

ZEEHANZINC

ACN 089 093 943

POTENTIAL NICKEL DEPOSITS OF TASMANIA

A preliminary study of known deposits and potential nickel host rocks
of the Zeehan Zinc area



Zeehan Zinc Nickel Project, Western Tasmania

Executive Summary

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Executive Summary

Zeehan Zinc Pty Ltd is private company about to list on the AIM market in London. The Company is focussed on base metal mining in and around the Zeehan area of West Tasmania. It currently has 6.9Mt of base metal resources compounded from several smaller resources in the district. The Company currently has plans to begin mining some of these resources in the immediate future whilst continuing its exploration programme.

In the Zeehan area, Zeehan Zinc has three Exploration Licences (for 93km²), four Mining Leases (for 247ha) and three Mine Lease applications pending (for 195ha). All licences are in good standing with regards to expenditure commitments.

A recently identified nickel province, the West Tasmania Nickel Province, occurs as a narrow belt of rocks striking for 60km. The belt begins on the West Coast of Tasmania at Trial Harbour and ends at Luina near Waratah. Within this belt are the old nickel mines at Melba Flats and the Avebury Nickel deposit.

The Melba Flats mines are small, high grade pods of pentlandite and pyrrhotite mineralisation hosted by a series of Cambrian gabbroic dykes. The Avebury deposit is a nickel skarn with disseminated pentlandite mineralisation hosted within extensively altered Cambrian ultramafics in proximity to the Devonian-aged Heemskirk Granite.

The exploration potential for nickel on the Zeehan Zinc licences is good. There are Substantial amounts of known ultramafics with similar alteration to Avebury that have not been analysed for nickel. These ultramafics occur within the same magnetic anomaly as the Avebury deposit and in a similar spatial position to the Heemskirk Granite.

The N-S line of the Melba Flats deposits is immediately north of Zeehan Zinc's licence EL 20/2002. A potential southern extension of this line onto the Zeehan Zinc licence is suggested by the occurrence of three old workings that have recorded nickel mineralisation but remain untested by drilling.

Exploration leverage for Zeehan Zinc comprises held tenement in prospective areas, ongoing operations in the area and an experienced technical team with first hand knowledge of the Avebury and Melba Flats nickel deposits.

Zeehan Zinc's exploration philosophy will be to compile all data including geophysical reprocessing for technical assessment and target ranking. This target generation work will be promptly followed by ground and/or airborne geophysical and geochemical surveys. The aim will be to delineate targets for drill testing as soon as possible in order to identify potential economic grade nickel intercepts.

Zeehan Zinc Nickel Project, Western Tasmania

1. Introduction

The purpose of this Information Memorandum is to provide a measure of the prospectivity for nickel associated with the Zeehan Zinc exploration licences in Western Tasmania (figure 1). Zeehan Zinc Ltd (“ZZ”) is a Tasmania based minerals exploration and mining company which has two subsidiaries: ZZ Exploration Pty Ltd (“ZZE”) and Oceania Tasmania Pty Ltd (“OT”).

Two significant nickel mineral districts have been identified around the township of Zeehan in Western Tasmania. The first one is the Avebury Nickel Province related to the newly discovered Avebury Nickel Deposit whilst the second one accounts for the accumulation of old nickel mines at Melba Flats (at the end of the Emu Bay Railway Line in figure 1). These two areas occur about 15km apart and ZZ has substantial tenement holdings between the two areas, encompassing parts of the geological trends associated with each nickel district.

The ZZ tenement area is considered highly prospective for commercial nickel deposits given that it contains significant elements of the Avebury and Melba Flats target models.

The West Coast of Tasmania is one of the worlds major mining districts with world class mines. As a result it has good infrastructure for mining operations.

Figure 1 Location Map for West Tasmania



2. The West Tasmania Nickel Province

This is a newly identified province that has resulted from an appreciation of the local and regional geology, the Mineral Resources Tasmania (“MRT”) recently flown airborne geophysical data and the Avebury Nickel Skarn discovery. The province begins on the West Coast of Tasmania at Trial Harbour and progresses eastwards towards Avebury and then bends north east to reach Melba Flats. Potential continuation of the province occurs north of Melba Flats to the Meredith Granite. Ultramafic rocks of a similar suite occur north, striking north east of the Meredith Granite for some 20km. These latter two areas are held under licence by competitors.

