



**TRIAL HARBOUR EL22/1997**  
**ANNUAL REPORT**  
**FOR THE PERIOD ENDING 29<sup>th</sup> July 2013**

**Author:** Kim Denwer

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**Submitted To:** Exploration Manager - Australia

**Copies To:** Mineral Resources Tasmania, Hobart  
MMG – Melbourne Group office

**Submitted By:** Kim Denwer

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## 1. SUMMARY

Exploration Licence EL22/1997 (Figure 1) is adjacent to Avebury 3M/2003 and East Avebury 6M/2007 which contain the Avebury Nickel Sulphide deposit. MMG's administration of EL22/1997 is strategic in the assessment and development of further potential to the Avebury Mine.

EL22/1997 is considered highly prospective for similar occurrences of mineralisation as can be seen at the Avebury Mine. The Avebury Nickel Sulphide deposit is hosted in Cambrian Ultramafic Rocks which have been demonstrated to extend onto the surrounding EL's, including EL22/1997. Geophysical surveys and subsequent first pass diamond drilling have confirmed the extension of the host sequence onto EL22/1997 to the north, west and southwest. Earlier drilling has focused on the Burbank prospect with later drilling completed in 2006 - 2007 aimed at testing geophysical anomalies immediately west and north of the original Avebury ML.

This tenement was granted an expenditure moratorium until the 30<sup>th</sup> June 2013 and as a result no significant work was completed on this tenement during the period. MMG will ramp up exploration during the current tenement year.

On April 4 2007 a request for amalgamation of exploration expenditure on exploration licences EL28/1988- Zeehan, EL37/2003 Fen Creek and this tenement EL22/1997 Trial Harbour was granted.

## **2. INTRODUCTION**

EL22/1997 Trial Harbour was granted to Allegiance Metals (currently a member of the Minerals and Metals Group of companies) on 29<sup>th</sup> August 1997. The EL has been held under an annually renewed Term of Extension since 2003.

EL22/1997 is a licence in two parts with just 1 km<sup>2</sup> bordering the Avebury Mining Leases to the northeast and a further 7 km<sup>2</sup> bordering MMG held EL28/1998 Zeehan in the west (Figure 2). The EL covers an area that is highly prospective for Avebury style nickel sulphide deposits and forms an important part of MMG's long term exploration program aimed at nickel resource expansion in the region. The Avebury deposit is hosted in serpentinitised dunite or strongly metasomatised, tremolite-diopside ultramafic skarn intruded into Mid Cambrian basaltic volcanoclastics, equivalent to the Crimson Creek Formation. The altered ultramafics contain a significant quantity of magnetite which is why high resolution aeromagnetics has to date been an effective geophysical exploration tool for identifying the extension of this lithology from known occurrences at the Avebury Mine.

On April 4 2007 a request for amalgamation of exploration expenditure on the near Mine Exploration was granted.

