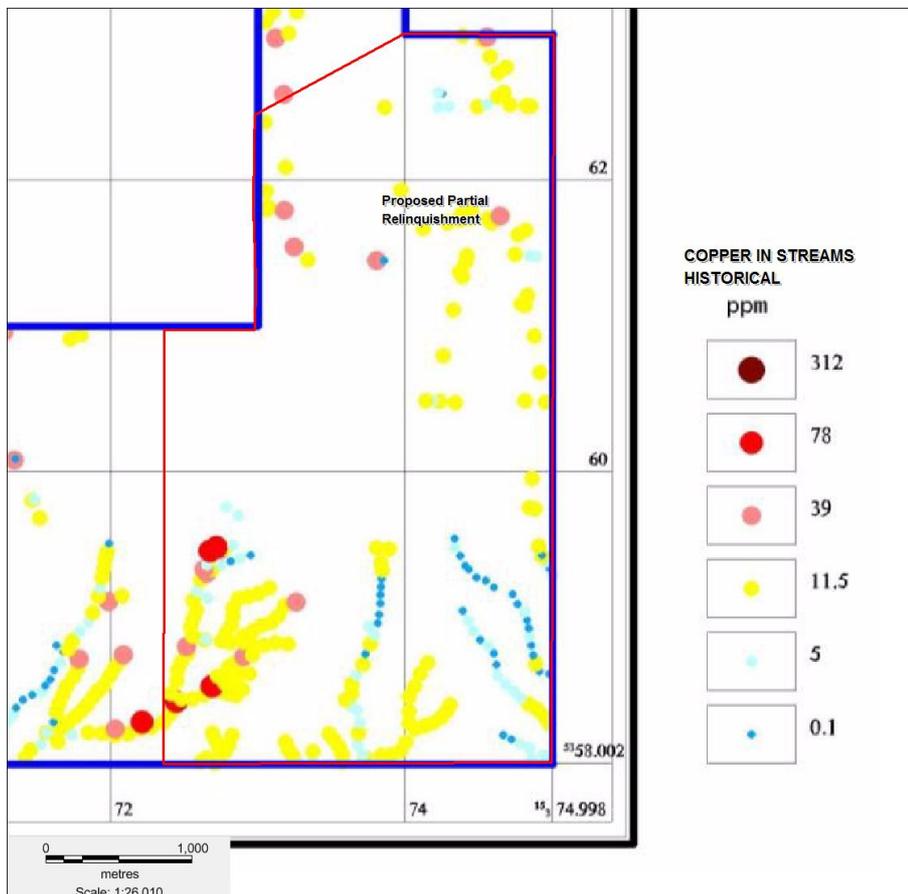
Figure 2: EL14/2007 Location Map

## Review of Previous Work

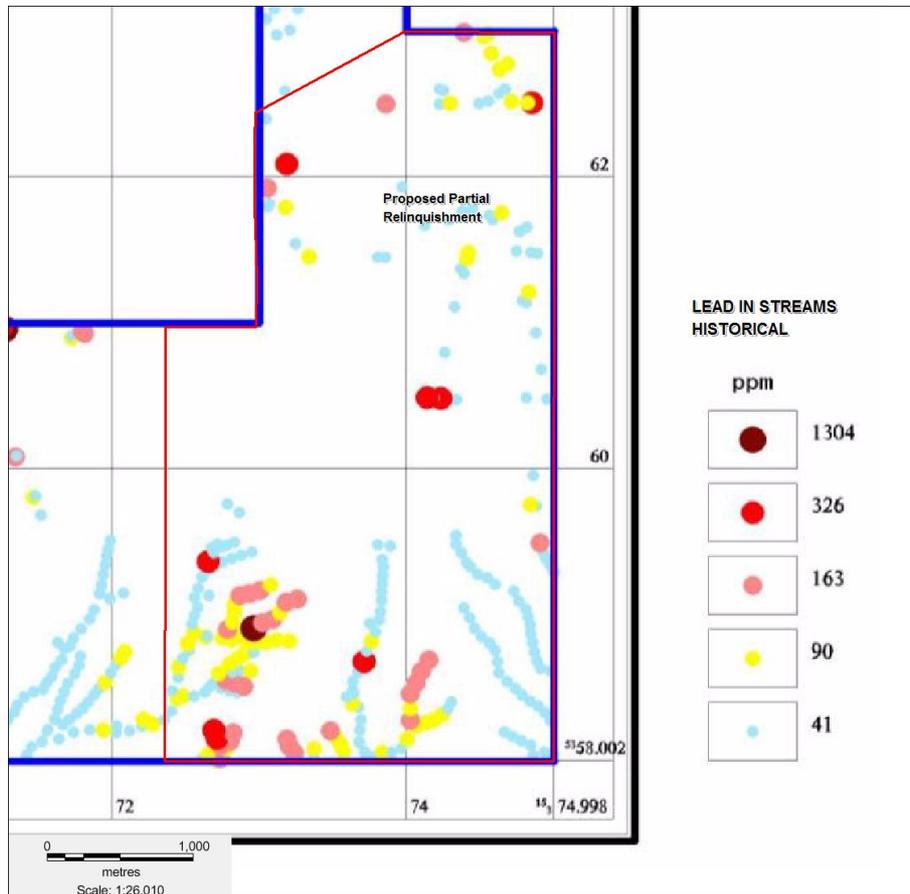
### PRIOR TO CURRENT TENEMENT

The region has been subjected to extensive exploration in the past with exploration based primarily on a volcanogenic model for base metal mineralisation in the Mt. Read Volcanics. “Modern” exploration has been undertaken from the late 1950’s to the mid to late 1990’s and included primarily stream sediment sampling within the relinquished portion of the Mt Dundas which has been compiled by Mines and Resources Tasmania within their statewide surficial geochemical data base.

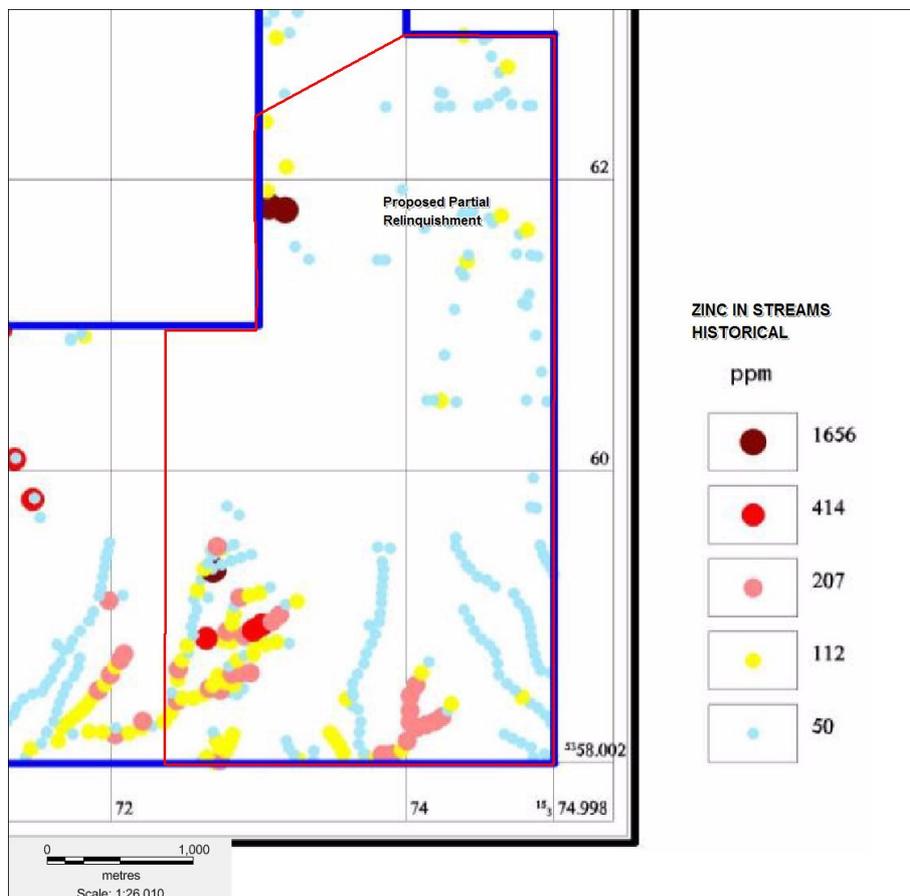
Parts of the area of EL 14/2007 have been held by at least 11 companies since 1959, generating many annual reports. The most comprehensive exploration appears to have been undertaken by RGC from 1987-1995 under EL’s 101/87 and 13/88 (Crossing, 1992). **Figures 3 to 5** show the distribution of historical stream sediment sampling with E14/2007 and the levels of Cu, Pb and Zn anomalism in ppm.



**Figure 3:** EL14/2007 Historical Cu in Streams



**Figure 4:** EL14/2007 Historical Pb in Streams



**Figure 5:** EL14/2007 Historical Zn in Streams

## DURING CURRENT TENEMENT

### 2007-2008

A full review of the geological setting and mineralisation styles within EL14/2007 was completed (Derriman & Lee, 2008).

### 2008-2010

There was no exploration in the relinquished portion during this period.

### 2010-2011

Exploration comprised a complete review of previous exploration, re-interpretation of previous geochemical surveys and drilling.

