



**STELLAR RESOURCES LIMITED**  
Columbus Metals Ltd

**RL 5/1997 ZEEHAN**  
**ANNUAL REPORT FOR THE PERIOD**  
**20 MAY 2015 – 19 MAY 2016**

**Compiled by: R.K. Hazeldene**

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**Department State Growth, Hobart**  
**Stellar Resources Ltd - Melbourne**

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## ABSTRACT

This Annual Report for RL 5/1997, Zeehan, covers the period from 20 May 2015 to 19 May 2016.

Retention Licence 5/1997 encompasses an area of 6 km<sup>2</sup> on the western outskirts of Zeehan Township, in NW Tasmania. It covers the historic Queen Hill, Severn and Montana deposits, which form the Heemskirk Tin Project. The deposits are located under or adjacent to Queen Hill immediately northwest of Zeehan.

Exploration from the 1960's through until the mid 1980's identified significant tin mineralisation associated with, and under, old lead/silver deposits mined in the late 1800's and early 1900's. In 1983 the resource estimate for the three deposits, based on 23,000 metres of drilling, was 3 million tonnes of ore (>0.1%Sn cut off) grading 0.7%Sn and 10.9 g/t Ag. Due to depressed tin prices and corporate matters no significant work was undertaken on the project between 1990 and 2009.

Stellar Resources Ltd, through its subsidiary Columbus Metals Ltd, purchased a 60% interest in the 'Gippsland Joint Venture' from Western Metals Ltd early in 2008, thus forming a joint venture with the other party, Gippsland Limited. In Feb 2012 Stellar purchased Gippsland Ltd.'s 40% holding for cash and shares. Stellar now has 100% ownership of the licence, with Gippsland Ltd being entitled to a royalty on tin production when the LME tin price exceeds \$25,000/tonne.

Between 2010 and 2014 Stellar Resources drilled 39 diamond drill holes (ZQ93 - ZG131) and 8 wedged daughter holes into the three principal deposits, and some peripheral prospects, which form the Heemskirk Tin Project. This work facilitated metallurgical studies, which are ongoing and the estimation of a JORC compliant resource estimate by Mining One in 2010 followed by an updated, increased estimate in 2013 by T. Callaghan.

Metallurgical studies have continued throughout the years to define the optimum procedure to treat the various ore types at the project. Over the last couple of years these studies have focussed on the Severn mineralisation.

Consultants, GR Engineering Services and Mining One, completed a Pre-Feasibility Study of the project incorporating the latest resource model and metallurgical data late in 2013. Mining consultants Polberro Consultants reviewed and updated the mining study in 2014.

Stellar was granted mining lease ML 2M/2014 over the proposed Heemskirk Tin Project tailings dam site at Mathers, east of Zeehan by the MRT in February 2015. A Notice of Intent (NOI) was also lodged with the EPA for the project and in response Stellar has been issued guidelines for a Development Plan and Environmental Management Plan (DPEMP)

During 2014 – 2015 Stellar conducted a thorough geological review of the project. The review comprised mineralogy and micro structural studies, core relogging and structural. This work was completed this year, together with an interpretation of historic seismic data. Refinement of the proposed metallurgical and mining methods this year have significantly improved project economics.

During the current reporting period metallurgical, mining and environmental studies have continued with the most recent work focussed on completing a fast start option for the the Heemskirk Tin Project which would involve drilling out the Lower Queen Hill deposit and carrying out new Queen Hill Deposit focussed mining and metallurgical investigations.

Stellar Resources exploration expenditure on RL 5/1997 during 2015/16 totalled \$374,603.

## TABLE OF CONTENTS

<b>ABSTRACT</b> .....	<b>2</b>
<b>1. INTRODUCTION</b> .....	<b>5</b>
1.1. EXPLORATION RATIONALE .....	5
1.2. GEOLOGICAL SETTING .....	5
1.2.1. Structure .....	6
1.2.2. Mineralisation .....	6
1.3. LICENCE .....	8
1.4. LAND TENURE .....	10
1.4.1. Schedule .....	10
1.4.2. Land Tenure .....	10
1.5. MINE GRID .....	11
<b>2. REVIEW OF PREVIOUS WORK</b> .....	<b>15</b>
<b>3. EXPLORATION COMPLETED DURING THE REPORTING PERIOD</b> .....	<b>18</b>
3.1. GEOLOGICAL STUDIES .....	18
3.2. GEOPHYSICAL STUDIES .....	20
3.2.1. Seismic Interpretation .....	20
3.3. METALLURGICAL TEST WORK .....	21
3.4. MINING STUDIES .....	22
3.5. PERMITTING & ENVIRONMENTAL STUDIES .....	23
3.5.1. Flora & Fauna Surveys .....	23
<b>4. DISCUSSION</b> .....	<b>28</b>
4.1. GEOLOGICAL STUDIES .....	28
4.2. PRE-FEASIBILITY OPTIMISATION STUDY .....	28
4.2.1. Capital Cost .....	28
4.2.2. Accelerated Mine Development .....	29
4.2.3. Simplified Process Flow Sheet .....	29
4.2.4. Operating Cost .....	29
4.3. PERMITTING & ENVIRONMENTAL STUDIES .....	29
<b>5. CONCLUSIONS &amp; PROPOSED WORK</b> .....	<b>30</b>
5.1. DFS DRILLING PROGRAM .....	30
5.2. FAST-START SCOPING STUDY .....	30
<b>6. ENVIRONMENT</b> .....	<b>34</b>
<b>7. EXPENDITURE</b> .....	<b>35</b>
<b>8. REFERENCES</b> .....	<b>36</b>
<i>Keywords</i> .....	38

## List of Figures

Figure 1.	RL 5/1997, Heemskirk Tin Project: Location Map .....	9
Figure 2.	RL5/1997, Heemskirk Tin Project: Land Tenure Map (LIST) .....	12
Figure 3.	RL5/1997, Heemskirk Tin Project: MRT Geology Map.....	13
Figure 4.	RL5/1997, Heemskirk Tin Project: Simplified Geology showing deposit locations .....	14
Figure 5.	RL5/1997, Heemskirk Tin Project: Geology, Structure, Deposits & Historic Drilling .....	17
Figure 6.	RL5/1997, Heemskirk Tin Project: Paragenetic Sequence, Queen Hill – Severn Mineralisation (Teale, 2015). .....	24
Figure 7.	RL5/1997, Heemskirk Tin Project: Schematic Severn Mineral Distribution Cartoon (Teale, 2015). .....	25
Figure 8.	RL5/1997, Heemskirk Tin Project: Simplified geological map showing Seismic Lines.....	26
Figure 9.	RL5/1997, Heemskirk Tin Project: Seismic interpretation along north-south section across the Heemskirk tin deposits .....	26
Figure 10.	RL5/1997, Heemskirk Tin Project: Flora & Fauna Survey / Proposed Development Area.	27
Figure 11.	RL5/1997, Heemskirk Tin Project: Potential Tasmanian Devil Den Sites Proposed Development Area.....	27
Figure 12.	RL5/1997, Heemskirk Tin Project: Plan of proposed drill holes for DFS.....	32
Figure 13.	RL5/1997, Heemskirk Tin Project: Lower Queen Hill Deposit Fast-Start Mine Plan .....	33
Figure 14.	RL5/1997, Heemskirk Tin Project: Queen Hill Deposit continuation below 950m RL .....	33

## List of Tables

Table 1.	Heemskirk Tin Project: 2013 JORC Mineral Resource Estimate .....	16
Table 2.	Heemskirk Tin Project: Mineralising events (“Phases”) – (Teale, 2015) .....	18
Table 3.	Heemskirk Tin Project: NPV optimisation.....	28
Table 4.	Heemskirk Tin Project: Capital cost reduction through optimisation .....	28
Table 5.	Heemskirk Tin Project: Unit operating cost by activity.....	29
Table 6.	Heemskirk Tin Project: Upper and Lower Queen Hill Mineral Resource.....	30

## APPENDICES

1. Zeehan Mine Grid Conversion Spreadsheet (Digital)
2. Seismic Interpretation - IAMM Consulting Report (Digital - pdf)
3. Mineralogy, Microstructures & Petrogenesis Report – Teale & Associates Report (Digital - pdf)
4. Energy Efficient Flowsheet Development for the Heemskirk Tin Project – Procemin 2015 (Digital- pdf)
5. Review of PFC Contractor Rates – Polberro Report (Digital - pdf)
6. Tasmanian Devil Potential Den site & Horned Orchid Habit Survey – Phil Milner Landscape Consultant Report (Digital - pdf)

# 1. INTRODUCTION

## 1.1. EXPLORATION RATIONALE

RL 5/1997 covers the Heemskirk Tin Project, which comprises the structurally controlled cassiterite-sulphide Queen Hill and Severn lodes and stockworks, and the Montana massive sulphide carbonate replacement (Renison style) deposit. All the known tin deposits remain open at depth, with other exploration targets remaining to be tested.

Mineralisation continues below the base of the existing drilling at all deposits. It has been demonstrated that cassiterite grain size increases with depth, as does pyrrhotite content, with both grade and metallurgical amenability expected to improve as a result.

All of the deposits are believed to be located above a deep-seated Devonian granite stock. It is likely that beneath the limit of existing drilling, which has reached 600m depth, there is a considerable amount of prospective host rocks and structures above, and/or adjacent to, the granite.

During 2010/11 work focussed on infill drilling at Queen Hill to obtain samples for metallurgical testing and exploration for near surface extensions to the known mineralisation at Queen Hill, Stormsdown and Montana. During 2011/12/13 exploration activity focused on the Severn deposit, both infill drilling and testing extensions to the known mineralisation. Other targets defined by a detailed low level magnetics survey carried out in March 2012 were also drill tested.

Studies carried out during the 2013/14 year included on-going metallurgical test work on the Queen Hill and Severn mineralisation, on-going environmental studies. GR Engineering Services and Mining One Consultants completed a prefeasibility study based on the resource revision completed in 2013 by Resource & Exploration Geology. The 2012/13 drilling program was completed in August 2013 with the drilling of 2 holes into the Montana Deposit. Drilling recommenced in March 2014 with 4 holes drilled adjacent to (ZQ127 & ZQ128), and down plunge of (ZQ129 & ZQ129W) the Queen Hill Deposit. Drill holes ZQ129 & ZQ129W extended the Queen Hill Deposit 150m down plunge. Two holes, ZG130 & ZG131, were drilled into the Golf Course Prospect during 2015.

Permitting activities are proceeding following the granting of ML 2M/2014 over the proposed tailings storage facility site at Mathers, east of Zeehan, and the submission of a Notice of Intent (NOI) to the EPA. The EPA responded with Development Proposal and Environmental Management Plan (DPEMP) Guidelines and studies recommended in the DPEMP have commenced.

Work is continuing on refining the metallurgical treatment process and mining methods for the Heemskirk Tin Project. Results of the metallurgy and mining method reviews and studies have been used to optimize the 2013 Pre-feasibility Study. Work has commenced on a scoping study for a "Fast Start Option" focused on the Lower Queen Hill deposit.

## 1.2. GEOLOGICAL SETTING

The oldest rocks at RL 5/1997 are the Montana Volcanics and the Queen Hill Quartzites, a sequence volcanics and sediments equivalent to the Neoproterozoic Oonah Formation, the oldest stratigraphy in the Zeehan area. These are predominantly quartzites with some interbedded arenaceous siltstones and shales. The upper part of the Oonah Formation is predominantly pelite and/or carbonate, including some evaporites, mafic volcanic rocks and conglomerate.

Overlying the Oonah Formation rocks is a sequence of Precambrian dolomites, carbonaceous pyritic slates and minor volcanics equivalent to the Success Creek Group. This group comprises reddish brown siltstones with intercalated limestone's and dolomite, referred to locally as the Poverty Point Beds, they correlate to that part of the Success Creek Group which hosts the Renison replacement tin deposits. The Success Creek Group rocks are overlain by the Cambrian Crimson Creek Formation, comprising basal pyroclastic volcanics overlain by a sequence of greywackes and argillites with minor tuffaceous slates and grits.

Ordovician Gordon Limestone crops out north east of Queen Hill while Siluro-Devonian Eldon Group sandstones and siltstones underlie most of the Zeehan town site. The Devonian Heemskirk Granite outcrops 7 kilometres west of Zeehan, forming Mt Agnew and Mt Heemskirk, with a ridge of granite believed to extend beneath Queen Hill at depth.

At Zeehan the Oonah Formation and the Success Creek Group both host vein and replacement tin deposits. Tin mineralisation within the dolomitic Poverty Point Beds at Montana is of cassiterite–

sulphide replacement style. Mineralisation at Severn may be similar, being due to smeared-out Poverty Point carbonates along the Severn Fault. Refer to Figure 3.