The recent discovery of the Avebury Nickel deposit near Zeehan on the West Coast of Tasmania has yielded a new orebody type for nickel mineralisation.

2.1. Avebury

The Avebury Deposit lies within extensively altered ultramafics hosted by volcanics, volcanoclastics and sediments of the Cambrian-aged Crimson Creek Formation (see table 2 for resources). Discovery occurred in 1996 when Rio Tinto completed a soil and ground magnetic survey (as well as a helicopter-borne magnetic survey) which led to the drilling of three diamond drillholes ZA1-3. ZA1 intersected 2.4m @ 1.44%Ni in what was to become Allegiance’s North Avebury area. 800m to the east ZA2 intersected 3.85m @ 1.67% Ni at East Avebury.

Post-Cambrian deformation has produced a synformal structure striking east-west through the middle of the deposit. Minor N-S and NW-SE cross faulting has occurred offsetting the ultramafic sequence. Strong rodingite (garnet and other calcium silicates) or ‘blackwall’ alteration in the ultramafics is associated with the disseminated pentlandite $(Fe,Ni)_9S_8$ in recrystallised magnetite-bearing ultramafics. The initial prognosis for the deposit type is a nickel skarn with remobilisation of nickel from olivines within the ultramafic sequence.

The sulphide concentrations are probably replacement mineralisation related to a hydrothermal high heat flow event long after the deposition of the ultramafic intrusive hosts. The lack of ductile deformation allows for the interpretation that the ultramafic fold ‘noses’ in which the mineralization is concentrated are possibly structural traps created when faulting and offsets breached the continuity of the ultramafic sills in the sediment package. The concentration of the white mottled rodingite at the end points of the intrusive bodies combined with the presence of many high boron minerals (tourmaline, dravite, brucite, szailbelyite) suggests that there was a fairly pervasive alteration effect by the nearby Heemskirk Granite.

Several zones/deposits are recognised namely North Avebury, South Avebury, East Avebury, Viking, and Bismark

Table 1 Avebury Resources and Reserves

Mineral Resources (inclusive of Ore Reserves)			
Category	Tonnes	Grade% Ni	Contained Ni
Inferred	4,290,000	1.0	43,000 tonnes Ni
Indicated	8,00,000	1.0	83,000 tonnes Ni
Measured	520,000	1.1	6,000 tonnes Ni
Total	12,810,000	1.0	132,000 tonnes Ni
Ore Reserves			
Category	Tonnes	Grade % Ni	Contained Ni
Probable	4,200,000	1.15	48,000 tonnes Ni
Proved	200,000	1.34	3,000 tonnes Ni
Total	4,400,000	1.16	51,000 tonnes Ni

(Source : Allegiance Mining NL Annual Report 2005)

2.2. Melba Flats

The Cuni nickel deposits were originally pegged in 1893 with the first extraction of ore occurring in 1909. Intermittent production from 1909 to 1948 totalled approximately 10,000 tonnes at 6-10% nickel (Ni) and 3-5% copper (Cu) from near surface high grade oreshoots, with a depth limitation of 30m (see tables 2 and 3).

The nickel-copper sulphide deposits are associated with a series of gabbro dykes/sills that appear to have been emplaced along a major N-S fault zone within volcanoclastic sediments of either the Cambrian Dundas Group or the Rosebery Group. The sulphide bodies with pentlandite(Fe,Ni)₉S₈, niccolite(NiAs) and millerite(NiS), are small, generally <50m in strike length and down dip. Mineral continuity is observed at depth although generally of a lower grade but there may be coalescence of the lodes to produce a larger target at depth.

The nickel mineralisation generally occurs on the footwall side of the gabbroic dykes but occasionally can be encased within the dyke. There is no indication of structural concentration of the nickel mineralization by later tectonic events and the host intrusive body is not considered the intrusion-type normally associated with a classical magmatic sulphide body. There is no discrete airborne magnetic signature to the mineralisation.

