

Zeb's Minerals Pty Ltd  
ABN 53 167 761 113

Annual Report  
On  
Exploration Licence 14/2015

For the period  
November 2016 – November 2017

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## **Foreword**

### **Function of this Report**

This Annual Report has been prepared as a public document for submission to Mineral Resources Tasmania (MRT). The report provides a summary of the exploration activities undertaken by Zebs Minerals Pty Ltd within Exploration Licence 14/2015 (EL 14/2015) during the reporting period November 2016 - November 2017.

### **Datum**

GDA 1994, MGA zone 55 has been used for this report unless stated otherwise.

**Distribution:** Zebs Minerals Pty Ltd x 2  
Mineral Resources Tasmania x 1

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## Executive Summary

Zebs Minerals Pty Ltd holds the licence to EL14/2015 granted in November of 2015 for a period of 5 years. The Company also holds three further contiguous Exploration Licences, EL10/2014, EL12/2015 & EL13/2015 as well as the option to purchase ML 1/1976, an existing mining lease which expires in 2019.

Contained within these leases are the Murray's Reward mine, the single largest producer of copper historically and the balance of the 35km strike length of the Balfour copper trend. This trend has been known since the early 1900's and worked as well as explored off and on by various individuals and companies over the last 100-plus years. High grade copper is known and has been mined at and near surface at numerous locations along this trend.

The Company is currently undertaking historical data research and assessing the prospectivity of the tenements with a view to identifying areas of interest warranting further concentrated exploration effort primarily for copper but also other metals and industrial minerals which can add value to the Company's holdings.

To aid in this work the company is currently considering the value of flying a VTEM survey over the strike length of the copper trend. Discussions continue to take place with various parties with respect to the logistical approach, cost and value of completing such a survey.

Data research continues on the tenement to track down any historical documentation relating to potential targets and any information assessed and requiring on ground confirmation will be undertaken in due course.

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## 1 Introduction

### 1.1 Purpose of This Document

This document fulfils the role of an Annual Technical Report on the exploration activities carried out on EL 14/2015 during the reporting period November 2016 to November 2017 as required under Section 28 of the Mineral Resources Development Act 1995.

### 1.2 Licence Location and Operations

#### 1.2.1 Mineral Exploration Area

The Exploration area consists of Four Exploration licences and One Mining lease as given in the table below and is located approximately 49km due south of the town of Smithton in North Western Tasmania.