### 1.2.1. Structure

The structure of the rocks at Queen Hill is complex with intense folding and faulting at all scales. The deformation is thought to be due to the Tabberabberan Orogeny. Broadly the Zeehan tin deposits are associated with the wide hinge zone of the northwest trending Heemskirk Anticlinorium, which is thought to have been the focus of the intrusion of the Heemskirk Granite at depth in this area.

Two major Devonian deformational events are recognised in the project area. The initial  $D_1$  event is expressed as moderately doubly plunging NE-trending tight to isoclinal folds with weak fabric development. The  $D_2$  event produced upright, generally SE-plunging folds with moderate to strong fabric development. A third structural event  $D_{2L}$  is recognised and overall these events produced six sets of faults in the sequence. The southern end of a major  $D_2$  fracture zone between the  $D_2$  Zeehan Syncline and the Heemskirk Anticlinorium appears to be the locus for a late stage intrusive phase of the Heemskirk Granite. Hydrothermal fluids emanating from, or around, this intrusive have focused along faults, shears and zones of fracturing. Where fluids reached reactive stratigraphy (i.e. sulphide, carbonate or volcanoclastic horizons) cassiterite-bearing iron sulphide bodies have developed. Intersection of the more ductile S2 and S3 sets provided the best sites for mineralization, as evidenced by the Severn and Queen Hill deposits.

### 1.2.2. Mineralisation

Tin mineralisation at the Heemskirk Tin Project occurs as cassiterite and minor stannite in the three main deposits: Severn, Queen Hill and Montana, and at minor outcropping occurrences at Golf Course, Stormsdown and Poverty Point. The deposits are Renison Bell / Cleveland-type tin deposits in which granite-derived hydrothermal fluids, carrying tin, sulphur and other base metals, intruded along structural conduits and reacted with suitable lithologies, such as dolomite and carbonate rich volcanoclastic horizons, to precipitate generally sulphide-rich lodes containing cassiterite. Typical associated gangue minerals include pyrite, pyrrhotite, quartz, tourmaline, carbonates and fluorides. The granite source of the hydrothermal fluids has not been intersected in drill holes in the immediate project area, however based on geophysical evidence and the presence of rare felsic porphyry intrusives a granite stock is interpreted to lie some 900m below the present surface.

The predominance of pyrite over pyrrhotite is a significant point of difference between the Zeehan and Renison Bell deposits, however, at depth pyrrhotite becomes more abundant at Zeehan. In addition to the main high temperature tin-mineralising event, a later stage, cooler fluid event appears to have resulted in the formation of Pb-Zn-Ag sulphide lodes (Taylor's and Clarke's Lodes), which are not significantly tin-bearing. These lodes were the focus of early 20th century silver-lead mining activity.

In all the Zeehan deposits cassiterite occurs as fine grained (20 - 70 microns) disseminations in stockworks and masses of fine-grained gangue comprising siderite, chlorite, silica, pyrite and pyrrhotite. At Queen Hill there is also variable accessory stannite and base metal sulphides. Pyrite now forms about 30% of the sulphides but microscopy indicates that an original major pyrrhotite content has been replaced by pyrite and marcasite. This has resulted in only the pyrrhotitic core of the Severn deposit remaining magnetic. It has recently been discovered that a large portion of the siderite is also slightly magnetic.

The **Queen Hill Deposit** comprises a high-grade lens within a single larger lower grade envelope. These lenses are an upper lens, "the hanging wall lens"; relatively narrow (3 to 8 metres), essentially massive sulphide (pyrite dominant), replacement-type mineralisation, dipping at  $50^\circ$  to  $80^\circ$ , and "the lower lens", a wide composite zone containing narrow high-grade mineralisation. Significant tin mineralisation occurs in volcanics, clastic sediments and evaporites. The hanging wall lens is adjacent to a fault zone, which is coincident with Clarke's Ag-Pb lode. The mineralisation does not appear to be closed off at depth. The Queen Hill Deposit crops out weakly on the northwestern side of Queen Hill and is hosted by the Oonah Formation rocks.

The **Severn Deposit** occurs as several parallel, pseudoconformable lenses of bedding slip sulphide replacements and stockworks within a 130m wide drag zone in the hanging wall of the Severn Fault. The fault zone has an en-echelon shape resulting from the intersection of northwest and northeast trending fracture sets. The Poverty Point Beds appear to be displaced 500m across the Severn Fault zone by substantial strike slip movement. The resultant geometry of the tin mineralisation at Severn is tabular and is located close to, or at, the apparent angular unconformity between the Oonah beds and the Success Creek and Crimson Creek sequence. At 0.5% Sn cut-off the upper part of Severn deposit

is narrow and has a short strike length, but is high grade. Both thickness and strike length increase with depth with the deposit being open at depth.

**Montana** is a high grade, stratiform carbonate replacement tin deposit comprising cassiterite and massive sulphides hosted by the Poverty Point Bed equivalents of the Success Creek Group, the Montana Beds. Montana is narrow near surface (2.5 to 5.0 metres) and has a strike length of approximately 80m. The upper levels were accessed historically to a depth of approximately 150m. The deepest intersection, in drill hole ZM126, 400m below surface, is 0.7% Sn over a width of 8m. The deposit is open at depth.

### 1.3. LICENCE

Tenement number: RL 5/1997

Tenement name: Zeehan

Tenement location: Located over the western side, and immediately west, of Zeehan Township, with main road access from the Heemskirk Road, the Zeehan Highway and the Trial Harbour Road, which passes generally through the centre of the licence (Figure 1). Numerous town roads and tracks traverse the licence area. The licence covers an area of 6km<sup>2</sup>, which extends west from the council depot on the Zeehan Rivulet for 3.5 kilometres, past the golf course, and north for 3 kilometres from Manganese Hill to Montana Hill. The RL area is a mix of Crown Land and freehold land, including a large portion of the Zeehan Township.

The area comprises both cleared urban or farm land and regrowth forest after logging or burning. Refer to Figure 2.

Reporting period: 20 May 2015 to 19 May 2016.

Tenement holder: Columbus Metals Ltd., a wholly owned subsidiary of Stellar Resources Ltd.

# LOCATION OF LICENCE

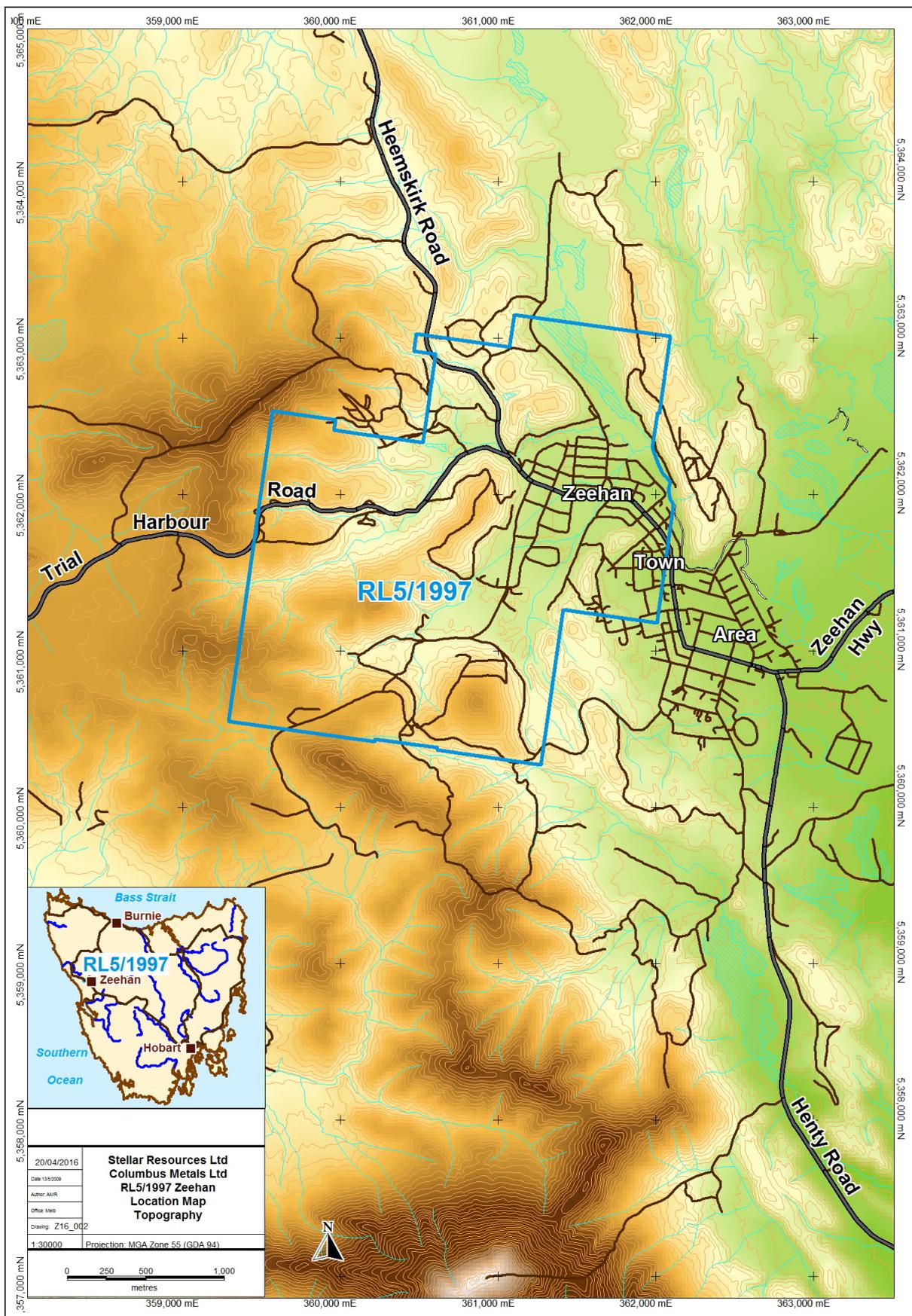


Figure 1. RL 5/1997, Heemskirk Tin Project: Location Map

## 1.4. LAND TENURE

### 1.4.1. Schedule

LAND DISTRICT OF MONTAGU  
VICINITY OF ZEEHAN  
MUNICIPALITY OF WEST COAST  
RETENTION LICENCE 9705            6 SKM

COLUMBUS METALS

Datum: AGD66, Zone 55.

Commencing at the southwest corner at grid coordinates 359,180 metres E 5,360,366 metres N, thence northerly to 359,458 metres E 5,362,347 metres N, easterly to 359,857 metres E 5,362,291 metres N, southerly to 359,848 metres E 5,362,227 metres N, again easterly to 360,412 metres E 5,362,148 metres N, again northerly to 360,491 metres E 5,362,712 metres N, westerly to 360,352 metres E 5,362,731 metres N, again northerly to 360,368 metres E 5,362,840 metres N, again easterly to 360,962 metres E 5,362,757 metres N, again northerly to 360,991 metres E 5,362,965 metres N, again easterly to 361,981 metres E 5,362,825 metres N, again southerly to 361,913 metres E 5,362,335 metres N, again westerly to 361,898 metres E 5,362,337 metres N, again southerly to the Zeehan Rivulet at approximate grid coordinates 361,866 metres E 5,362,113 metres N, thence by that Rivulet in a general southeasterly direction to approximate grid coordinates 362,000 metres E 5,361,738 metres N, again southerly to 361,894 metres E 5,360,995 metres N, again westerly to 361,300 metres E 5,361,079 metres N, again southerly to 361,160 metres E 5,360,088 metres N, again westerly to 360,502 metres E 5,360,181 metres N, again northerly to 360,504 metres E 5,360,196 metres N, again westerly to 360,108 metres E 5,360,251 metres N, again southerly to 360,106 metres E 5,360,237 metres N, thence again westerly to the point of commencement.

The area excludes 4 ha of Crown Reserves. Refer to Figure 2.

### 1.4.2. Land Tenure

The area comprises: Crown Land and Private property.

NB: This land tenure table is a guide only.

#### EXCLUSIONS:

The area covered by this licence does not include:

- (a) All forms of mineral tenements including mining leases, retention licences and exploration licences, which were applied for or in force prior to the date of application for this licence.
- (b) Land exempt from the provisions of the *Mineral Resources Development Act 1995*.
- (c) Land reserved under the *National Parks and Wildlife Act 1970* including National Parks, Historic Sites, Nature Reserves, Game Reserves and State Reserves shown on the Schedule.
- (d) Crown reservations or other land set apart or dedicated for any public purposes such as public reserves, municipal reserves or roadways unless such areas have been brought under the provisions of the *Mineral Resources Development Act 1995*.

## 1.5. MINE GRID

Both the Queen Hill and the Severn deposits strike at approximately 67° relative to GDA 1994 (and AGD 66), which results in both cross sections and longitudinal sections of the deposits displaying with distorted grid line spacing. To remedy this situation, and following normal mine practice, the Zeehan Mine Grid (ZMG), oriented parallel to the deposits, has been established to cover the project area.