Regional and detailed geological mapping was undertaken as a basis for controlling further gridded soil geochemistry and infill stream geochemistry over previously defined anomalous catchments. Rock chip sampling was conducted over areas of interest. Interpretation of regional geophysical data, accompanied by trials of appropriate airborne geophysical survey methods to define drill targets was undertaken (Huang, et al., 2011).

### 2011-2012

Grid based soil sampling was undertaken within the K3 prospect as shown in **Figure 6** in addition to selective rock sampling across the relinquished portion of E14/2007 (**Figure 7**). The soil sampling was undertaken on a spacing of 100x20m along 17 east-west soil lines. A minimum of 500g of material was collected in the field at the base of 'B' horizon and the top of 'C' horizon. Samples were subsequently sieved to +60 - 20 mesh after drying and sent for AAS analysis for Au, Ag, Cu, Pb, Zn, Sn, As, Bi, W, Mo, Sb. A total of 50 rock samples were collected from within the relinquished portion of E14/2007, primarily within area K3 (**Figure 7**). There was no significant base metal anomalism within area K3 or associated with the rock sampling within the relinquished portion.

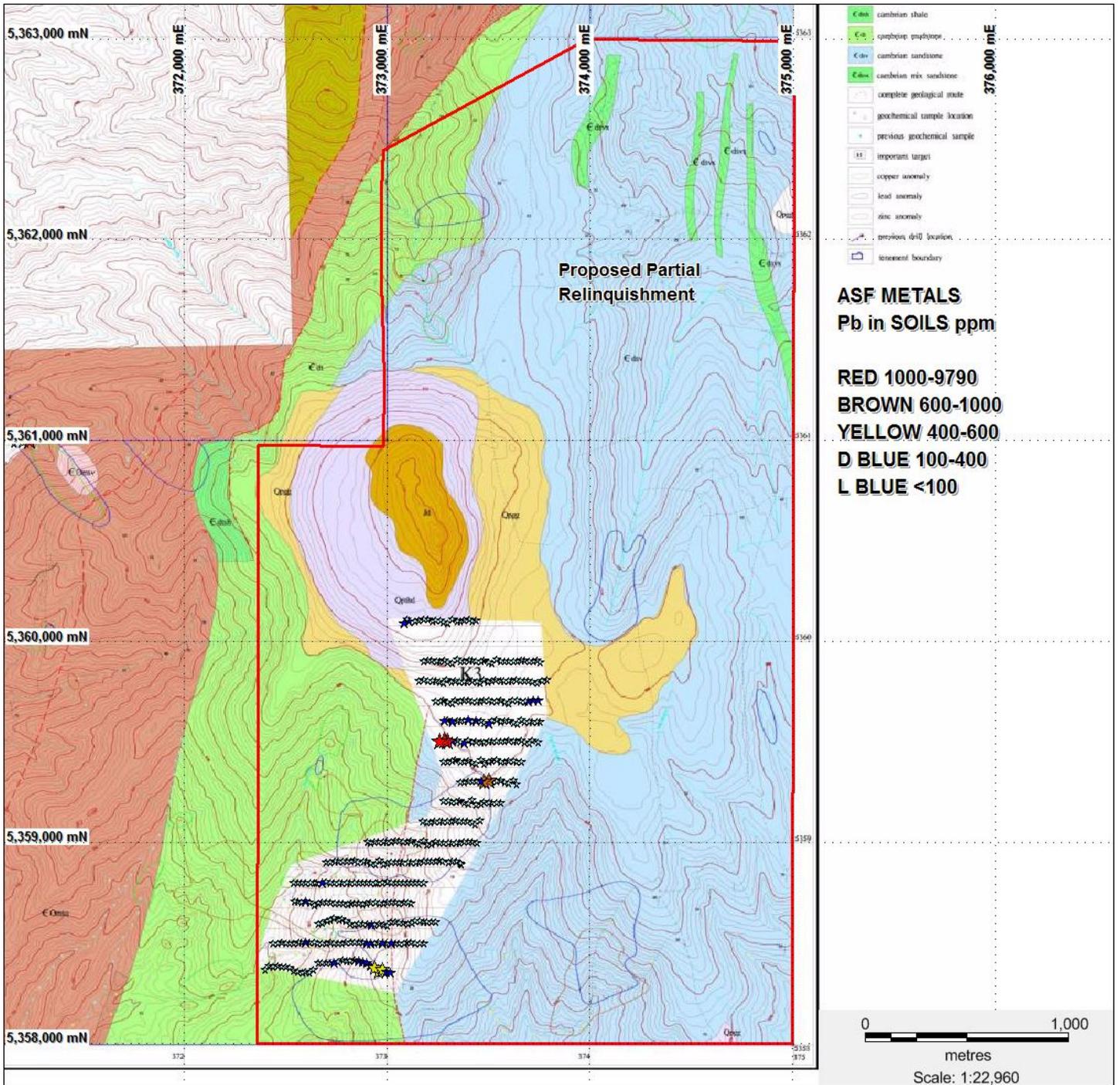


Figure 6: EL14/2007 showing the K3 soil grid with Pb geochemistry

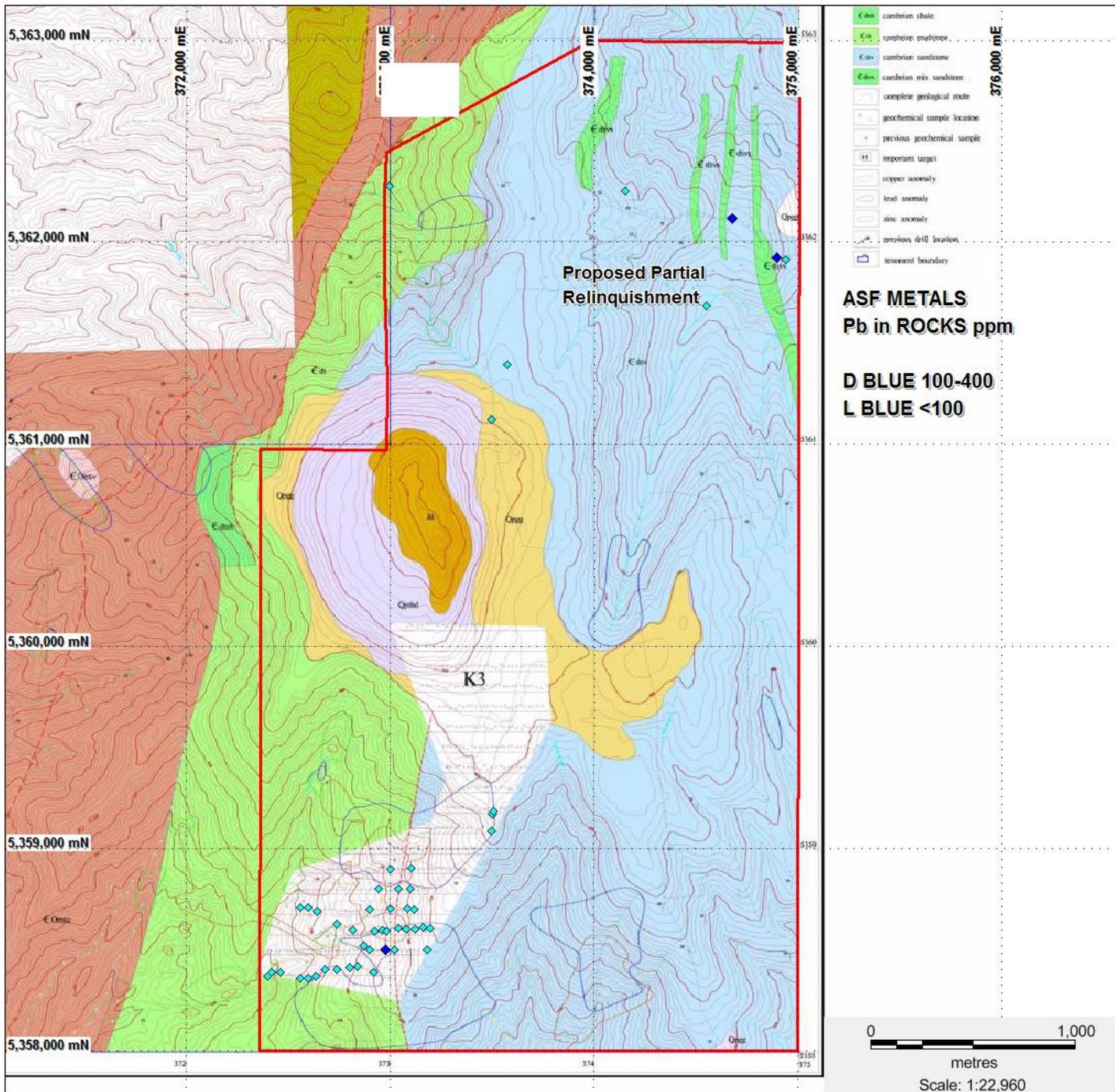


Figure 7: EL14/2007 showing the distribution of rock samples

## 2012-2014

There was no exploration work conducted in the relinquished portion during the period.

## Environment

All rehabilitation associated with area K3 and within the relinquished portion of the Mt Dundas Project has been finalised.

## Bibliography

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