Table 2 Resource figures for the Melba Flats Ni Deposits

Deposit	Tonnes Mined	Grade Ni %	Grade Cu %	Length (m)	Width (m)	Plunge	Potential tonnes/ vert metre
Genets	Not mined	?4-6	?2-3	?100	?1	?25° NE	400
N. Cuni	?2000	?10	?5	?50	?1	?	200
S. Cuni	1200	10-12	5-6	30-35	1-1.5	?	200
Vaudeau	4000	10	5	25	1-1.5	50° S	100
Nickel R	Not mined	?6-7	?3-5	?30	?2	?	240

Table 3 Best drill intercepts for recent drilling : Melba Flats Ni Deposits

Deposit	Drillhole	Width	Ni %	Cu %	Depth (m)
Genets	DD95MF01	0.7	9.3	4.5	35
Complex	DD95MF03	0.9	7.7	2.9	16
	MFP110	3.4	4.3	2.7	20
N. Cuni	DD95MF04	0.8	7.8	10.3	26
Nickel Reward	M13	3.6	7.9	5.0	14
	M15	5.1	6.9	2.3	14
	DD01MF11	3.65	4.36	2.86	85
	DD01MF13	1.4	7.26	2.1	90

Platinum group elements are recorded at Deveraux in the order of 0.1 to 0.16oz/t in association with 0.02-0.04 oz/t Au, 1-1.4 oz/t Ag, 13-18% Cu and 5-9% Ni.

3. Zeehan Zinc Tenements

Zeehan Zinc has three exploration tenements within the Zeehan District (figure 2 and table 4)

Table 4 Zeehan Zinc Tenements - Exploration Licences

Asset	Holder	Interest	Status	Tenement Renewal Date	Licence Area
EL20/2002 <i>Oceana Mariposa</i>	ZZE	100%	Exploration	31 Jan 08	71 sq.km.
EL30/2002	ZZE	100%	Exploration	31 Jan 08	8 sq.km.
EL18/2003	ZZE	100%	Exploration	10 Feb 10	14 sq.km.

It also has Mining Leases within those exploration licences (table 5).

Table 5 Zeehan Zinc Tenements - Mine Leases

123M/1947	OT	100%	Development	31 Mar 09	145 ha
43M/1985	OT	100%	Development	1 Oct 07	80 ha
19M/1995	OT	100%	Development	31 Mar 09	11 ha
9M/2002	OT	100%	Development	31 Mar 09	11 ha
2M/2005	ZZE	100%	Application		50 ha
5M/2005	ZZE	100%	Application		47 ha
4M/2006	ZZE	100%	Application		98 ha

4. Exploration Potential

The area held under licence by ZZ is considered to be very prospective for significant nickel deposits. The exploration models for Avebury and Melba Flats are considered particularly relevant.

The properties held by ZZ contain ultramafic rocks with alteration similar to the Avebury deposit, as seen in the Sylvester diamond drillcore (figure 3). Large sections of the ultramafics have not been assayed for nickel due to the drilling being prior to the Avebury discovery.

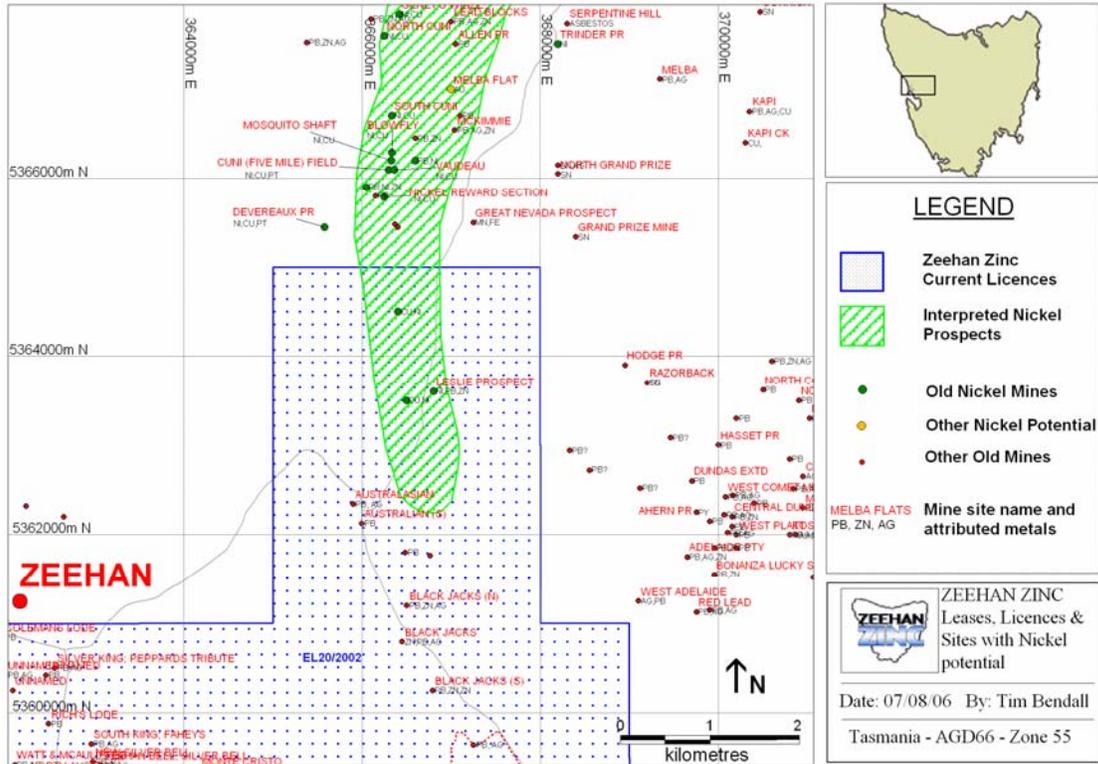
Figure 3 Ultramafics and Massive Sulphides from Drillhole SY009 at Sylvester