The base point for ZMG is survey station SPM9721 which has the following co-ordinates:

- AGD 66: 361,587.187mE, 5,361,806.945mN RL 174.667m AHD
- GDA 1994: 361,698.759mE, 5,361,989.755mN RL 174.667m AHD
- ZMG: 61,698.759mE 3,989.752mN RL 1,174.667m ML

The ZMG is a rotated planar grid oriented at 23 degrees to GDA94. Conversion factors are:

$$X \text{ ZMG} = ((0.92050485345244 * X\_GDA) + (-0.390731128489274 * Y\_GDA)) + 1823849.603$$

$$Y \text{ ZMG} = ((0.390731128489274 * X\_GDA) + (0.92050485345244 * Y\_GDA)) - 5073074.803$$

Levels in ZMG are recorded as MSL + 1000m.

An AMG : MGA : ZMG digital conversion spreadsheet is attached in digital format as Appendix 1.

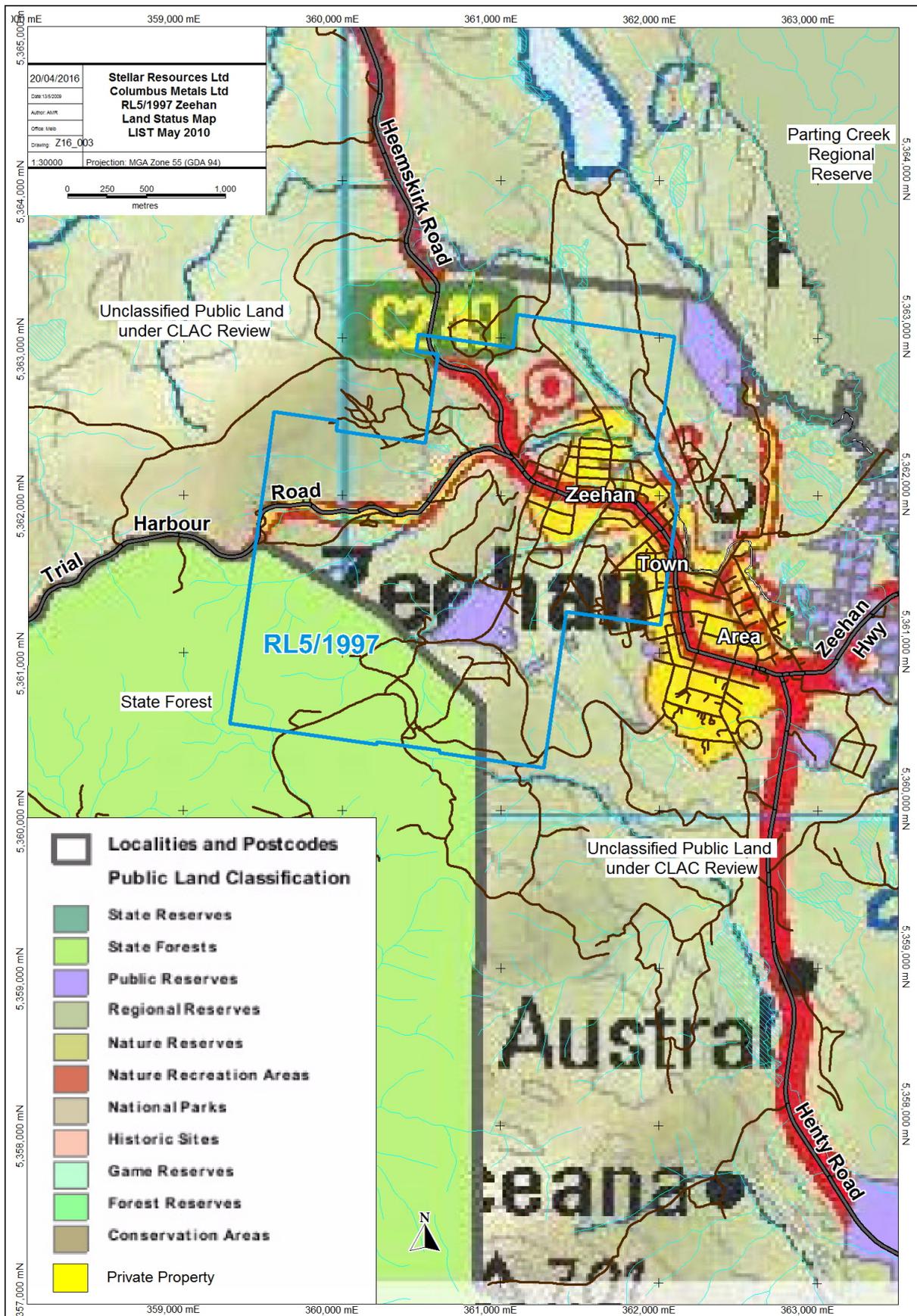


Figure 2. RL5/1997, Heemskirk Tin Project: Land Tenure Map (LIST)

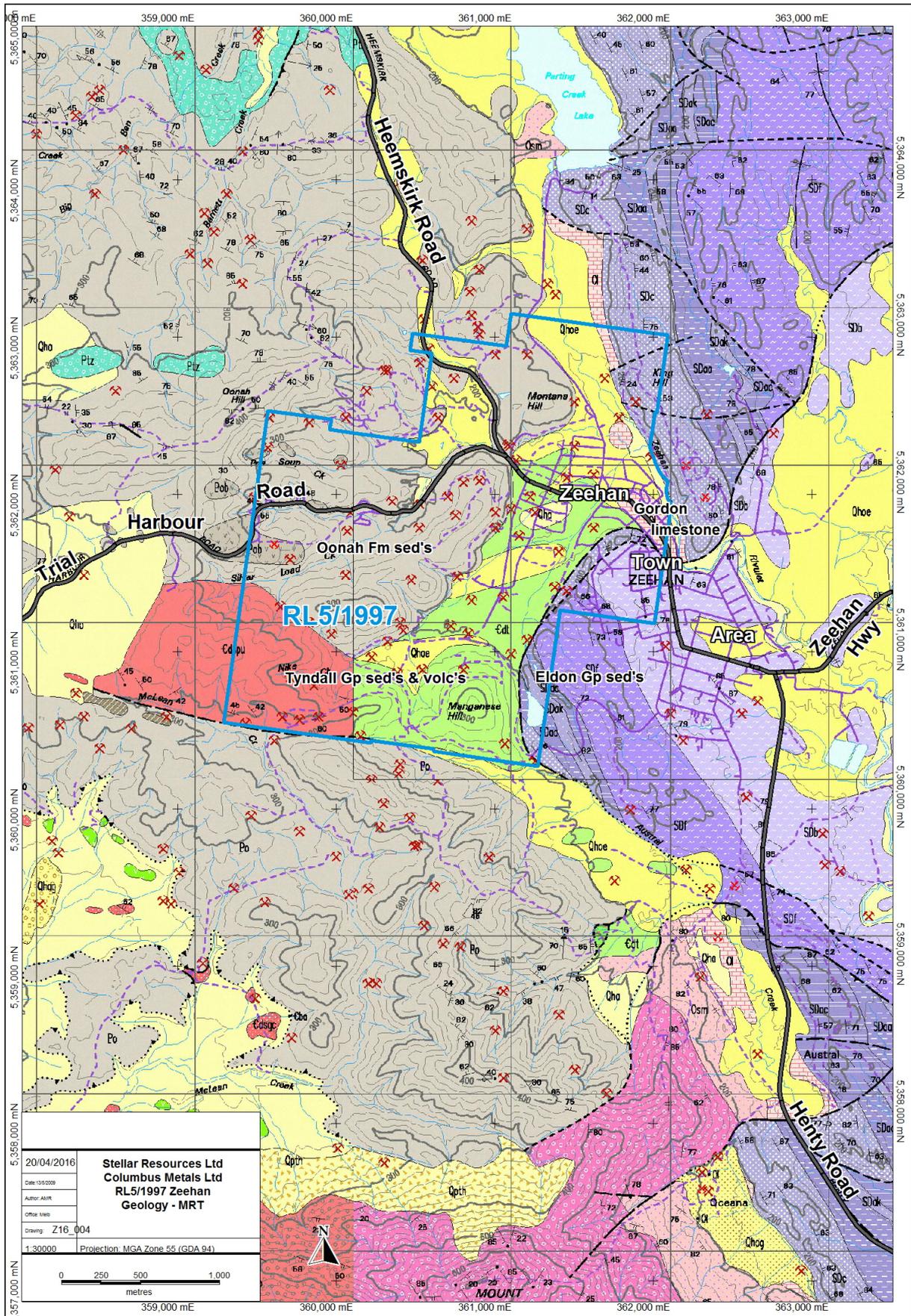


Figure 3. RL5/1997, Heemskirk Tin Project: MRT Geology Map.

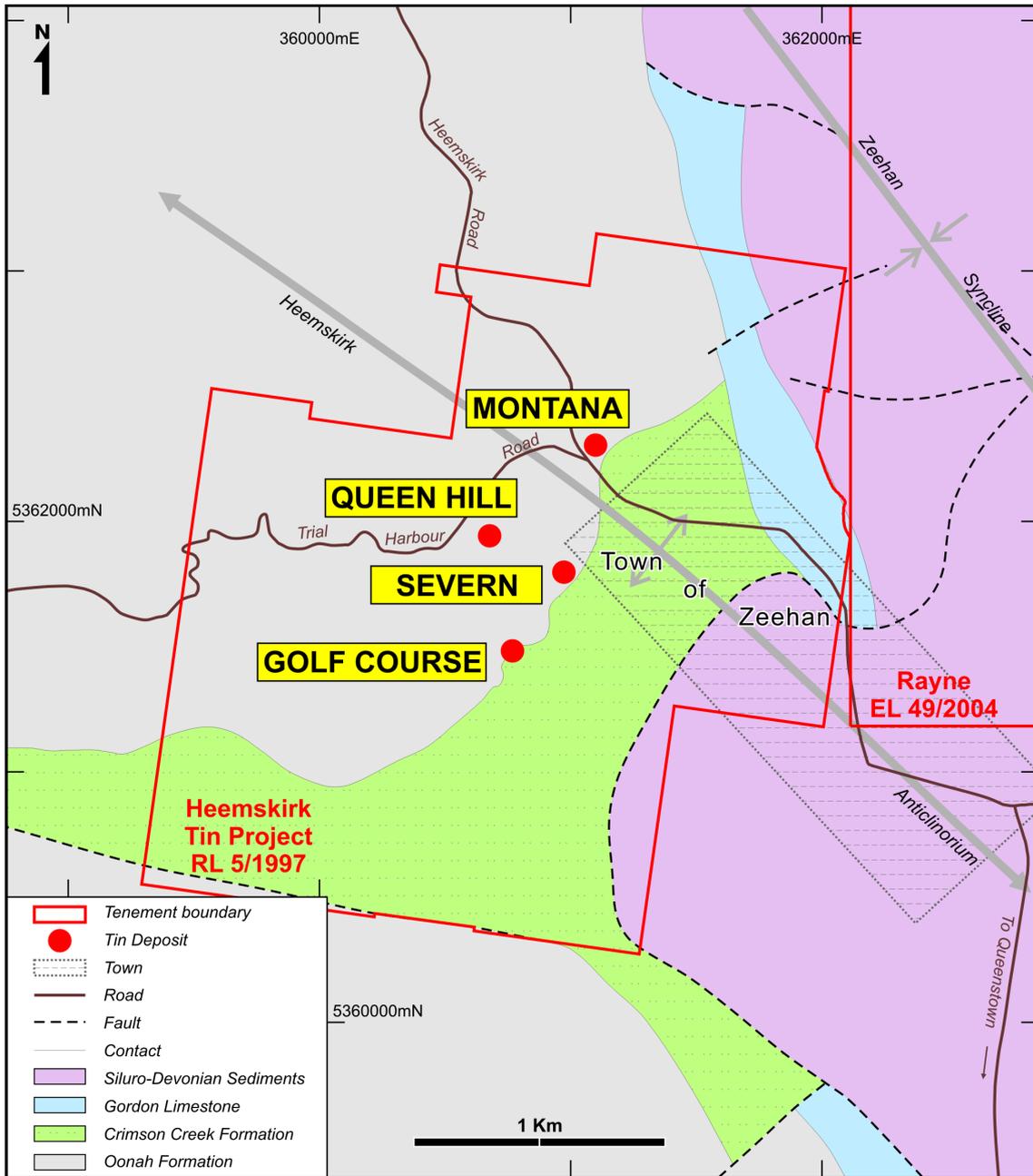


Figure 4. RL5/1997, Heemskirk Tin Project: Simplified Geology showing deposit locations

## 2. REVIEW OF PREVIOUS WORK

The majority of previous exploration work for tin at Zeehan was carried out by Aberfoyle in the 1970's and 1980's culminating in the delineation of 7.3 million tonnes of mineralisation at an average grade of 0.69% Sn and 10.9 g/t Ag. Higher-grade zones within this mineralised envelope were reported as 3.61 million tonnes @ 1.21% Sn.