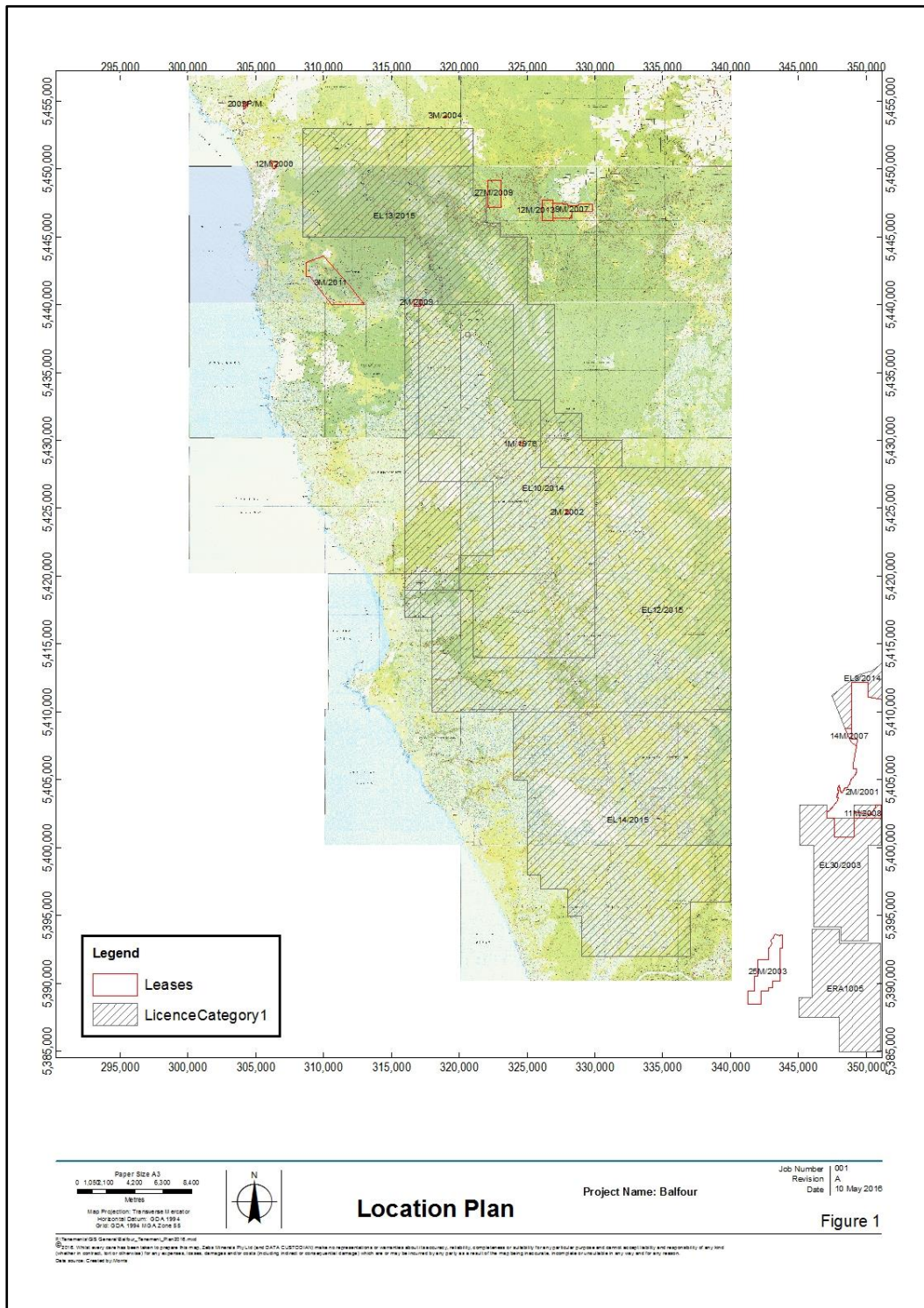
Project	Licence	Location	Area sq km	Date granted	Period remaining
Balfour	ML1/1976	Balfour	.005	01 Jan 1977	3 years
Balfour	EL10/2014	Balfour	219	01 July 2014	2 years
Balfour	EL12/2015	Balfour	247	15 Nov 2015	4 years
Balfour	EL13/2015	Balfour	248	15 Nov 2015	4 Years
Balfour	EL14/2015	Balfour	244	15 Nov 2015	4 Years

Zebs Minerals Pty Ltd acquired its original Exploration Licence, EL10/2014 in 2014. The company and its assets were purchased by the current owners in early 2015. Zebs procured the rights to the mining lease ML1/1979 and began to assess the copper potential of the area. It was determined that there was potential for discovery of multiple deposits along a significant strike length. The company recognised that the potential for further discoveries existed outside the bounds of the then current tenement package which led to the applications for three further licences to secure the entire potential strike length of the copper.

The company's purpose is to explore the tenements as a package primarily for copper but also tin and other metallic minerals as well as various industrial minerals that may exist within the extent of the licences.

1.2.2 Site Location

Access to the Project area is via the Bass Highway to Smithton from Burnie and then on the tenement via the Western Explorer Highway. Access to this tenement is difficult by comparison to the other tenements. The Western Explorer Highway runs through the northeast corner of the tenement and



near to the southeast corner. Other areas have severely limited access and require access by foot, off road vehicles or helicopter.

1.2.3 Exploration Licence Tenure

The tenement, EL 14/2015 was granted to Zebs Minerals Pty Ltd on 15 November 2015 for a period of five years and applies to all Category 1 and Category 5 minerals. The licence covers 244 square kilometres and excluded areas include:

- Any land owned or leased by the Commonwealth of Australia;
- Mining Leases;
- Retention Licences; and
- Crown reservations.

The current land tenure in and around EL 14/2015 is provided in figure 2 below.

