

**EL50/2007 Great Northern Creek**

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All figures are in Geodetic Datum AGD66.  
Drill collars are GDA 94.

## 1 SUMMARY

Exploration Licence 50/2008 is located immediately south of EL5M/2002 also held by OZ Minerals via its subsidiary Allegiance Metals. Both EL's are prospective for Avebury style nickel sulphide mineralisation. The Avebury Nickel Sulphide deposit is hosted in Cambrian Ultramafic Rocks which have been strongly altered by Devonian granite intrusions.

The key target horizons are two NNE trending mafic-ultramafic formations intruded at relatively shallow depths by an ENE trending ridge of Devonian granite.

In addition to the primary target of ultramafic hosted Nickel sulphide deposits, the EL's are prospective for Devonian vein style Pb-Zn-Ag mineralisation, Cu-As-WO<sub>4</sub> calcareous skarns and Sn skarns.

Allegiance Metals completed a four hole drilling program over the summer of 2008 for a total of 2328m. Three of the holes intersected altered serpentinitised ultramafics intruding what are interpreted to be Huskisson Group sediments and volcanoclastic breccias. Minor sulphide and arsenic mineralisation was intersected the drill holes. Although of a low tenor, their presence suggests the area is prospective for Avebury style mineralisation.

Due to corporate restructuring a full interpretation of the results has not yet been completed. A work program will be submitted when personnel have been assigned to the project.

## 2 INTRODUCTION

EL50/2007 Great Northern Creek was granted to Allegiance Mining in 2007.

The EL is just east of the Murchison Highway, south of the Renison EL 5/2002 also held by OZ Minerals (Figure 1). Both EL's are considered by OZ Minerals to be prospective for Avebury style nickel sulphide deposits.

The EL is located in very rugged country covered largely by temperate rainforest. Several step historic exploration and forestry roads access the EL. The first four drill holes completed by Allegiance metals used pre-existing roads.

## 3 GEOLOGY

The Avebury deposits are hosted in both serpentinitised dunite and strongly metasomatised, tremolite-diopside ultramafic skarn. The ultramafic has intruded into Mid Cambrian basaltic volcanoclastic greywackes overlain by sandstone, siltstone and polymictic felsic volcanic breccias.

The ultramafic has a strong magnetic signature due to high concentrations of magnetite released during the serpentinitisation process and subsequent Fe metasomatism. High resolution aeromagnetics is a key early exploration tool.

EL 50/12007 and EL 5/2002 overly similar Cambrian volcanoclastic sediments hosting two belts of Cambrian mafic-ultramafic rocks (Figure 2 and 3). The Cambrian sequence is intruded at depth by a late Devonian Granite which forms an ENE trending ridge connecting the Granite Tor and Pine Hill Granite outcrops. The granite intrusion has extensively altered and metasomatised both the Cambrian volcanoclastics and ultramafic intrusions.