This work was undertaken in a Joint Venture signed on 27 March 1972 between Cominco Exploration Pty Ltd (Aberfoyle) and Gippsland Oil and Minerals NL (Gippsland Limited). The JV saw Aberfoyle's interest confirmed at 60% with the right to 70% equity in the project by completing an acceptable feasibility study.

Queen Hill was discovered in the late 1960's, when cassiterite was recognised in massive pyrite mineralisation exposed in old silver-lead mines. The drilling of a magnetic anomaly, located some 300m eastwards from Queen Hill, led to the discovery of the larger Severn Deposit in 1976. Early exploration focussed on Queen Hill and continued sporadically throughout the late 1970's and early 1980's. Characterisation of ore from the upper Queen Hill lode showed it to comprise sulphides (mainly pyrite), carbonates, fluorite and silicates. The tin mineral was mainly cassiterite, which occurred in extremely fine particles (15 microns) disseminated throughout the ore, 60% in sulphide and the remainder in other gangue. The most promising route for beneficiation seemed to be standard mineral dressing methods to gain acceptable recoveries of the cassiterite into low grade concentrate and then upgrading this by pyro-metallurgical matte fuming. In June 1980 a bulk sample of ore from Queen Hill (2,892 tonnes) was excavated and sent to Aberfoyle's matte fuming pilot plant at the Kalgoorlie nickel smelter. Test work successfully produced a high-grade tin matte from this material. No further work was done due to the collapse in the tin price in 1985. The pilot plant and technology were subsequently sold to Mt Isa Mines Limited.

On 1 August 1981 an amalgamation of seven previous leases over the Queen Hill area was undertaken and CML 36/M/81 was granted over an area of 564ha for a period of 21 years. In 1997 this mining lease was converted into the 6km<sup>2</sup> retention licence RL 5/1997.

The exploration program at Queen Hill identified deeper mineralisation below Queen Hill and at Severn and Montana. Metallurgical characterisation test work on these deposits showed them to be more amenable to conventional mineral dressing than the Upper Queen Hill ore. Amenability was judged on cassiterite grain size, ease of liberation, and response to gravity and flotation separation. In particular, the Severn ore responded better than some of the fine-grained ores at the Renison Bell Tin Mine when subjected to similar unit processes employed in the Renison Concentrator (Severn has an average grain size of 65 microns while some of the Renison Fault ores have an average grain size of 50 microns). This offers an option to process these ores by standard mineral dressing methods and produce a saleable gravity concentrate for a recovery estimated at 71.5%.

By 1982, Aberfoyle had completed 89 diamond drill holes totalling 23,000m and a comprehensive data compilation and resource estimation was undertaken which resulted in a Pre-Feasibility Study report issued in May 1983. The report concluded that the Zeehan Tin Project had potential for profitable underground mining. The project was never taken through to a bankable feasibility study however, as work was halted in 1984 due to the imposition of export quotas on tin concentrates by the Association of Tin Producers.

Drilling ceased on the Heemskirk Tin Project in June 1982 but technical assessment by Aberfoyle geologists continued; in particular John Anderson undertook research studies towards a PhD degree. A number of new conceptual targets were generated and resulted in the completion of a series of EM geophysical surveys and two final drill holes for a total of 1,320m in 1989-90.

Aberfoyle was taken over by Western Metals Limited (Western Metals) in 1998. Over the ensuing years no work was undertaken at Zeehan. Stellar purchased Western Metals interest in the Zeehan Project in 2008.

Commencing in 2010 Stellar Resources drilled 5 shallow diamond drill holes into the Queen Hill Deposit to both obtain fresh mineralised material for metallurgical testing and to better define the upper extent and nature of the Queen Hill mineralisation. This was followed in 2011 by 3 more holes into Queen Hill, 3 holes into the Stormsdown area, 3 holes into the upper portion of the Montana Deposit and one hole and wedge below the Severn Deposit. Drilling was then suspended until Stellar acquired Gippsland Minerals 40% equity in the Heemskirk Project early in 2012.

During 2010 mining consultants, Mining One, carried out a JORC compliant resource estimation of the Project. Both historic and the 2010 drill results were reviewed and used for this estimate.

Metallurgical testwork carried out by Burnie Research Laboratory tested Queen Hill core composites. Assessments included analytical, mineralogical and flotation assessments and was based on a Renison style flowsheet. This initial metallurgical test work showed that the process required to treat upper Queen Hill mineralisation is compatible with that operating 18 kilometres away at the Renison Bell mill.

During 2012/13 Stellar drilled 17 diamond drill holes, including 3 wedged daughter holes, at Zeehan, totalling 5,730m. 10 holes (including two wedged holes) were drilled into the Severn Deposit, 2 holes, and one wedge, into the Queen Hill Deposit and 4 holes targeted proximal geophysical targets.

In February 2013 T. Callaghan, of Resource and Exploration Geology, carried out revised computer modelling of the three deposits utilising all the drill data to that date. Based on this he completed a new resource estimate of the project. The results of this estimate are summarised below in Table 1.

**Table 1. Heemskirk Tin Project: 2013 JORC Mineral Resource Estimate**

Classification	Deposit	Tonnes millions	Grade % tin	Contained Tin tonnes
Indicated	All	1.41	1.26	17,790
Inferred	All	4.87	1.10	53,710
<b>Total</b>		<b>6.28</b>	<b>1.14</b>	<b>71,500</b>
Indicated	Queen Hill	1.41	1.26	17,790
Inferred	Queen Hill	0.19	1.63	3,090
	Severn	4.17	0.98	40,900
	Montana	0.51	1.91	9,710
<b>Total</b>		<b>6.28</b>	<b>1.14</b>	<b>71,500</b>

0.6% tin block cut-off grade

Tonnes rounded to reflect uncertainty of estimate

Estimates prepared by Resource and Exploration Geology

Mining consultants, Mining One, completed a preliminary mine design and cost estimate to pre-feasibility level for the Heemskirk Project in August 2013. This study was based upon Tim Callaghan's Mineral Resource estimate and model and assumed the use of a mining contractor at standard industry rates. This study estimated:

- **Mine Operating Costs at \$65.17/tonne of ROM Ore**
- **Mine Capital Cost at \$92.8M.**

Based on the Mining One mining study and metallurgy test work GR Engineering Services Ltd (GRES) completed a pre-feasibility study (PFS) of the Heemskirk Tin Project in August 2013. GRES utilised metallurgical testwork, both historic and recent, and produced project design criteria that represents the full-scale operation of a 600,000TPA, 7 day/week, processing plant. The study covered all aspects of ore processing from ore crushing to loading of mineral concentrate for shipment. It included the pumping of tailings to a tailings storage facility and the system for recovery of water back to the processing plant. This study estimated:

- **The Processing Plant capital cost at approximately \$90M**
- **Operation costs at approximately \$34.00/Tonne Treated.**

Metallurgical testwork has continues on composite drill core samples of both Lower Queen Hill and Severn ores.

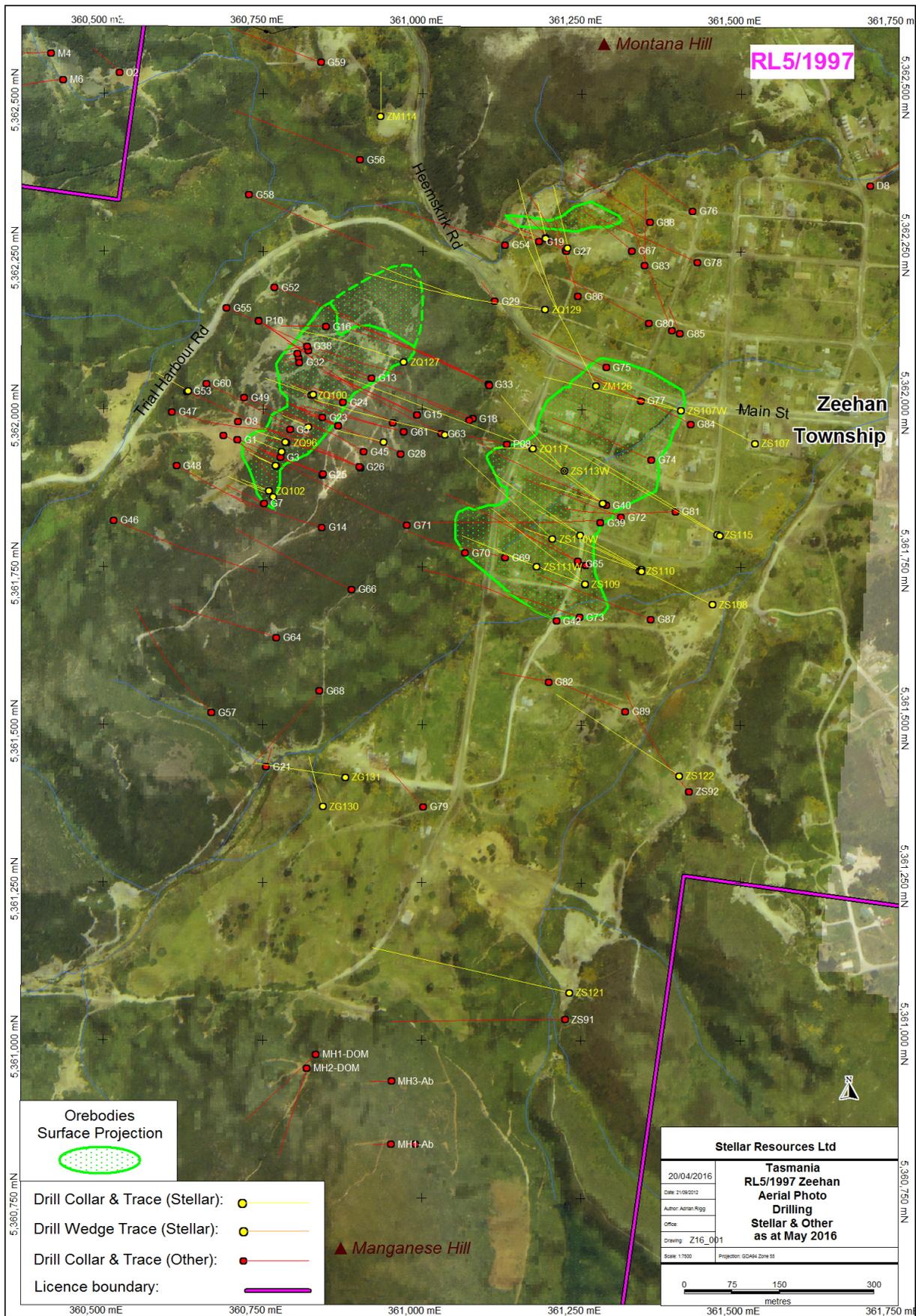


Figure 5. RL5/1997, Heemskirk Tin Project: Geology, Structure, Deposits & Historic Drilling

### 3. EXPLORATION COMPLETED DURING THE REPORTING PERIOD

#### 3.1. GEOLOGICAL STUDIES

As a part of a geological optimisation study, Teale and Associates completed a mineralogical investigation of mineralising events (paragenesis) that gave rise to the Heemskirk tin deposits (Queen Hill and Severn deposits). Refer to Figure 6. The study identified five phases of mineralisation within an extended period of time spanning emplacement and deformation by the Late Devonian Heemskirk Granite (refer Table 2). The five phases represent a simplification of a complex interaction between multiple hydrothermal pulses, deformed low-grade metamorphic sediments and volcanics and a high strain environment.

As Table 2 shows, the hydrothermal pulses begin as high energy events with the formation of early phase silica and pyrite rich breccias (Phase 1). Following brecciation, high temperature fluids flowed through the more porous footwall sediments replacing silicates with minerals rich in fluorine, boron, rare-earth elements and early low grade cassiterite (Phase 2). The Middle high temperature phases are important for the formation of ore-grade cassiterite with quartz, iron sulphides and tourmaline in high-strain zones and high grade idioblastic cassiterite and quartz in low-strain zones – the dominant mineralisation at Severn (Phases 3 and 4). The final phase involved low temperature fluids rich in base metals and tin travelling along faults and mineralising more distal locations of low strain – Upper Queen Hill (Phase 5).