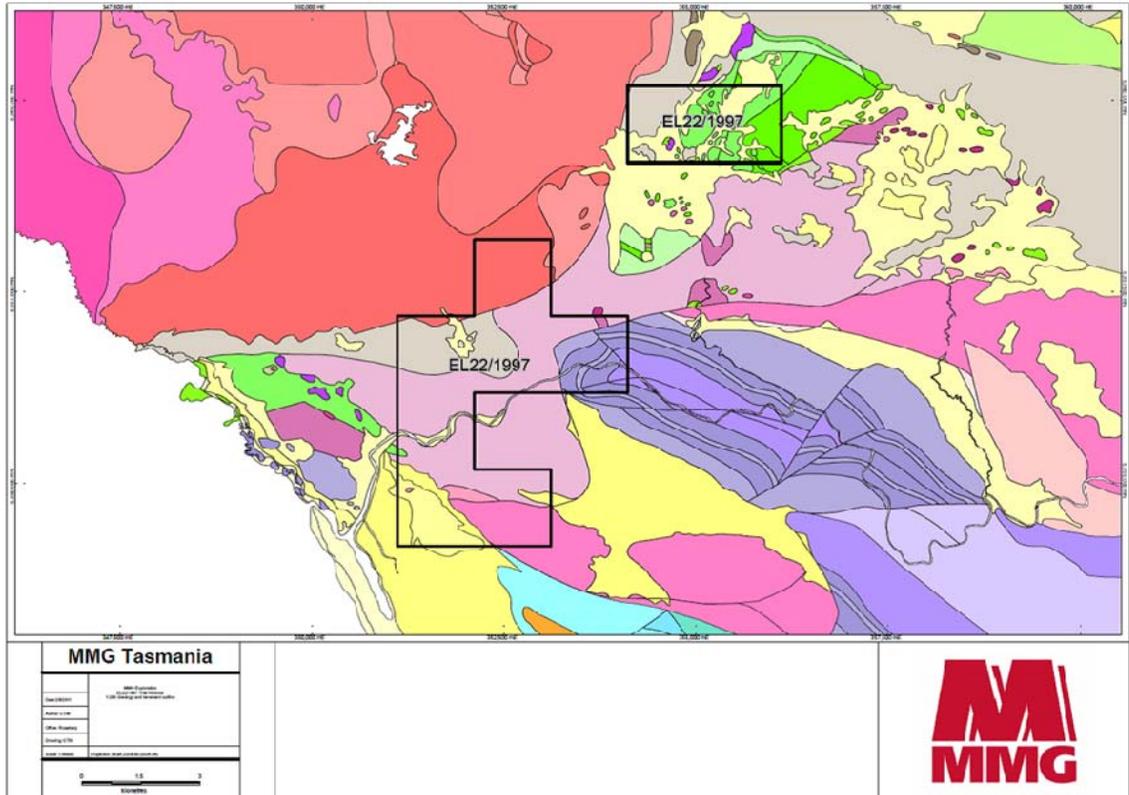
## **3. LAND TENURE**

Exploration Licence 22/1997, Trial Harbour, is coincident with the Trial Harbour Road in the north, and the Little Henty River in the central portion (Figure 1). The EL is located 4km east of the Trial Harbour village and has a holding area of 8km<sup>2</sup>. The land covered by EL22/1997 is gazetted as a State Forest Informal Reserve.

## **4. GEOLOGY**

The Avebury deposits are hosted in serpentinitised Cambrian dunite (Figure 1) or strongly metasomatised, tremolite-diopside ultramafic skarn obducted onto Mid Cambrian basaltic volcanoclastics. The ultramafic rocks demonstrably extend onto the surrounding EL's including EL22/1997. EL22/1997 is therefore considered highly prospective for Avebury style nickel sulphide mineralisation.

**Figure 1: Location map and geology:**



Variable metasomatism of the serpentinised host ultramafics, thought to have occurred during intrusion of the Heemskirk Granite, has formed two distinctly different mineral assemblages, each of which may host ore grade nickel sulphide mineralisation:

- **Essentially unmetasomatised serpentinised ultramafic:** a fine grained black rock composed predominantly of antigorite with minor disseminated chromite, magnetite and sulphides
- **Metasomatised serpentinised ultramafics:** pale grey or green, coarsely crystalline tremolite/actinolite and diopside with minor magnetite, chromite and sulphides.

Sulphide mineralisation in both serpentinised ultramafic and ultramafic skarn generally consists of pentlandite and pyrrhotite and is associated with magnetite in the form of crystalline intergrowths and veins within massive granular magnetite-chromite. Pentlandite occurs as coarse disseminations and stringer veins associated with secondary magnetite. Sulphide contents are generally low with mineralised ultramafic comprising between 0.5 to 3% sulphides although massive pentlandite does occur in some drill intersections.

Nickel sulphide mineralization is largely concentrated within the ultramafic immediately adjacent to its margins with nickel grades diminishing toward the interior of the intrusions. Some internal zones of nickel sulphide mineralisation are present.

The serpentinised ultramafics have a strong magnetic signature due to their high concentrations of magnetite, and their presence can be interpreted from magnetic images (Figure 2). The nickel sulphide mineralisation too has a strong magnetic signature due to the pentlandite-pyrrhotite-magnetite relationship. High resolution aeromagnetics is a key early exploration tool.