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The N-S striking line of the Melba Flats' mines supposedly terminates just north of ZZ's EL20/2002. However there are reported nickel occurrences along this N-S strike in the ZZ area that contain nickel mineralisation and have not been drill tested (figure 4).

Figure 4 Melba Flats



The magnetic signature associated with the ultramafics hosting the Avebury deposit appears to extend into the ZZ licences and curve round, back towards the Heemskirk Granite, near the old Tenth Legion Mines. This represents a prime target area possibly for a buried nickel deposit (figure 5).

Figure 6 demonstrates the level of detail associated with a detailed air magnetic survey completed by ZZ in 1999. The magnetic high corresponds to the locations of diamond drillholes SY005 and SY009 that have intersected ultramafics.

Figure 5 Nickel Target Map

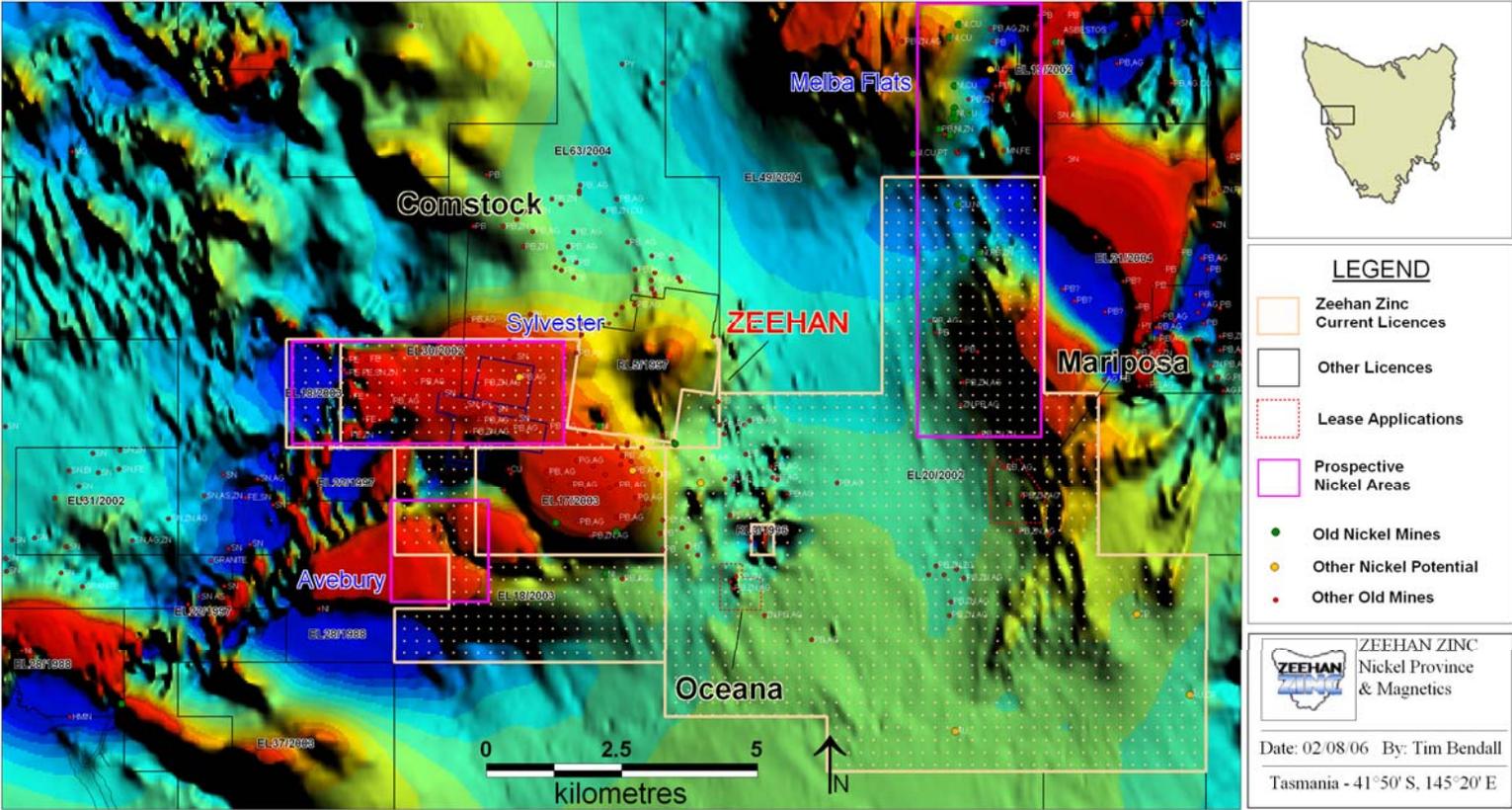
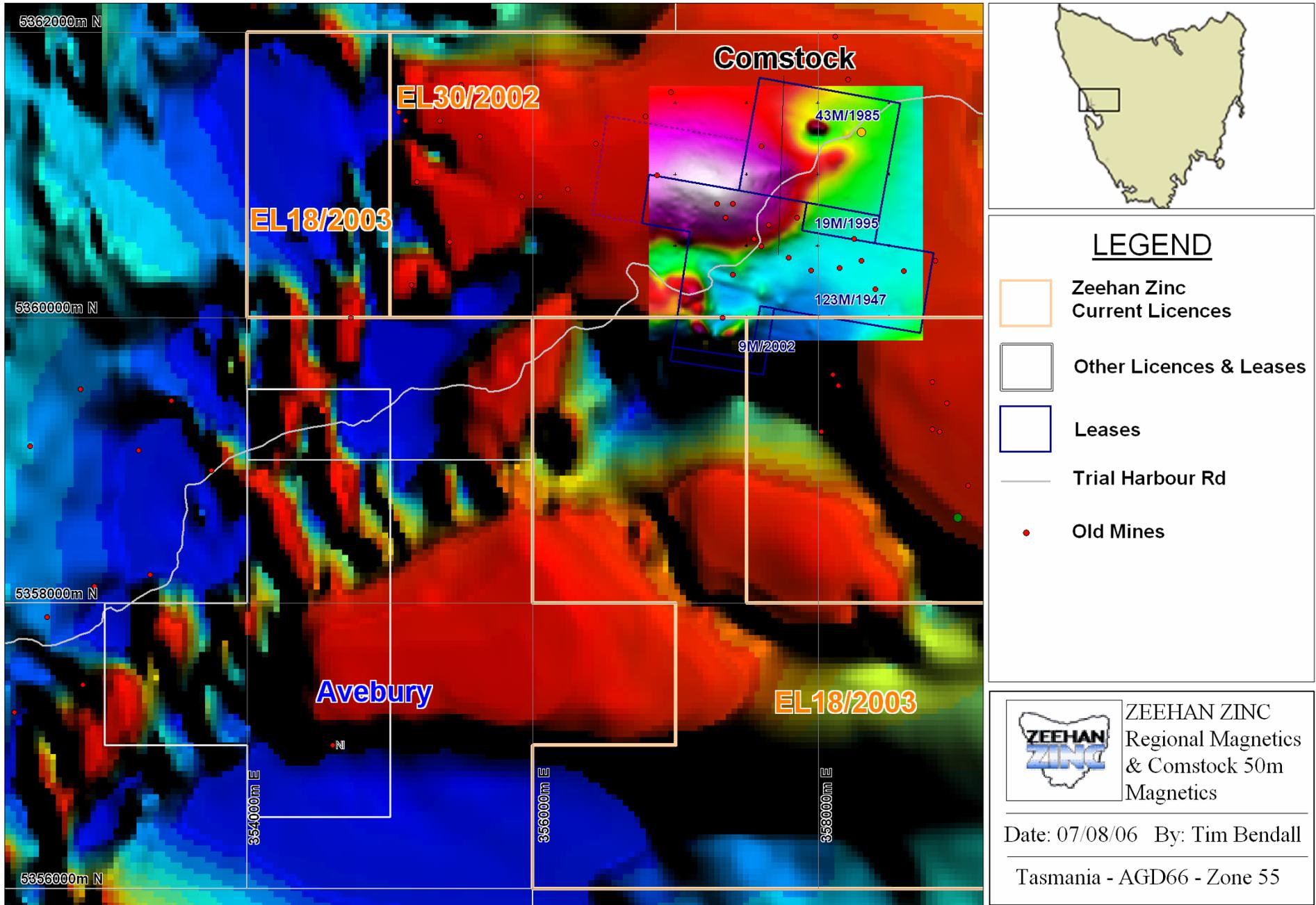