**Table 2. Heemskirk Tin Project: Mineralising events (“Phases”) – (Teale, 2015)**

Phase	Event	Characteristics	Tin Content
1) Early Breccias	Explosive release of silica/pyrite rich fluids	Silicified crackle, milled and shingle breccia	Minimal
2) Early High Temp	Fluorine rich fluids in footwall quartzite	Topaz, lesser Sn and REE replacing silicates	Low
3) Middle High Temp	Intense NW trending shearing - high fluid flow	High strain quartz, tourmaline, cassiterite	Moderate
4) Middle High Temp	Shear induced voids fill with mineralising fluids	Idioblastic tourmaline, quartz, cassiterite	High
5) Late Low Temp	Base metal rich fluids replace high temp minerals	Ag/Pb/Zn/Sn mineralisation, "wood" tin	High

Unravelling the history of mineralisation has provided a focus for resource drilling and future exploration. Phases 3 and 4 are particularly important as 60% of the cassiterite mineralisation at Heemskirk is associated with these events. In addition, the northwest orientation of the high strain environment provides an important vector for testing extensions of the high grade tin mineralization encountered at Severn in a number of drill holes. This work also reinforces the view that the mineralisation should continue at depth with major faults playing a role in its location.

Dr. Teale has completed his study and his findings are summarized below with his report presented digitally as Appendix 2.

- The tin and base metal mineralisation is associated with fluids that were enriched in B, F, Si, Sn, As, Zn and Pb. It is most likely that mineralisation was introduced over a significant time period with varying stocks responsible for providing pulses of aqueous and hydrothermal fluids. The earliest fluids were Si-rich.
- Breccias are common and dilational positions within the overall Queen Hill and Severn domain are ideal exploration targets. The intersection of D<sub>1</sub> and D<sub>2/3</sub> folds forms an ideal position for creation of dilational positions. Hanging wall lodes need to be understood.
- There are geochemical differences between the Queen Hill and Severn mineralisation. Severn is generally Cu-rich (0.1%-0.4% Cu) and contains no Pb + Zn with Queen Hill containing anomalous Pb-Zn but no Cu.
- Axial planar shears (D<sub>2/3</sub>?) and fault structures contain tin mineralisation and have been used as “channel-ways” for mineralising fluids.
- Infill textures are common and a significant amount of high grade tin mineralisation is associated with infill structures. These may trend NW. They are high grade and form shoots which plunge steeply to the NE.
- “Infill” lodes are best developed in more siliceous meta-sediments with the fabric perpendicular to bedding. Strain increases towards the “infill” lodes.

- Do chlorite-rich altered mafic sills and volcanics act as an “aquiclude” to mineralising fluids? Tin-bearing veins cut possible altered mafics (for example, ZS120-516.3m). If this happens there may be “pooling” of mineralisation below the mafic. Similarly, footwall fluid movement takes place.
- Drill-hole G92 intersected significant mineralisation of the “Severn-style” (9.5m @ 0.372% Sn), that is Cu anomalous and no Pb + Zn. This zone may represent the structural top of another Severn ore-body.
- Shear mineralisation contains deformed and boudinaged tin mineralisation. This can be cross-cut by late tourmaline-Sn veining.
- Topaz, with cassiterite + stannite + chalcopyrite, develops in the footwall to mineralisation with this mineralisation parallel to bedding. Fluids move along the contact of more micaceous beds with porous quartz-sandstone.
- The Severn and Queen Hill Mineralisation is not strictly replacive, and is not stratiform or stratabound. Crackle fracturing, crackle breccias, milled breccias and “shingle” breccias can be observed. Mineralisation can develop within the Oonah Quartzite, Oonah Shales/Silts and up into the Crimson Creek Formation. Mineralisation can develop 100m-150m above the Oonah Quartzite, i.e. mineralisation can develop over a significant stratigraphic and structural level.
- In some areas, mineralisation is interpreted to cut across the various faults (Oonah, Astles, Montana). What does this suggest?
- Cassiterite is generally coarse grained (0.1mm-0.8mm).
- The North West Connection (NW) – structure and fluid movement
- The North East Connection (NE) – lithotypes, viz. Crimson Creek, Oonah Quartzite and Oonah shales and silts (highly carbonaceous)
- Potential for structural repetitions of “Severn-style” mineralisation (e.g. G92)

## **3.2. GEOPHYSICAL STUDIES**

The discovery of historical 2D seismic lines running across the Heemskirk deposits has provided an insight into subsurface structure and the potential for down-plunge extensions to the known tin mineralisation. Two lines of a six-line survey completed by a previous explorer (Great Southland Minerals) in 2008 run across the Heemskirk tin deposits (refer to Figure 8 for line locations).

### **3.2.1. Seismic Interpretation**

IAMM Consulting were engaged to carry out an interpretation of the seismic data (refer Figure 9). This included interpretation of 2D seismic geophysical lines to better define subsurface structure at the hard-rock Heemskirk project.

The position of the main tin bodies, identified by drilling, is shown in Figure 9 by blue and red lines (labelled Sulphide-Cassiterite bodies) superimposed on the section (seismic is unable to differentiate between sulphides and the steeply dipping surrounding sediments). All of the faults shown in purple are interpreted. The two main surface faults, Montana and Oonah, intersect the seismic section at an acute angle and can be traced on the image to a depth of 1.0 km from surface. The penetrative nature of faulting suggests that it is likely to have played a role as a conduit for mineralising fluids emerging from the granite stock.

The granite body, as defined by a zone of seismic incoherence, is interpreted to be the area below and to the right of the black line (refer Figure 9). The interpreted granite body has a sharp edge to the north and a relatively flat top which is consistent with magnetic inversion modelling. At the shallowest point, the depth from surface to the interpreted granite body is estimated to be 1,000m.

Seismic interpretation has identified many more faults than those mapped at surface or logged in drill core and demonstrates the potential for a number of faults to have tapped granitic fluids. It has also reinforced Stellar's view that a highly prospective zone exists between the deepest drill holes, 500m from the surface, and the top of the granite.

The IAMM Seismic Interpretation report is presented digitally as Appendix 3.

### 3.3. METALLURGICAL TEST WORK

Metallurgical optimisation testwork early this year increased average recovery by 4.5% to 72.8% and increased planned annual tin production by 200 tonnes to 4,527 tonnes.

In addition, the recognition that sulphides could be effectively separated from cassiterite at coarser grind size ( $P_{80} \sim 250\mu$ ) than was assumed in the PFS meant that the process circuit could be simplified by eliminating heavy media separation and reducing the size of the primary grind circuit. Another advantage of these changes was the 8% increase in tin recovered by lower cost gravity methods.

The testwork undertaken (as reported last year) covered all major unit processes including:

- Comminution
- HMS
- Sulphide flotation
- Gravity Separation
- Gravity Concentrate Dressing
- De-sliming
- Tin flotation
- Concentrate leach

The general overall program approach was to progressively optimise each of the upstream flowsheet areas, then generate sample under the 'optimised' conditions to form the feed for downstream testwork. This approach was taken to ensure testwork on the downstream areas of the flowsheet was conducted on a reasonably representative feed.

The program was completed under the supervision of Worley Parsons via ALS Metallurgy Burnie laboratory (ALS job no. T0879). A paper summarising this work, presented by Worley Parsons at the 11<sup>th</sup> International Mineral Processing Conference, is presented digitally as Appendix 4.

### 3.4. MINING STUDIES

In the 2013 Pre-Feasibility Study mining consultants, Mining One, utilised typical contractor rates and costs in order to complete the evaluation. Stellar decided that the development advance rate and costs, in particular, should be examined in further detail. Polberro Consulting, was commissioned to carry out this review. The Polberro report is presented digitally as Appendix 5.

To facilitate this determination a summary of the PFS data was forwarded to a number of development contractors who were requested to provide cost and development rates estimates, and a statement of capability regarding the provision of mining and development services for the proposed operation.

In addition, further optimisation of the project was achieved by incorporating the following: -

- Transverse Open Stopping (TOS) proposed as a mining method for wide sections of the Severn orebody.
- The use of Paste Fill to replace cemented rock fill and cemented aggregate fill.
- The use of waste rock fill to replace consolidated fill for narrow bench stopes (nominally <6m)

The use of paste fill in conjunction with transverse open stopping, where appropriate, is expected to increase scheduling flexibility and reduce mining costs by 8.7% or A\$6/t.

The data from the contractor quotations and the above changes were sequentially incorporated into the PFS cost model in order to evaluate potential savings.

In the examples considered, advance rates for single heading development were 200m/month or higher compared with 120m/month assumed in the PFS. In the optimisation study, an advance rate of 180m/month has been assumed. The five months saved from the development timetable provided a pre-production labour cost saving and brought cash flow forward.

The mine development timetable was reduced from 17 months to 12 months following the review of underground contractor advance rates by Polberro Consulting.

### **3.5. PERMITTING & ENVIRONMENTAL STUDIES**

#### **3.5.1. Flora & Fauna Surveys**

During the period, follow-up flora and fauna survey work focused on the area to be disturbed by Stellar's proposed mining activities on the northwest side of Queen Hill (refer to Figure 10). Flora and fauna consultant Phil Milner has submitted the findings from his field survey for Tasmanian Devils and potential den sites and Horned Orchid habitat. This report is appended in digital form as Appendix 6.

Milner's work identified no evidence of endangered flora and fauna in the area. In addition, there was no evidence of native animals using any of the historical adits that were surveyed in the area.

No Horned Orchids nor suitable Horned Orchid habitat were observed during the survey of the proposed development footprint. Milner concluded the proposed development will not impact on any potential habitat for the Horned Orchid.

With regard to Tasmanian Devils Milner found no evidence of the presence of Tasmanian Devils within the area proposed for the development, in particular scats or paw prints in wet ground along tracks. It should be noted however that the previous survey in May 2014 did identify a number of scats of Tasmanian Devils along the lower track which heads back towards Zeehan.

None of the adits located, plotted and assessed within the area (refer to Figure 11) showed evidence of use by any native animals, including devils, however there is potential for at least some of the adits to be utilized as periodic dens or lay-ups by devils.

No potential natal devil den sites were observed in the location. Two burrows observed showed no sign of recent use by any animal, including devils. No hollow logs or basal hollows in old-growth trees were observed within the survey area with potential as den habitat.

Milner concluded that it is most unlikely that there are resident devils in the area of the proposed development, but there is a high probability that the area forms part of the home range of one or more individual devils. As evidence of the presence of Tasmanian Devils was observed during the previous survey it is probable that devils either frequent the area periodically/randomly or possibly seasonally.

The next step is to test the potential for native animals to use the adits by monitoring activity around the entrance to selected prospective examples using remote sensing cameras. Two camera were installed in April.

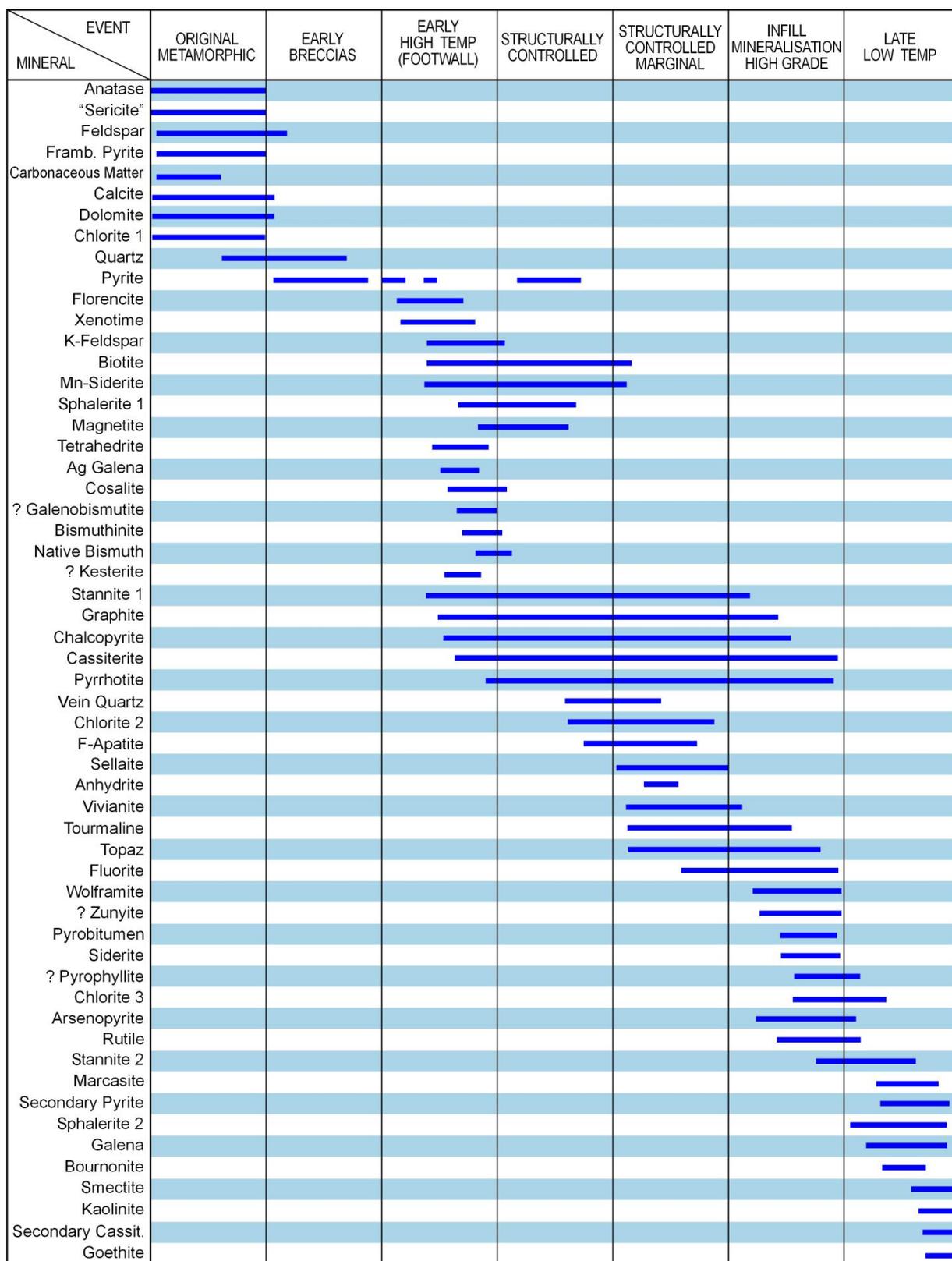


Figure 6. RL5/1997, Heemskirk Tin Project: Paragenetic Sequence, Queen Hill – Severn Mineralisation (Teale, 2015).