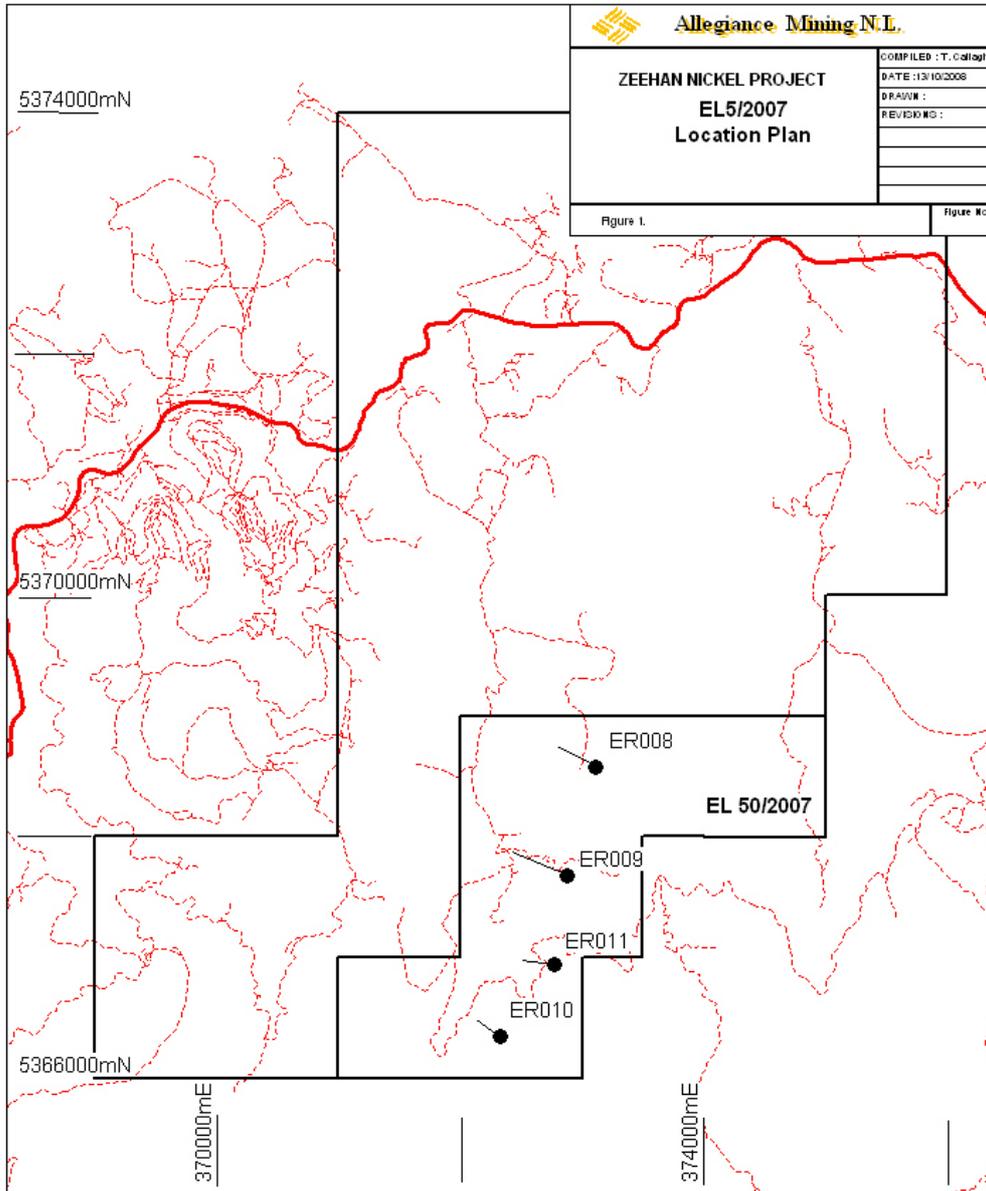
The ultramafic rocks are strongly serpentinitised and locally metasomatised to a diopside-tremolite assemblage. The associated gabbros are frequently extensively talc-carbonate altered. Calcareous sediments are extensively diopside altered with garnet rich skarns.

A variety of mineralisation styles are interpreted as accompanying the granite metasomatic event:

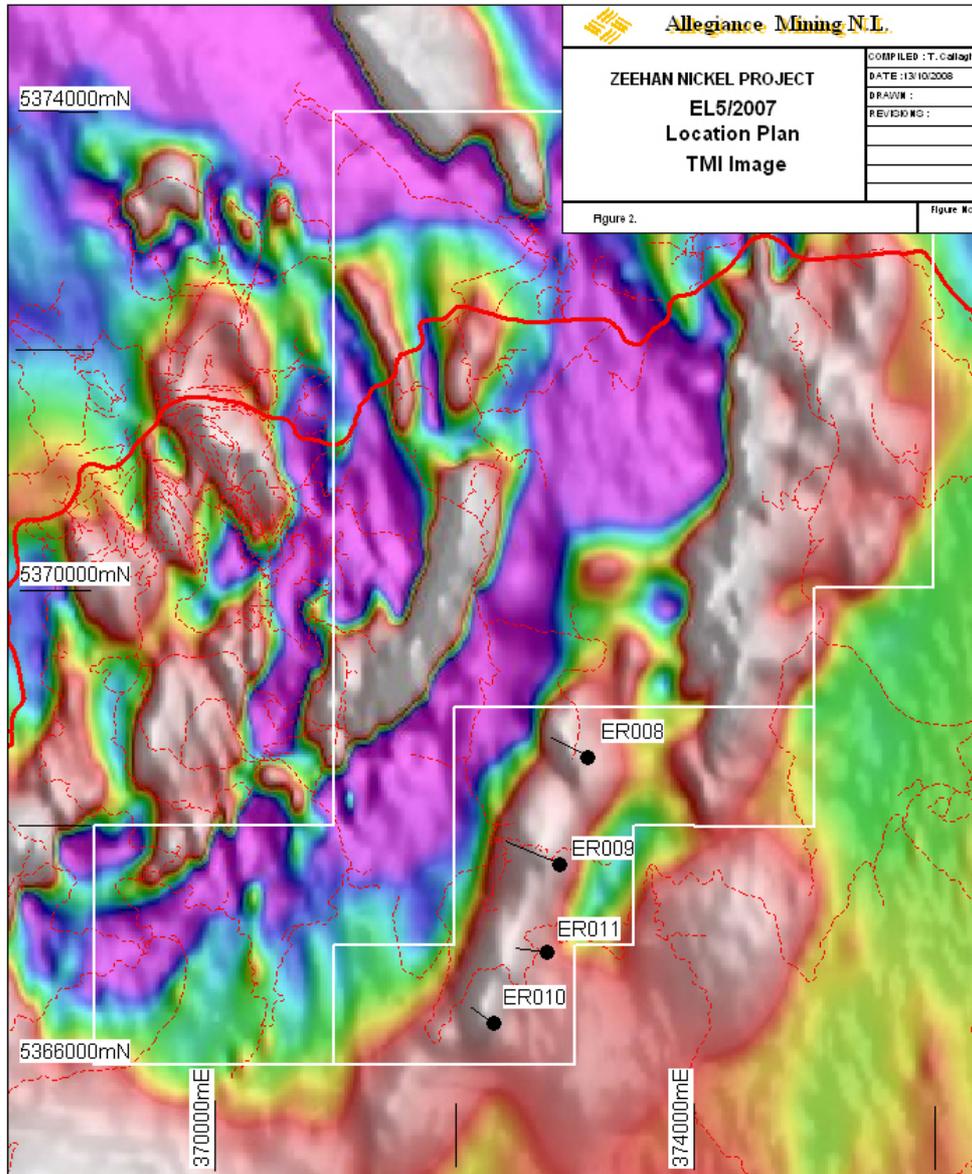
- Cu-Pb-Zn-Ag veins in altered gabbros and Cambrian sediments
- Qtz-cassiterite veins
- Large Cu-As (-WO<sub>4</sub>) skarns at Colebrook Hill

- Pervasive (sometimes massive) pyrrhotite mineralisation in altered gabbros and sediments.
- Scheelite mineralisation in skarned sediments.

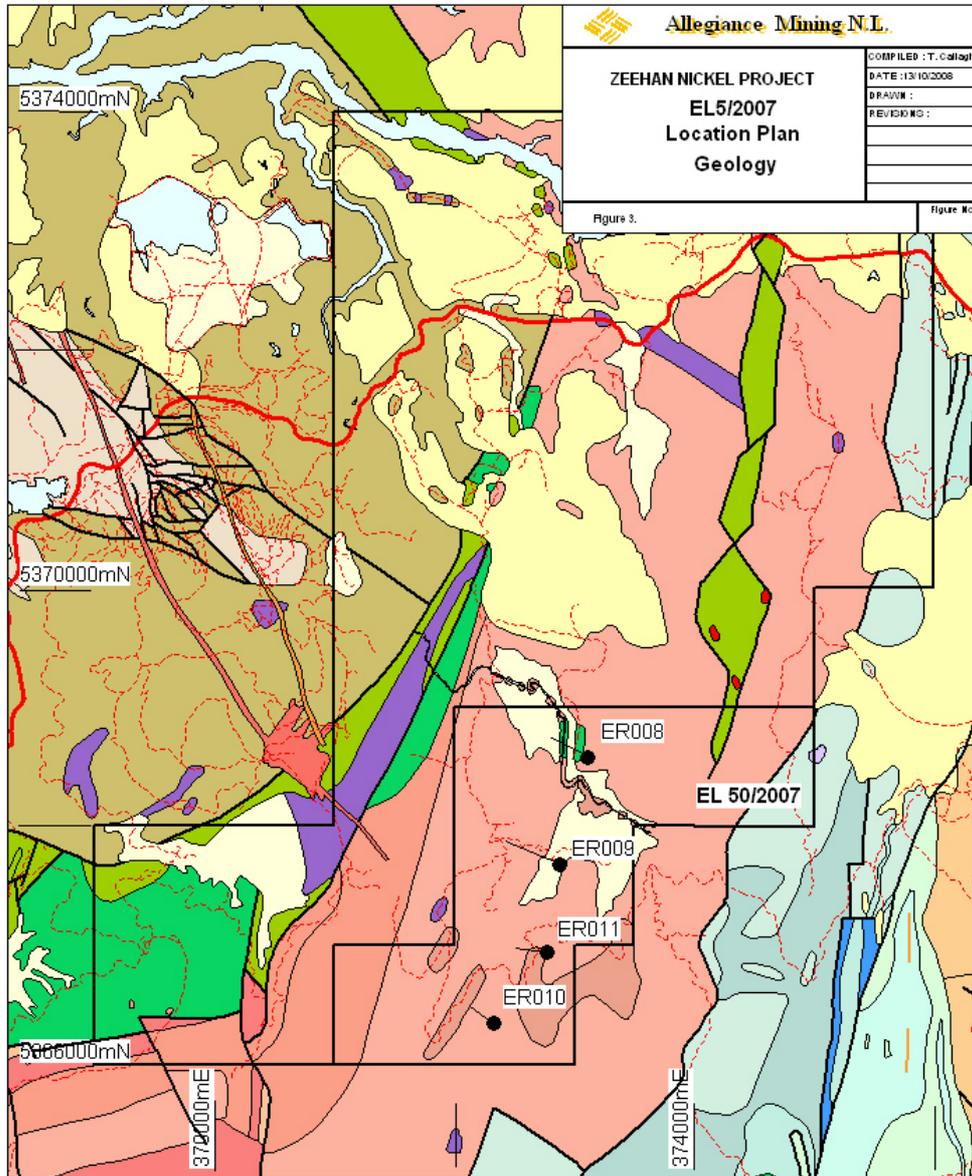
Considering the geological setting and the obvious intense metasomatic activity in the area, OZ Minerals consider the area to be highly prospective for Avebury style remobilised nickel sulphide deposits in altered ultramafics.