Figure 6 Regional and Comstock Airborne Magnetic Survey Results



5. Proposed Work Programme

The following work programme is proposed:

- Sample the ultramafics in the Sylvester drill core; sampling method to be either groove sampling or core filleting. Depending on results follow up diamond drilling may be required with drillhole depths likely to be up to 500m.
- Create an inventory of nickel mineral occurrences within the ZZ tenements; visit all occurrences and undertake mapping/sampling of each occurrence. Subsequent assessment may result in the completion of ground based geophysical surveys, geochemical sampling and/or diamond drilling.
- Review the Avebury-associated magnetic anomalies in the airborne data that are within the ZZ ground and identify areas for ground follow up. This follow up may involve detailed magnetic surveys, possibly EM surveys and/or diamond drilling.
- On going monitoring of the tenement situation for the Zeehan general area enabling rapid responses to any potential exploration opportunities.

Costs

Item	Rate \$A	Quantity	Cost \$A
Data Compilation			15,000
Mapping			15,000
Geochemical Sampling	15ea	3,500	50,000
Ground Magnetics	500 per line km	120 line km	80,000
Ground EM or IP	1,500 per line km	15 line km	40,000
Diamond Drilling	200/metre	4000 metres	800,000
		Total	\$1,000,000

Appendix 1

Nickel Mineral Occurrences on ZZ Exploration Licences

Rebecca Fyfe BSc

Potential Nickel prospects on Zeehan Zinc Exploration Licences

Zeehan Zinc have identified on their licences several sites that have been previously explored for nickel or indicate nickel mineralization (figure 1). These include:

1. Nickel PR, Central Balstrup, and Sylvester Mines on exploration licence 30/2002;
2. Leslie, Maxim and two unnamed old workings plus possible deposits at Farrell Rivulet Upper, Farrell Rivulet Deep Lead and Westerway Creek on 20/2002;
3. Nickel Prospect on exploration licence 18/2003.

Details of these prospects are supplied below (source MRT mirloch database):

EXPLORATION LICENCE 30/2002

Prospect J

Nickel PR

**Location: Easting 359780
Northing 5360400**

No related reports are currently available for this location. The major commodity is vein-hosted nickel in Devonian rocks.

Prospect I

Central Balstrup

**Location: Easting 361130
Northing 5360150**

Samples and outcrops in this area contain a diverse range of abundant nickel minerals with high silver and lead values.

The mineralisation is in the form of fissure veins of siderite with masses of galena (PbS). Niccolite(NiAs), ruby silver(AgSbS), and jamesonite (PbFeSbS) also occur with the galena in the siderite gangue.

In addition to the niccolite, many other nickel species have been observed in specimens collected from the Central Balstrup area. Maucherite (NiAs) occurs as irregular veinlets and occasional gersdorffite(NiAsS) and Ullminite (NiSbS) have been noted (William, Both 1962 pp.18-19, 41)

Assays of samples from the area have returned good silver and nickel values as noted in Blissett, (1962, page 182), the assays giving silver values up to 530 oz/t and nickel up to 30%.

Silberton Tilley was quoted in 1891,"the silver with the galena was up to 174 oz/t. Grades of up to 455 oz/t" were published in the same source at a later date. (Loftus Hills 1949 p14).

Prospect K

Sylvester Mine

**Location: Easting 358300
Northing 5361300**

The main commodities for this area have been listed as silver and lead. The presence of Ullminite (NiSbS) of a particularly pure composition was recorded by Williams and Both 1962 (p. 41).