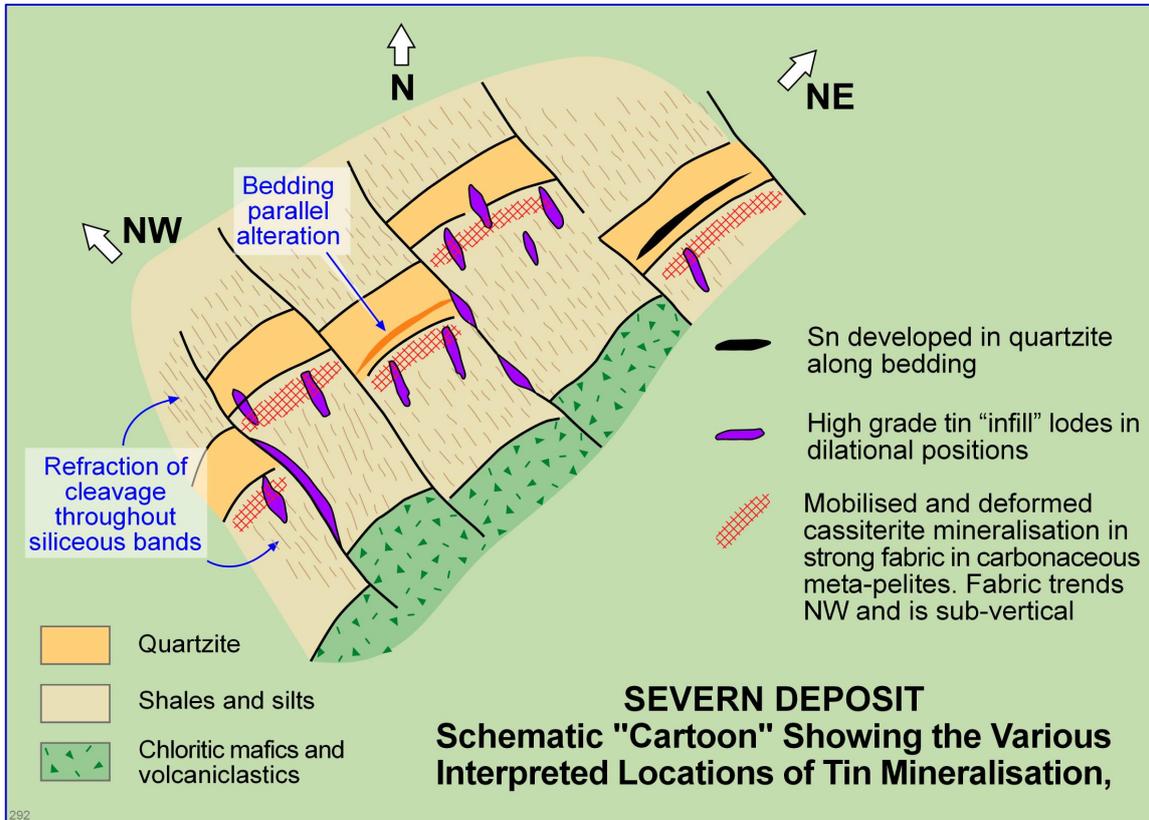


Figure 7. RL5/1997, Heemskirk Tin Project: Schematic Severn Mineral Distribution Cartoon (Teale, 2015).

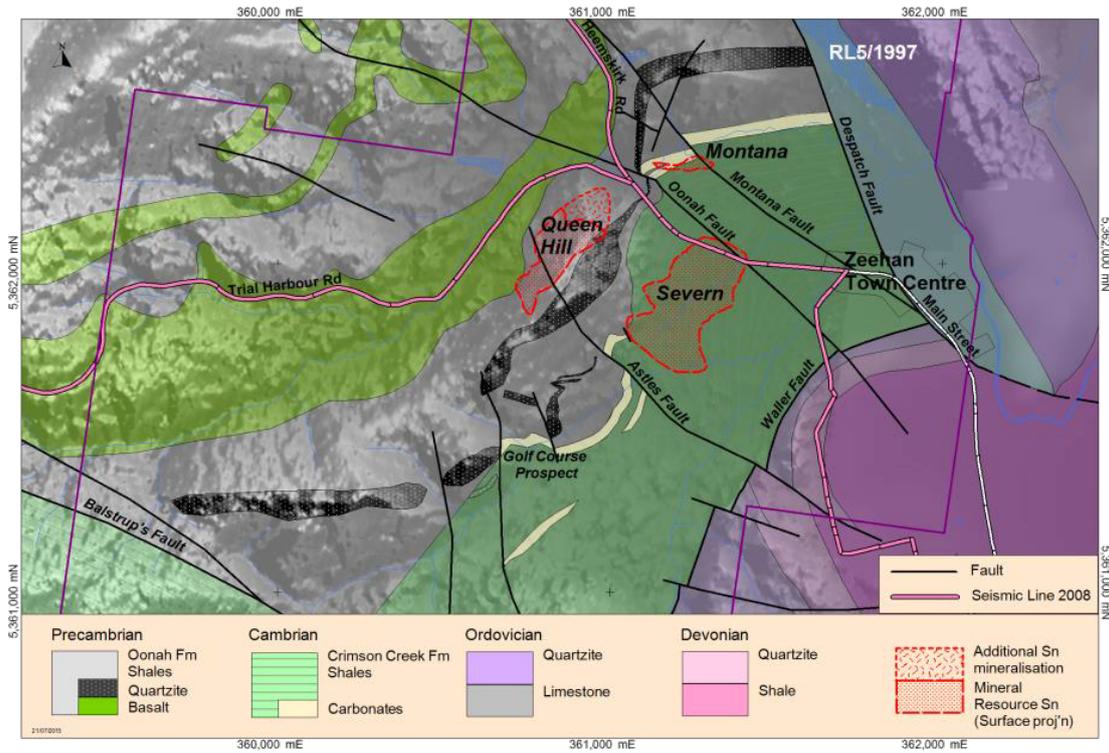


Figure 8. RL5/1997, Heemskirk Tin Project: Simplified geological map showing Seismic Lines

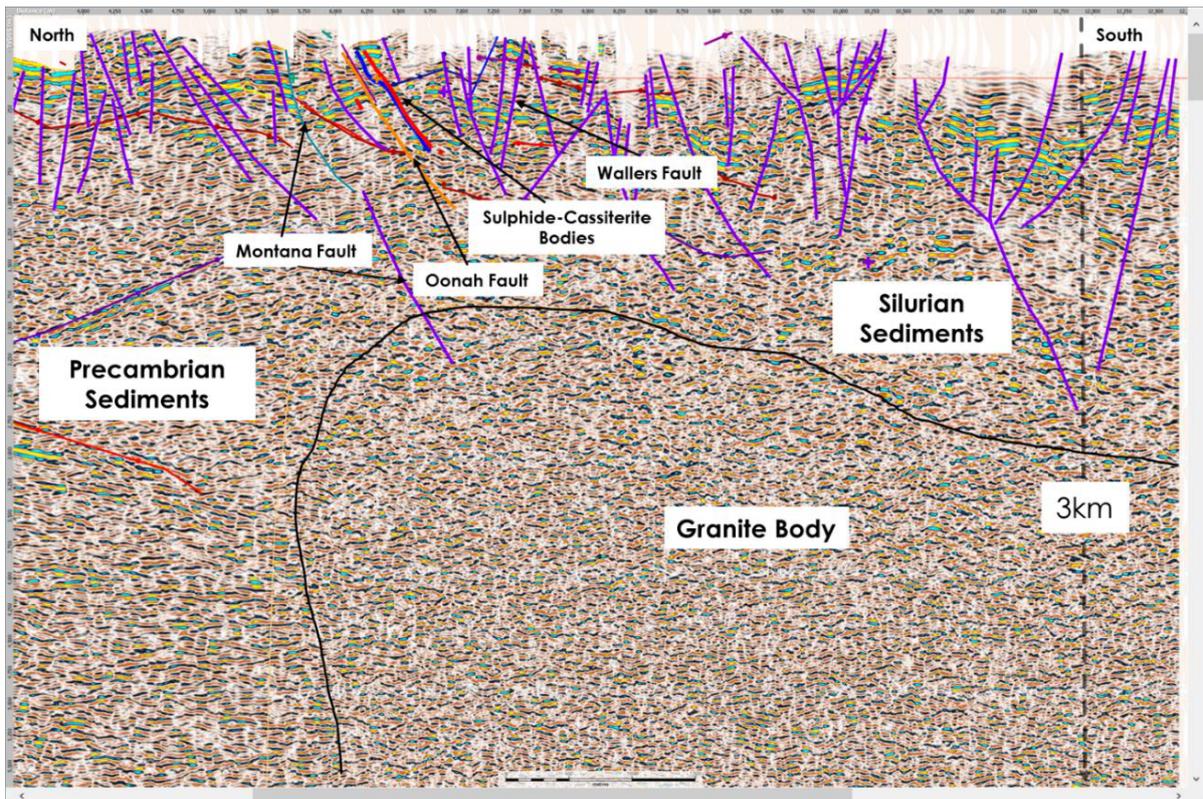


Figure 9. RL5/1997, Heemskirk Tin Project: Seismic interpretation along north-south section across the Heemskirk tin deposits



Figure 10. RL5/1997, Heemskirk Tin Project: Flora & Fauna Survey / Proposed Development Area.

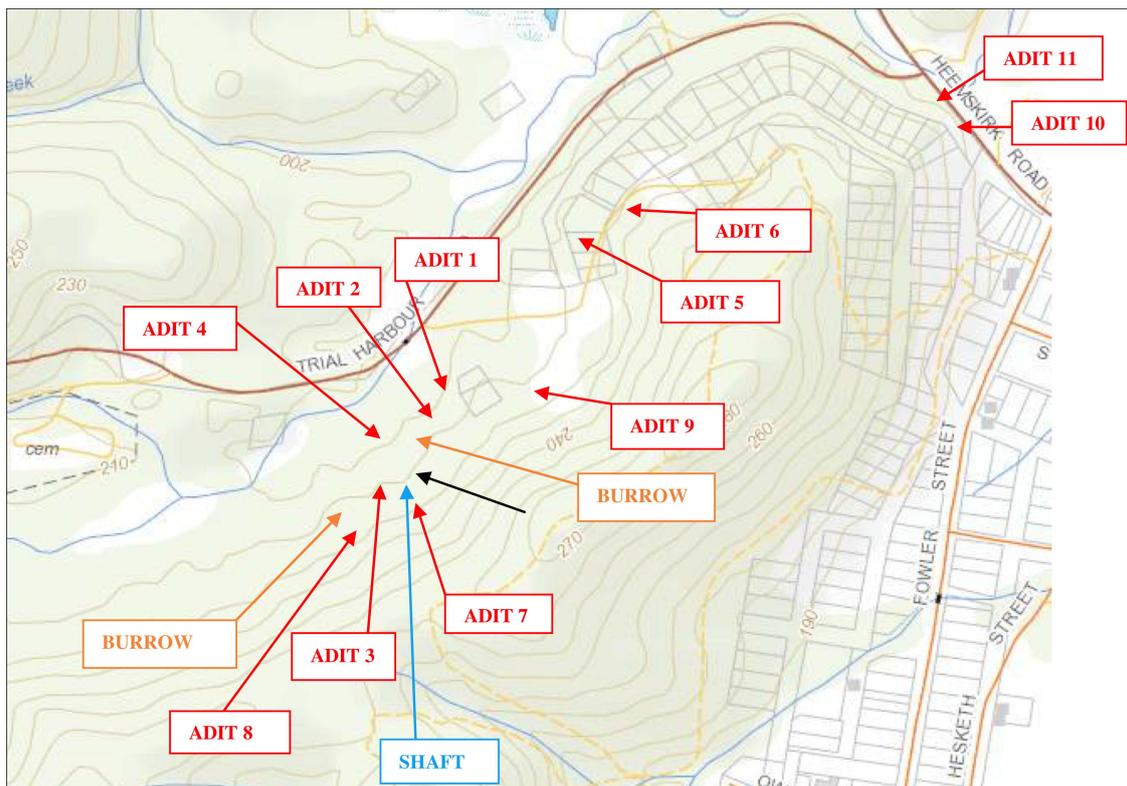


Figure 11. RL5/1997, Heemskirk Tin Project: Potential Tasmanian Devil Den Sites Proposed Development Area.