**Figure 1. EL50/2007 location diagram**



**Figure 2. EL5/2007 DDH Locations and Total Magnetic Intensity Image.**



**Figure3. EL50/2007 DDH locations and MRT 1:25000 Geology**

## 4 EXPLORATION COMPLETED 2007 - 2008

Work completed on EL50/2007 during the last year included:

Four diamond drill holes for 2328m were drilled on the EL during the summer of 2008 for a total expenditure of \$555,323. All holes were logged by contract geologist Nic Turner. Drill logs and assays are located in Appendix 1.

DDH ER008 intersected actinolite-chlorite-carbonate altered gabbro with two narrow intervals of quartz-axinite-calcite skarn. No significant mineralisation was intersected.

DDH ER009 intersected serpentinised ultramafic intruding what has been interpreted to be Huskisson Group (N. Turner, *pers. comm.*) sandstone, carbonaceous shale and siltstone with thin inter-beds of chert conglomerate and felsic volcanic breccia. The ultramafic contact was interpreted as being intrusive. The ultramafic was locally altered to intensely metasomatised diopside-tremolite skarn with minor sulphide mineralisation.

Minor but significant Nickel arsenides and possible nickel sulphides were present in the hole with best intercepts of:

345.7 – 349.2	3.5m @ 0.2% Ni and 0.5% S.
355.0 – 356.0	1.0m @ 0.4% Ni, 0.5%, As and 0.5% S.

The stratigraphy and structural setting has many similarities to the Avebury Mine.

DDH ER010 intersected a similar sequence to that previously described in ER009. Again minor nickel sulphides and arsenides were present, particularly towards the end of the hole.

DDH ER011 intersected a similar sequence to that previously described in ER009. No significant nickel sulphides were present. Sulphides were observed in the ultramafic but the nickel values did not increase correspondingly.

Unfortunately due to corporate acquisitions and mergers, no further work had been done on the EL. The alteration and sulphide mineralisation hosted in the ultramafic intrusions is encouraging but petrographic studies are required for confirmation of sulphide and arsenide species. A full geological interpretation is yet to be completed from the drilling program

## **5 Planned Exploration 2008-09**

Exploration of EL's 50/2007, 5/2002, 43/1992 and ML 2M/2007 will be conducted by the OZ Minerals exploration group. Detailed exploration details for the coming year will be submitted by whoever is responsible for these EL's when they have been appointed.

Suggested work includes petrographic studies, detailed mapping, compilation of historic exploration data and possibly further diamond drilling.

## **6 SCHEDULE AND BUDGET**

A work program and budget for EL 50/2007 will be submitted when personnel are assigned to the project.

**Appendix 1**  
**Drill Logs**