EXPLORATION LICENCE 20/2002

Prospect H

Maxim Mine

**Location: Easting 361650
Northing 5359350**

Located to the south east of the central Balstrup, Maxim has been suggested as an extension of the Balstrup lode in Manganese Hill. The lode occurs as a seam of black pug with a possible value of 50% lead as galena (Blissett 1962 pp183-184), (Waller 1904 p. 96)

Prospect D

Leslie

**Location: Easting 366800
Northing 5363600**

Nickel is the major commodity listed for the Leslie Junction and at the Dundas-Cuni Mine. The primary mineral being pentlandite (FeNiS) occurring with the secondary nickel sulphide millerite (McIntosh Reid. A 1925 p13-14).

Prospect E

Farrell Rivulet Upper

**Location: Easting 370730
Northing 5355430**

Previously listed with major commodities of gold and chromium but the existence of chromium indicates associated minerals such as nickel may occur at this location.

Prospect F

Farrell Rivulet Deep Lead

**Location: Easting 366360
Northing 5354740**

Major commodity gold, however minor commodities listed such as osmium, iridium, and chromium strongly suggest nickel may occur at this location.

Prospect G

Westerway Ck

**Location: Easting 369700
Northing 5356900**

Major commodity chromium, the existence of chromium indicates associated minerals such as nickel exist at this location.

Prospect B

Unnamed

**Location: Easting 366400
Northing 5364500**

No complete reports are currently available for this location

Prospect C

Unnamed

**Location: Easting 366500
Northing 5363500**

No complete reports are currently available for this location

EXPLORATION LICENCE 18/2003

Prospect A

Nickel Prospect

**Location: Easting 359940
Northing 5357960**

The nickel occurrence is assumed to occur within a narrow dyke of pyroxenite assumed to be an off-shoot of the parent rock situated near Mount Heemskirk (Reid A.M 1922)

This area has remained relatively unexplored however the geology suggests good prospects of potential nickel mineralisation.

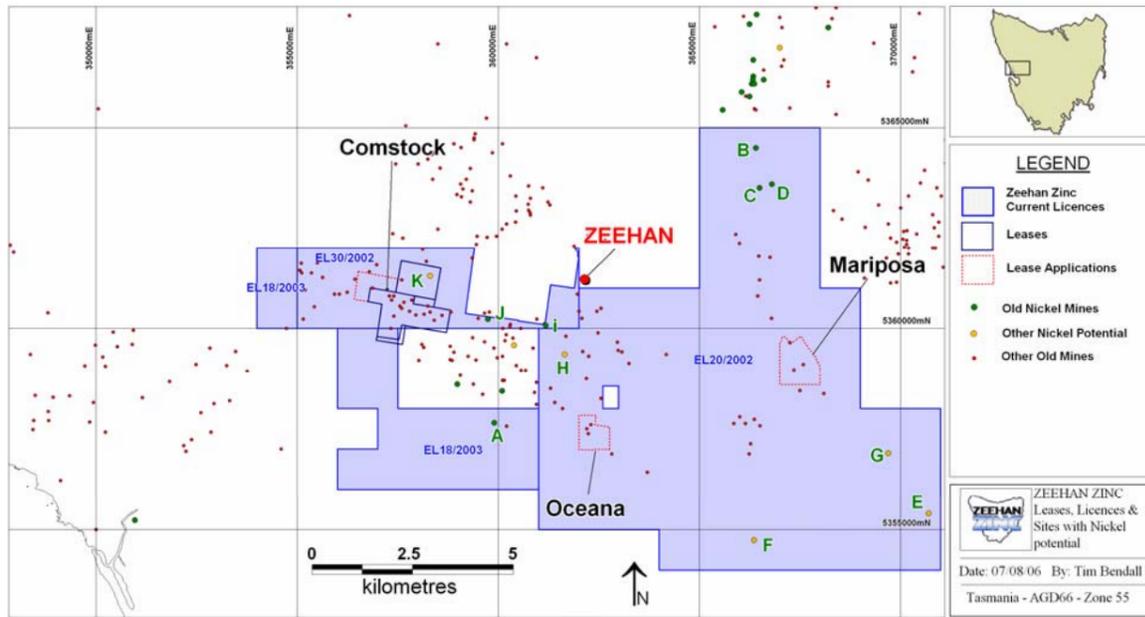


Figure 1 Nickel Occurrence Map