## 4. DISCUSSION

### 4.1. GEOLOGICAL STUDIES

Graham Teale's mineragraphic studies and paragenesis conclusions and IAMM's seismic interpretation have provided a number of geological targets within, and around the periphery, of the known deposits which warrant testing by drilling.

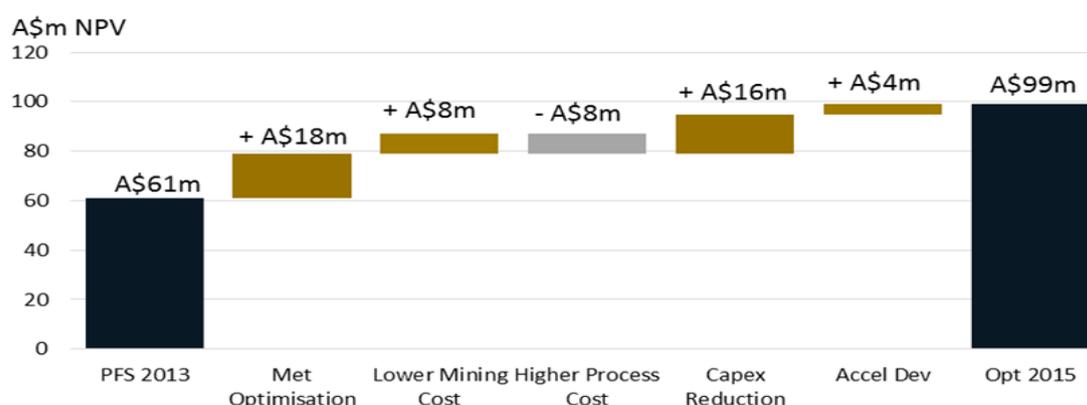
These targets will be incorporated in the DFS drilling program or smaller purposed drill programs. The objective of these programs being both upgrading the grade, tonnage and JORC stature of the known deposits and the discovery of peripheral deposits as indicated by Teale's work.

### 4.2. PRE-FEASIBILITY OPTIMISATION STUDY

As a result of the 2013 PFS Optimisation Study the NPV of the Heemskirk tin project has been substantially upgraded to A\$99m.

The A\$38m, or 62%, increase in NPV was achieved following a cost review of all elements of the project (refer Table 3). Metallurgical optimisation increased average recovery by 4.5% and contributed A\$18 million to the NPV upgrade. Mining costs were also reduced, contributing A\$8m to the NPV gain. However, an increase in processing costs largely offset the mining gain. A reduction in pre-production capital also provided an A\$16m saving. Part of that saving came from accelerated development of the underground mine which also added A\$4m to the NPV by bringing cash flow forward in time.

**Table 3. Heemskirk Tin Project: NPV optimisation**



#### 4.2.1. Capital Cost

Pre-production capital was reduced by 12.9% or A\$16.3m to A\$110.3m as a result of the optimisation program. In US\$ terms, the favourable movement in the exchange rate from 0.90USD/AUD at the time of the PFS to 0.70USD/AUD today has reduced the pre-production capital requirement by 32.3% from US\$114.0m to US\$77.2m (refer Table 4). Simplification of the process plant, reduction in equipment costs, lower engineering and construction cost and faster mine development led to the reduction in pre-production capital.

**Table 4. Heemskirk Tin Project: Capital cost reduction through optimisation**

Capital Item	PFS 2013 A\$m	Optimised 2015 A\$m	Change %	Comments
Mine	37.9	35.5	-6.5	Mine development reduced to 12 months
Process	88.7	74.8	-15.7	Plant simplification and lower cost sourcing
<b>Total A\$m</b>	<b>126.6</b>	<b>110.3</b>	<b>-12.9</b>	More productive development
<b>Total US\$m</b>	<b>114.0</b>	<b>77.2</b>	<b>-32.3</b>	Weak A\$ provides competitive advantage
<b>Total US\$/tonne ore</b>	<b>190</b>	<b>129</b>	<b>-32.3</b>	Annual throughput remains at 0.6mt

#### 4.2.2. Accelerated Mine Development

The mine development timetable was reduced from 17 months to 12 months. In the optimisation study, an advance rate of 180m/month was assumed. The five months saved from the development timetable provided a pre-production labour cost saving and brought cash flow forward.

The use of paste fill in conjunction with transverse open stoping, where appropriate, is expected to increase scheduling flexibility and reduce mining costs by 8.7% or A\$6/t.

#### 4.2.3. Simplified Process Flow Sheet

Metallurgical optimisation increased average recovery to 72.8% and increased planned annual tin production to 4,527 tonnes.

In addition, the process circuit can be simplified by eliminating heavy media separation and reducing the size of the primary grind circuit. These changes result in a 8% increase in tin recovered by lower cost gravity methods.

#### 4.2.4. Operating Cost

Optimisation reduced mine gate cash operating costs (refer C1, Table 5) by 5% to A\$14,927/t of tin in concentrate and total cash costs (C2) by 4% to A\$18,156/t or US\$12,709/t at an exchange rate of 0.70USD/AUD. At today's bottom of the cycle LME spot tin price of US\$15,900/t, Heemskirk would be generating positive cash flow of US\$3,200/t of tin in concentrate and covering total unit cost (C3) by US\$950/t.

**Table 5. Heemskirk Tin Project: Unit operating cost by activity**

Activity	PFS 2013 A\$/t Sn	Opt 2015 A\$/t Sn	Change %	Opt 2015 US\$/t Sn 0.70USD/AUD
<b>C1 mining, processing, admin</b>	15,705	14,927	-5.0	10,449
+ tc/rc, transport, royalties	3,229	3,229	0.0	2,260
<b>C2 cash operating cost</b>	18,934	18,156	-4.1	12,709
+ depreciation & amortisation	4,335	3,199	-26.2	2,239
<b>C3 total operating cost</b>	<b>23,269</b>	<b>21,355</b>	<b>-8.2</b>	<b>14,949</b>

#### 4.3. PERMITTING & ENVIRONMENTAL STUDIES

This work is being managed by John Meidecke and Associates and is directed to addressing all issues identified in the EPA's DPEMP guidelines and results of ongoing discussions with the MRT and EPA. The DPEMP guidelines covered all of the areas identified in the Notice of Intent (NOI) and will guide the direction, extent and scheduling of the program.

The existing studies (i.e. surface water and flora and fauna) will continue and be expanded to include other areas which will form part of the project (i.e. tailings dam site, waste rock site etc.). Other studies to be implemented include groundwater, waste geochemistry, noise, ground vibration and seismicity.

Groundwater studies will require the installation of piezometers and it is likely that some of the DFS grid drillout holes can be used for this purpose on completion.

Other surveys likely to commence in 2015/16 include heritage (european and indiginous archaeology), noise, ground vibration studies and the maintenance of the fauna monitoring program.

## 5. CONCLUSIONS & PROPOSED WORK

The Heemskirk Tin Project comprises three structurally controlled and replacement tin deposits with substantial scope to increase both the size and quality of the known deposits and to add to this resource through the discovery of additional mineralisation at depth.

### 5.1. DFS DRILLING PROGRAM

Conversion of the Optimised 2013 PFS to a DFS requires an upgrade of the Heemskirk Inferred Mineral Resource to the Indicated Category. The upgrade would allow an Ore Reserve to be defined in accordance with the 2012 edition of the JORC Code. In addition, the program would provide an opportunity to test structural influences on tin grade distribution, particularly in the Severn deposit, as per results of the Teale study.

Resource and Exploration Geology has recommended a 55 diamond drill hole infill program amounting to 22,000m to achieve the upgrade. Severn, the largest of the three deposits, requires 15,000m of drilling and accounts for 68% of the total program (see Figure 12). Montana and Queen Hill each account for 16% of the proposed drilling program.

As Figure 12 shows, many of the drill pads required for the drilling program are already in place from earlier programs minimising social and environmental impacts and the cost of access.

### 5.2. FAST-START SCOPING STUDY

Considering the three Heemskirk tin deposits (Queen Hill, Montana and Severn), Queen Hill is the obvious target for a fast start study because it is the only deposit exposed at surface and located close to the preferred portal site. It is also largely drilled to Indicated Resource status and would require little additional drilling to generate an ore reserve.

Based on variations in chemistry and mineralogy, Queen Hill can be divided into two distinct sections, Upper and Lower. Lower has higher tin grade and lower copper, silver, lead and zinc grades than Upper (see Table 6). Cassiterite grain size is also coarser in the Lower deposit. At this stage the geological boundary between the two is at about the 1100m RL although the boundary appears to be gradational.

**Table 6. Heemskirk Tin Project: Upper and Lower Queen Hill Mineral Resource**

Queen Hill	Tonnes millions	Sn %	Contained Sn tonnes	Cu %	Pb %	Zn %	Ag ppm
Upper (above 1100m RL)	0.51	1.19	6,056	0.10	1.20	0.77	46
Lower (below 1100m RL)	1.09	1.36	14,824	0.03	0.16	0.17	7
<b>Total Queen Hill</b>	<b>1.60</b>	<b>1.31</b>	<b>20,880</b>	<b>0.06</b>	<b>0.50</b>	<b>0.36</b>	<b>19</b>
Indicated	1.41	1.26	17,790				
Inferred	0.19	1.63	3,090				
<b>Total Queen Hill</b>	<b>1.60</b>	<b>1.31</b>	<b>20,880</b>				

1. estimates prepared in accordance with 2004 edition of JORC Code

2. block cut-off grade of 0.6% tin

3. tonnes rounded to reflect uncertainty of estimate

4. estimates prepared by Resource and Exploration Geology

In summary, Lower Queen Hill was chosen over the other deposits as the target for a Fast Start Scoping Study because:

- It is the closest deposit to the preferred portal location
- It is largely drilled to Indicated Resource status and would require little additional drilling to generate an ore reserve
- It is higher grade (1.36% versus 1.19% tin) and larger in size (1.09mt versus 0.51mt) than Upper Queen Hill (see Table 6)
- Cassiterite grain size is coarser and metallurgical recovery should therefore be better than Upper Queen Hill

The Fast Start Scoping Study is based on an annual run of mine production rate of 200,000 tpa for the first 5 years of operation from Lower Queen Hill (see Figure 13). Drilling and development of the Severn deposit during this time will determine whether the mine continues to operate at the 200,000 tpa rate for another 16 years or whether it could be scaled up to a higher production rate.

Contractors have been engaged to undertake scoping work on the mine plan, surface infrastructure, flow sheet, equipment sizing, procurement, construction cost and operating cost estimates. The recent sourcing of input prices for the OPFS should be an advantage for the Fast Start Study.

In addition to the aims identified earlier, the study will focus on opportunities to identify lower cost and more productive mining methods and an ore production schedule that maximizes higher grade production in the early years. Modularisation of the processing plant should provide cost advantages and preserve expansion opportunities.

The scoping study will focus on Lower Queen Hill between 1100m RL and 950m RL (as shown in Figure 13), the limit of the Indicated Resource. However as Figure 14 demonstrates, the mineralisation continues at least 100m below the 950m RL providing an opportunity to explore for additional ore to extend mine life as mining progresses.