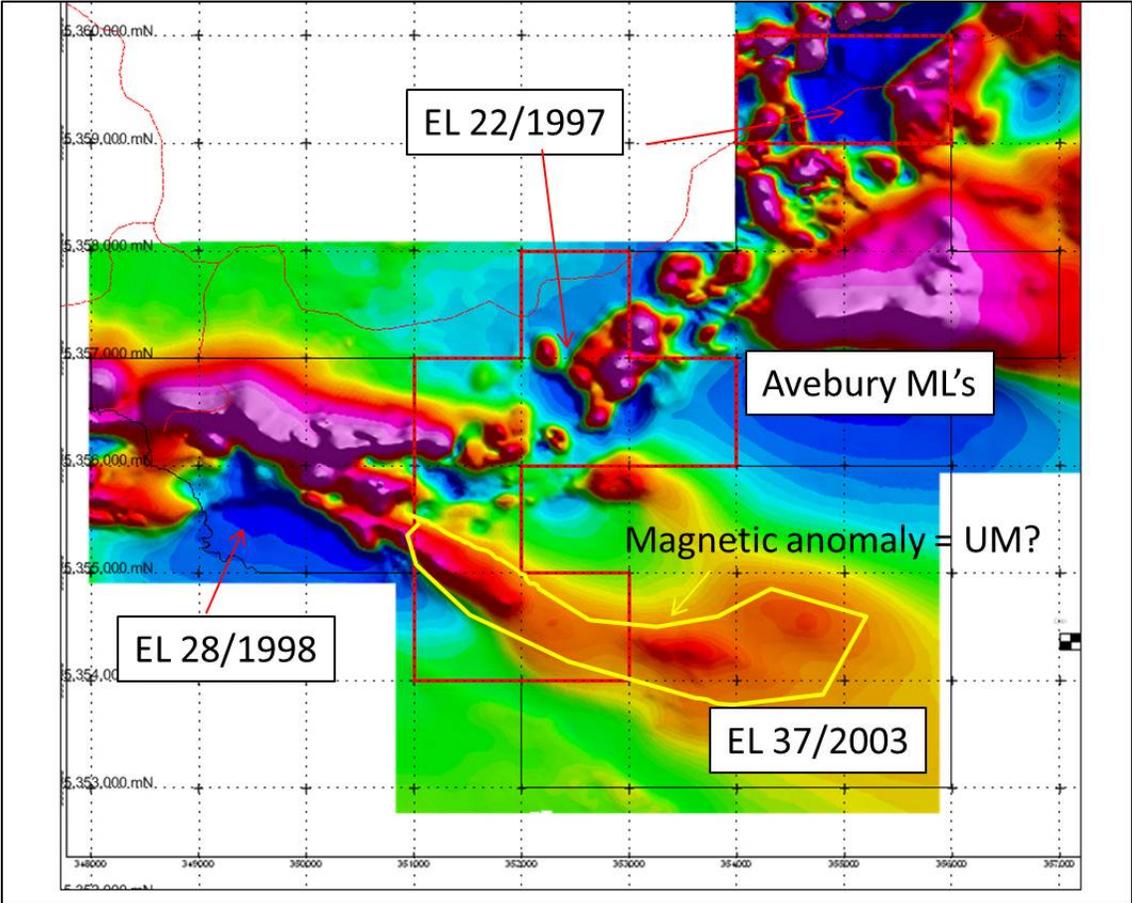


Figure 2: Aeromagnetic Image (TMI) for the Avebury tenements.

## **5. CURRENT EXPLORATION**

No exploration work was completed during the period due to the moratorium on exploration expenditure.

## **6. ENVIRONMENTAL**

There were no surface disturbance or rehabilitation activities undertaken during the reporting period.

## **7. PROPOSED EXPLORATION 2013-14**

The magnetic body that trend SE-NW from Trial Harbour through this tenement onto the Fen Creek tenement remains untested. A single helicopter supported drill hole was completed on the Fen Creek tenement but lithologies intersected failed to explain the magnetic anomaly and it was interpreted that the hole was incorrectly orientated to adequately test the anomaly.

During the current period this anomaly will be tested on either the Fen Creek or this tenement. It is also proposed to initiate research to investigate the relationship between the ultramafic hosted nickel mineralisation at Avebury with the gabbro hosted nickel at Melba Flats.

Estimated expenditure for 2013-14 is \$50,000.

## **8. CONCLUSIONS AND RECOMMENDATIONS**

No major work was completed on this tenement during the current reporting period. Exploration will be revamped during the next tenement period.

## **9. EXPENDITURE**

Direct expenditure on EL 22/1997 Trial Harbour for the year ending 31st July 2013 was \$25,752.

Approval was granted on 21<sup>st</sup> September 2012 for an exemption from the conditions releasing MMG from the expenditure requirements for a number of licences in the Avebury area, including this licence. The exemption expired on 30<sup>th</sup> June 2013.

On April 4th 2007 a request for amalgamation of exploration expenditure on the near Mine Exploration (ie EL22/1997, EL28/1988 and EL37/2003) was granted. Exploration costs for the Avebury licences for the period 1<sup>st</sup> August 2012 to present are \$61,723.

## **10. KEYWORDS**

MMG, AVEBURY, TRIAL HARBOUR, ULTRAMAFIC, CRIMSON CREEK FORMATION, LIDAR, DIGITAL ELEVATION MODEL, SERPENTINITE.