



# Exploration, Mining & Resource Services

ABN 70 659 014 002

## MEMORANDUM

To: David Crook  
From: Stewart Capp  
Page: 1 of 13  
Date: 11<sup>th</sup> March 2005  
Re: Heazlewood Project – Initial Reconnaissance Field Visit.

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Ref: EM05.002

Exploration Mining and Resource Services was commissioned by Pioneer Nickel Ltd. to conduct a preliminary field visit to the Heazlewood Project (EL31/2003) in order to get a feel for access to the area and to provide background information on which to plan future field work.

### Units

All maps and plans and co-ordinates quoted are based on the Map Grid of Australia (MGA), 1994 Datum, Zone 55.

### Project Overview

EL31/2003 contains most of the Heazlewood Ultramafic complex which during the early years of this century (circa 1890 to 1910) was the world's major source of Osmiridium (an Os / Ir alloy). Osmiridium was dominantly produced from alluvial sources and minor bedrock sources over the outcropping ultramafic complex.

The area was intensely prospected during this early period and bedrock occurrences of Ni, Cu-Au, Ag-Pb-Zn and PGE's were located. Subsequent studies suggest that these occurrences tend to be hosted in faults of Devonian age. In many cases the limited tonnage potential of this style of mineralisation is given as the major reason for companies to relinquish exploration tenure over the area.

The notoriety of the area, and it's proximity to world class tin and base metal mineralisation, has attracted significant exploration work by companies including EZ Co, CRA, Geopeko and Metals Exploration. Most recently Allegiance Mining held the area, but did not carry out any field work prior to relinquishing the portion containing the out crop of the Heazlewood Ultramafic complex, which now falls within EL31/2003.

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## Access

Vehicular access into the area is restricted to 3 main routes;

1. The Mount Cleveland Road, a well formed forestry road which leads into a series of 4wd tracks that were utilized for access to log a number of coupes between the main road and Basalt Hill.
2. A 4wd track into the Fenton's Knob area, which starts near the Heazlewood River crossing on the main road.
3. A walking track (as defined on the 1:250,000 map sheet) into the Brassey Hill area which branches off the Fenton's Knob track, which is an old 4wd track used for previous drilling access to Brassey Hill.

There is also a 4wd track marked on the topographic map which turns off the Mt Cleveland Road (5411180N, 363120E) and leads into the NE portion of the project area, terminating near Friday Creek. This track is very overgrown and covered with fallen trees, in it's current state it would be fit for walking access only. Use of the track for vehicular access would require clearing with machinery.

The most common problem with access is that of fallen trees blocking tracks. It is strongly recommended that vehicles working in the area carry a large chainsaw at all times.

Overhanging vegetation is common on all tracks, and minor body damage is to be expected in most areas. This may be an issue if hire vehicles are utilized on the project.

Beehives are located in a number of areas between the Mt Cleveland Road and Basalt Hill. In one instance vehicular access was blocked by workers unloading beehives, the attendant cloud of bees presenting a significant barrier to conversation between the parties about moving vehicles.

All major tracks are gated, probably by the Forestry Commission, however all gates were found to be either unlocked or open at the time the field visit was undertaken.

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**Plate 1:** Heazlewood River Crossing, Mt Cleveland Road (5411020N, 361840E)



**Plate 2:** Rainforest, Mt Cleveland Road (5411225N, 363240E)



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**Plate 3:** View North from Brassey Hill towards Purcell's Plain (5408760N, 359570E).



**Plate 4:** Drilling Track, Brassey Hill area (5408715N, 359700E).

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**Plate 5:** Friday Creek track (5411180N, 363120E).

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**Plate 6:** Washout on Forestry Track (5412360N, 361640E).



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**Plate 7:** 4wd track, Fenton's Knob Area (5411040N, 357960E).



**Plate 8:** General View of Fenton's Area, Fenton's Knob to left of vehicle.



**Plate 9:** View to west from Mt Cleveland, over Burgess Hill.

### **Mineralisation**

Only two old workings were located in the course of the field visit. Workings are difficult to locate due to the dense nature of the vegetation in the area. Track cutting and vegetation clearing will be required in most areas if any significant field work is envisaged.

The Lord Brassey working is located immediately adjacent to the track. It consists of a single adit and a significant spoil dump.

The dump contains a mixture of ultramafic material, but no mineralised material was identified.

An old pit, about 2m in diameter was located near Fenton's Knob, again no obviously mineralised material was located.

Spoil from both workings was sampled.



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**Plate 10:** View West, Lord Brassy Mine, over spoil dump to Gabbro Hill



**Plate 11:** Lord Brassey Mine, Brassey Hill

### **Regolith**

Regolith along all the tracks traversed consists of in situ soils. The notable exception being the area around the crest of Brassey Hill, which consists of a mixture of thin soils and lateritic material (Plate 12).

Over the ultramafics the soils tend to consist of shallow (<60cm) chocolate brown soils sitting directly on weathered rock (Plate 13).

Soils over the Crimson Creek Formation tend to be deeper (~1m), and consist of weathered rock fragments and clays (80cm), with an upper layer of kahki soil. This material may have undergone some localised down slope movement, but appears to be largely in situ weathering (Plate 14).

Both soil types would make reasonable sample media.

Quaternary glacial sediments should also be found within EL31/2003, terrace areas such as Purcell's Plains are probably underlain by this material.



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**Plate 12:** Lateritic Material, Brassey Hill



**Plate 13:** Typical soil profile, Heazlewood Complex, Fenton's Knob.





**Plate 14:** Typical in situ soil profile, Mt Cleveland Road, Crimson Creek Formation

### Rock Chip Samples Collected.

Sample #	North	East	Description
698341	5,408,762	359,571	Lord Brassey spoil dump, Coarse pyroxenite
698342	5,408,763	359,570	Lord Brassey spoil dump, serpentinite, with slickensided faces
698343	5,408,761	359,572	Lord Brassey spoil dump, Drk grn, fine grained basaltic material
698344	5,408,706	359,706	Brassey Hill, Iron cemented breccia, surface sub-crop, Lateritic material?
698345	5,410,822	358,002	Fenton's Knob, sub-crop, choc brn, weathered UM, very low density.
698346	5,410,923	357,856	Serpentinised, slickensided UM, in old pit near Fenton's
698347	5,411,036	357,965	Ferruginous, weathered material, possible Laterite, Fenton's.