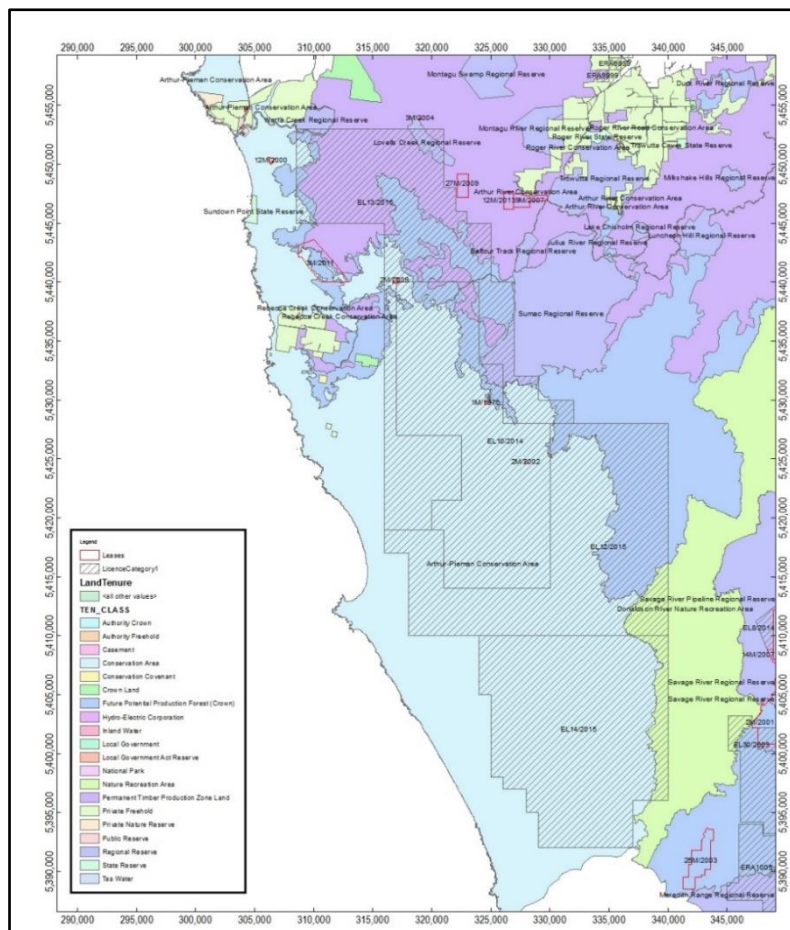


Figure 1 Location Plan of the Balfour Project Area



Figure 2 Land Tenure Plan



#### 1.2.4 Historical Setting

The first mineral discovery in the Balfour region occurred in the early 1880's with the discovery of alluvial Tin. Tin was worked on a small scale within several workings in and around the area later to be known as Specimen Hill. Alluvial tin was worked for a period of some twenty years prior to the discovery of copper in Cassiterite Creek in 1901 (Ward, 1911). Once discovery of copper was made most of future prospecting in the area for many years was centred on copper with only minimal tin prospecting and mining continuing over the period up until the 1980's.

Copper was prospected in the area extensively from 1901 to the early 1920's when the copper price dropped. Mining was carried out on a small scale with numerous mines located over a large region extending more than 30km with its approximate centre being the Murray's Reward Mine, the largest operation in the district historically.

From the late 1950's numerous companies and syndicates have prospected and explored pockets located throughout the current tenement holdings in the hope of finding similar deposits along the strike length of the trend. Some of the larger programs lead to drill testing of the suspected copper zone and though results were obtained, nothing economic has been located to date. CRA Exploration Pty Ltd were the last large exploration company to complete an exploration campaign centred in the area around the Murray's Reward Mine.

During this time the company formulated concepts for copper occurrences and proceeded to test these. Unfortunately, the decision was made by the company to move away from exploration before the ideas could be tested sufficiently with the ground being relinquished and CRA withdrawing from Tasmania.

#### 1.2.5 Geological Setting

Geologically, the area consists of thick sequences of near vertical sedimentary material of Proterozoic age with minor patches of remnant overlying Tertiary basalt and sediments. Devonian Granite intrusions occur near the coast and are inferred to underlie the sediment package to the west. The area has been subjected to numerous episodes of structural deformation over time giving place to the faults and fractures required for fluid movement. The Tin and Tungsten of the Specimen Hill area was derived from the mineralising fluids generated during the intrusion of the granites.

This same episode is suggested to be the catalyst for the remobilisation and concentration of the copper, seen at surface and mined historically, which is predominately confined to a series of cross cutting faults along the main structural trend. The structural feature which dominates the area is the northwest-southeast trending Balfour thrust fault which has a strike length of approximately 35kms.

The Balfour copper trend can be traced along this structure from the Mt Balfour copper mine in the north to the South Mine at the south of the trend at the least, with the potential to extend through to the Toner River and Interview River areas where there are known occurrences and small-scale mines.