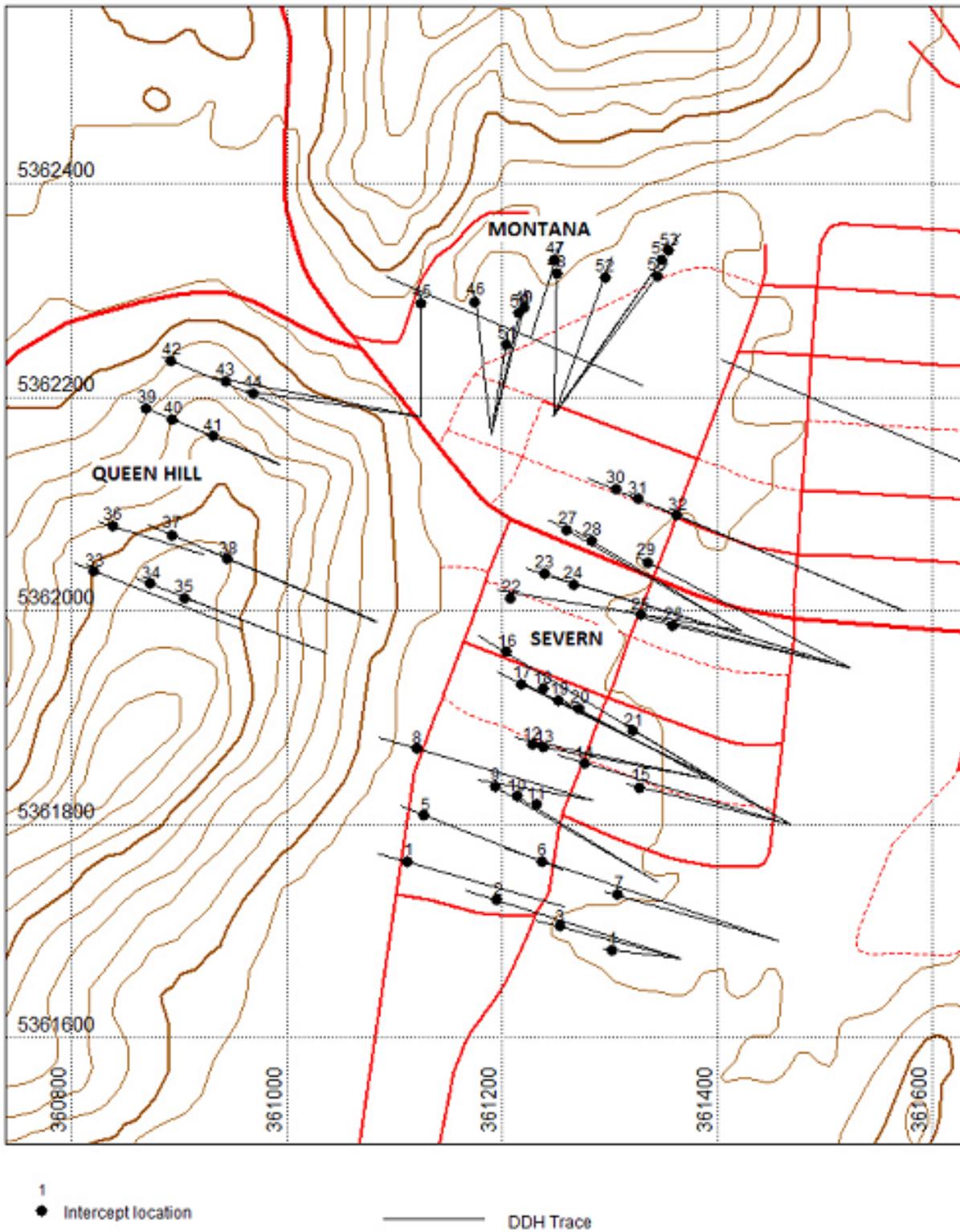


Figure 12. RL5/1997, Heamskirk Tin Project: Plan of proposed drill holes for DFS

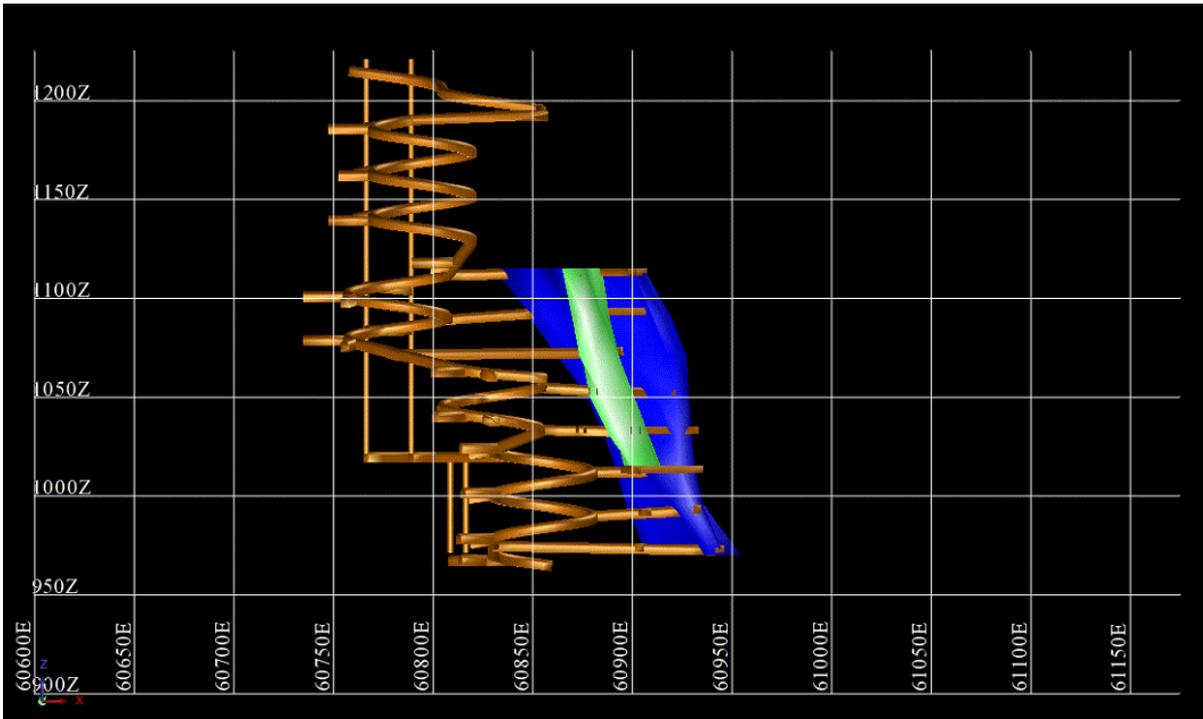


Figure 13. RL5/1997, Heemskirk Tin Project: Lower Queen Hill Deposit Fast-Start Mine Plan

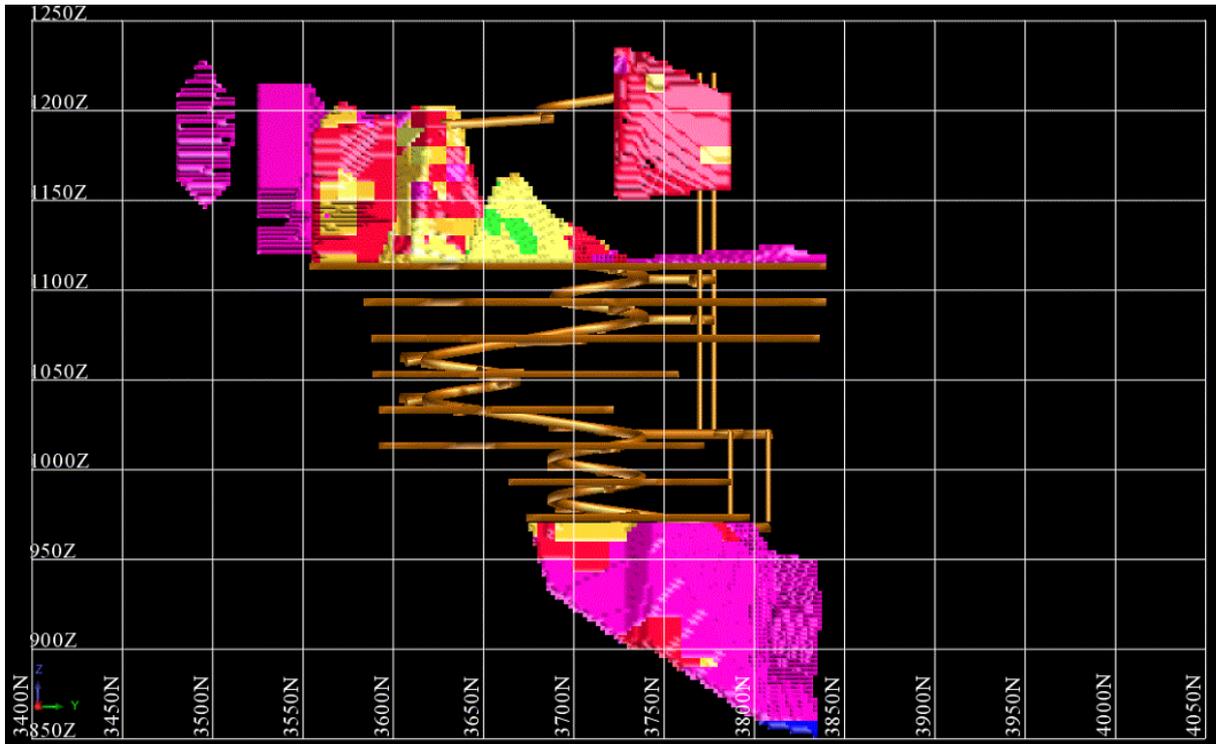


Figure 14. RL5/1997, Heemskirk Tin Project: Queen Hill Deposit continuation below 950m RL

## **6. ENVIRONMENT**

Most of the drill pads used in Stellar's recent drilling programs have not been rehabilitated. They are rock and gravel paved and contoured pads which are intended for future use in the DFS drilling program. All are being maintained and managed for weed control. All of the drilling sumps have been filled in and stabilised.

Most of the holes have been capped with concrete plugs but some of the holes have been cased with slotted PVC and the collars capped with a sealed steel collar pipe. These holes are used for groundwater monitoring and sampling and may be used for future downhole geophysical surveys.

## 7. EXPENDITURE

<b>Transaction Report</b>			
Printed At: 11/05/2016 10:33:59 AM		<b>Columbus Metals Limited</b>	
Job No	Job Details	Department	
Tran. Date		Doc Ref - Description	Amount
Job Code: GIP901	ZeehanTin - RL 5/1997	D1	
	1053	Technical	\$114,800.62
	1054	Labour	\$21,567.90
<b>Phase Total</b>	<b>105</b>	<b>STAFF COSTS</b>	<b>\$136,368.52</b>
	1061	Professional Technical	\$19,332.50
<b>Phase Total</b>	<b>106</b>	<b>CONTRACT PERSONNEL</b>	<b>\$19,332.50</b>
	1072	Geoscientist	\$55,431.72
	1073	Engineering	\$5,572.69
	1074	Other	\$2,410.91
	1075	Environmental	\$6,683.11
<b>Phase Total</b>	<b>107</b>	<b>CONSULTANT PERSONNEL</b>	<b>\$70,098.43</b>
	1161	Assays	\$2,110.00
	1163	Preparation/core cutting other	\$320.00
<b>Phase Total</b>	<b>116</b>	<b>ASSAYS</b>	<b>\$2,430.00</b>
	1251	Vehicle Costs All	\$12,597.40
	1252	Office Costs	\$479.11
	1253	Field Operations Consumables	\$663.62
	1254	Safety Equipment	\$74.51
	1255	Equipment Hire	\$517.04
<b>Phase Total</b>	<b>125</b>	<b>SUPPORT COSTS</b>	<b>\$14,331.68</b>
	1304	Drafting and Presentation	\$218.18
<b>Phase Total</b>	<b>130</b>	<b>DATA PROCESSING</b>	<b>\$218.18</b>
	1505	Rents/ Other Utilities	\$14,125.36
<b>Phase Total</b>	<b>150</b>	<b>TENEMENT COSTS</b>	<b>\$14,125.36</b>
	1551	Meals and Accomodation	\$5,474.05
	1552	Airfares	\$3,151.89
	1553	Vehicle Hire	\$4,799.46
	1554	General Expense	\$673.22
<b>Phase Total</b>	<b>155</b>	<b>TRAVEL</b>	<b>\$14,098.62</b>
	1651	Administration	\$103,600.00
<b>Phase Total</b>	<b>165</b>	<b>OVERHEADS</b>	<b>\$103,600.00</b>
<b>Job Total : GIP901</b>			<b>\$374,603.29</b>
			<b>\$374,603.29</b>
<b>Report Total:</b>			<b>\$374,603.29</b>

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## **Keywords**

Location:	Zeehan
Mineralisation environment:	Sulphide Skarn
Minerals:	Cassiterite, Stannite, Pyrite, Pyrrhotite, Magnetite
Exploration methods:	Historic Research, Diamond Drilling, Metallurgical Testwork, Mining Studies, Environmental Studies
Mine/prospect name:	Heemskirk Tin Project, Queen Hill Deposit, Severn Deposit, Montana Deposit, Golf Course Prospect, Stormsdown Prospect
Stratigraphic name:	Oonah Formation, Success Creek Group, Crimson Creek Formation, Gordon Limestone, Eldon Group, Heemskirk Granite
Lithologic name:	quartzite, volcanoclastic, basalt, siltstone, shale, limestone, dolomite, granite
Geological Province:	Dundas Trough
Geological age:	Lower Neoproterozoic, Palaeozoic