## 2 Summary of Previous Work

### 2.1 Previous Mining and Exploration

#### 2.1.1 Copper

Copper was first discovered in the Balfour region in 1901 in Cassiterite Creek whilst exploring for alluvial tin. This discovery point and the ground around eventually became the Murray's Reward Mine. Since initial discovery copper has been explored for and mined on a small scale up to the late 1940's. This has occurred throughout the current tenement package and is evident by the numerous exploration pits and small-scale mines seen and for the most part, still locatable, some with reasonable access.

The first modern exploration specifically for copper in the area didn't occur until the late 1950's. This was, for the most part, restricted to the central portion of the trend focussed around Murray's Reward. Information regarding the efforts of specific explorers has been covered in previous annual reports and is a matter of record with Mineral Resources Tasmania and as such will not be covered here.

#### **Zebs Minerals Pty Ltd – 2014-2017**

Since acquiring the tenements Zebs has focused on data research and acquisition. The company also spent time on the ground, in an attempt to re-locate old workings and making determinations on access issues in some areas and how best to progress the project.

It was determined that reassessment of the geophysical data available would provide the most relevant information with respect to the location of any deep-seated target and GHD were contracted as consultants, to assess and report on the existing geophysical data. After the review of existing data by GHD it was determined that there was sufficient usable data available and that re-interpretation of the data and re-running of the data with current more powerful software was warranted. Zebs proceeded to have GHD undertake the re-interpretation which was completed in three stages and reported in the 2014 annual technical report for EL10/2014.

Although the bulk of this work relates to EL10/2014, the results are relevant to future exploration on the remainder of the tenement package. The majority of field work to date, by the Company, has been completed on EL10/2014.

## 3. Current Exploration, 2016 – 2017

### 3.1 Geology

Further reconnaissance work was carried out across the tenement focussing on access issues and attempting to confirm information relating to existing workings. Historical desk top research was carried out and continues. A collation of historical work, where it occurred and its relevance to the local geology and structure is still being analysed.

It is apparent that the elements which were responsible for the formation of the Murray's Reward deposit exist over an extended strike length, a portion of which is taken in by this tenement. The same

structures continue as do the rock types. It is suggested that the currently known exposures of relatively high-grade copper are sourced from a larger deeper-seated body or bodies. The potential for this source exists as insufficient work has been carried out anywhere along the strike of the known copper occurrences to prove otherwise. The question remains as to whether the source or sources are in themselves high-grade massive sulphide deposits or larger low-grade disseminated deposits. In either case there can be little doubt that the existing copper deposits are remobilised material formed along cross cutting structural pathways sourced from somewhere.

### 3.2 Geophysics

Current thinking within the company is that geophysics may be the most cost effective and quickest way to ascertain whether in fact there are more deep-seated deposits near to the known high-grade exposures and whether in fact there are more high-grade deposits yet undiscovered along the strike of the major structures.

The company has made initial contact and is considering the possibility of flying VTEM over the entirety of the strike of the structure. The purpose would be two-fold, one to help determine if there is the potential for any major deposit near to known workings and exposures and two, to potentially locate similar yet unknown deposits along the strike length.

Further discussions with consultant geophysicists will determine the viability of such a survey. If determined to be sound reasoning, then the survey would be undertaken, and the results would determine the direction of future work programs within this tenement.

## 4 Discussion

This tenement covers the continuation of the major strike of the copper field. There are known occurrences and historic mines located predominately within the eastern and south eastern section of the tenement. Access to sites varies with some easily accessed and others more difficult. The portion along strike indicated by the geological mapping and the mineral occurrences will be included in the VTEM survey. Further on ground geological and follow up ground-based geophysics will be completed once targets have been determined based on the interpretation of the geophysics and geology.

## 5 Environment

Environmental disturbance during the term was minimal. All travel by vehicles was kept to existing tracks and roads. Any other movements were on foot. The area continues to be an active exploration area with any remedial work that may be required planned to occur once active exploration activities are completed in the area.

## 6 Recommendations

- Continue assessment of historical data and on-ground checking
- Re-assess existing geophysical data and interpretation.
- Assess value in completing an aerial VTEM survey over the entire strike length of the tenement package.

## 7 Expenditure

EL14/2015 Expenditure for the four quarters for 2016/2017 is presented below.

Table 1: Expenditure for 4 quarters

2017	Q1	\$ 2,000.00
	Q2	\$ 8,800.00
	Q3	\$ 2,300.00
	Q4	\$ 2,750.00
Total		\$ 15,850.00

## 8 References

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