



**STELLAR RESOURCES LIMITED**  
Rubicon Min Tech Ventures Pty Ltd

**EL 46/2003 HEEMSKIRK**

**ANNUAL REPORT FOR THE PERIOD  
3 JANUARY 2008 – 2 JANUARY 2009**

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

**DATE: January 2009**

**SUBMITTED TO: Executive Chairman**

**DISTRIBUTION:**

**Mineral Resources Tasmania, a Division of the  
Department of Infrastructure, Energy and Resources - Hobart  
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**ACCEPTED BY:**

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## **ABSTRACT**

This Annual Report for EL 46/2003 Heemskirk covers the period from 3 January 2008 to 2 January 2009.

The Heemskirk licence area contains historical occurrences of copper, tin and gold. Previous exploration in the area includes extensive stream sediment sampling, especially in the central and southern areas, geological mapping and a range of geophysical surveys, which have revealed numerous anomalies. Several drill holes have intersected mineralisation. As many of these remain untested or inadequately drilled, the licence area is prospective for the discovery of significant base metal mineralisation.

In Melbourne work has included the continuing collection of existing regional geological, geochemical and geophysical data and map production. Further modelling and definition of geophysical targets has taken place from electromagnetic and aeromagnetic datasets. With reference to the existing regional geological, geochemical and geophysical data, and with further detailed drill data available, target definition and modelling is proceeding on current active projects.

A portion of EL 46/2003 was covered by a VTEM survey as part of a survey of several Stellar's tenements during 2008. 249 km of VTEM was flown at 100m-line spacing over the western Bowry Formation and Gourlay's Creek areas of the licence.

Rehabilitation works were undertaken at the Alpine and Gourlay's Creek Prospects.

Total expenditure on EL46/2003 during 2008 totalled \$195,131.

## **TABLE OF CONTENTS**

<b>ABSTRACT .....</b>	<b>1</b>
<b>LIST OF TABLES .....</b>	<b>3</b>
<b>INTRODUCTION.....</b>	<b>4</b>
<b>1.1. EXPLORATION RATIONALE &amp; GEOLOGICAL SETTING .....</b>	<b>4</b>
1.1.1. Geological Setting .....	4
<b>1.2. LICENCE.....</b>	<b>5</b>
<b>1.3. LOCATION OF LICENCE .....</b>	<b>6</b>
<b>1.4. LAND TENURE.....</b>	<b>7</b>
<b>2. REVIEW OF PREVIOUS WORK .....</b>	<b>12</b>
<b>3. EXPLORATION COMPLETED DURING THE REPORTING PERIOD .....</b>	<b>14</b>
<b>3.1. REGIONAL EXPLORATION ACTIVITIES.....</b>	<b>14</b>
3.1.1. Data Acquisition, Mapping & Analysis .....	14
3.1.2. VTEM Survey .....	14
<b>3.2. ALPINE PROSPECT.....</b>	<b>14</b>
3.2.1. Drilling.....	14
<b>4. DISCUSSION OF RESULTS .....</b>	<b>18</b>
<b>4.1. REGIONAL EXPLORATION ACTIVITIES.....</b>	<b>18</b>
<b>5. CONCLUSIONS.....</b>	<b>20</b>
<b>5.1. RECOMMENDATIONS .....</b>	<b>20</b>
<b>6. ENVIRONMENT.....</b>	<b>21</b>
<b>7. EXPENDITURE.....</b>	<b>22</b>
<b>8. REFERENCES.....</b>	<b>23</b>
<b>Keywords .....</b>	<b>25</b>

## List of Figures

· Figure 1. EL46/2003, Location Map with Main Prospects.....	6
· Figure 2. EL46/2003, Land Tenure Map.....	8
· Figure 3. EL46/2003, MRT Geology with HEM and VTEM Targets.....	9
· Figure 4. EL 46/2003, Geological interpretation from magnetics.....	10
· Figure 5. EL46/2003, Geology (MRT) Draped Over Aeromagnetics .....	11
· Figure 6. EL46/2003, Historical Geochemical Grids .....	13
· Figure 7. EL46/2003, 2008 Exploration Activities Locations.....	15
· Figure 8. EL46/2003, 2008 VTEM Survey Flight Line Plan .....	16
· Figure 9. EL46/2003, 2008 VTEM Survey Line Traces .....	17
· Figure 10. EL46/2003, 2008 VTEM Anomalies on Magnetics .....	19
· Figure 11. EL46/2003, Alpine Prospect, AP018 drill track rehabilitation.....	21

## List of Tables

· Table 1. Alpine Drilling Specifications.....	14
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## APPENDICES

1. Heemskirk Projects Exploration Summary. A. Rigg
2. Heemskirk Prospects Summary. A Rigg
3. Survey And Logistics Report on Helicopter Borne Versatile Time Domain Electromagnetic (VTEM) Survey on the Tasmanian Project, Australia for Stellar Resources Ltd. Geotech Airborne Ltd.

## **INTRODUCTION**

### **1.1. EXPLORATION RATIONALE & GEOLOGICAL SETTING**

The licence covers southern end of the Arthur Lineament and the northern and eastern contacts and aureole of the Heemskirk Granite. The northern granite aureole hosts the St Dizier magnetite-tin Skarn Deposit and several other small skarns and is considered prospective for other similar deposits. In the southeast the aureole also hosts the Avebury Nickel Deposit. The Heemskirk Granite itself also hosts several small greisen deposits, some of which are in the EL.

In the north the EL covers the southern end of the Arthur lineament, including the Bowry Formation. The Bowry Formation hosts scattered stratiform magnetite-pyrite-chalcopyrite-gold mineralization. At Alpine significant copper mineralisation has been delineated and similar mineralisation has also been found at Gourlay's Creek. The recent VTEM survey has identified other targets, which warrant follow up exploration.

The licence is considered highly prospective for magnetite-pyrite-chalcopyrite-gold mineralization in the north, for magnetite-tin skarn deposits in the aureole of the Heemskirk Granite, for tin greisen deposits in the granite and possibly for limited Avebury type mineralization in the southwest.

#### **1.1.1. Geological Setting**

EL46/2003 covers part of the Meso-proterozoic rocks of the Zeehan-Waratah belt (mainly Oonah and Crimson Creek Formations) including the southern end of the Arthur Lineament Metamorphic Complex and the Dundas Trough. The Devonian Heemskirk Granite, a fractionated biotite granite - muscovite granite, intrudes these rocks. The interaction of this granite with reactive host rocks is the source of skarns and is thought to be the source of most of the base metal mineralization in the Zeehan area.

The Proterozoic Oonah Formation rocks are mainly quartzite and shale but there are also some carbonate rich beds. All of these rocks have been regionally metamorphosed with some adjacent to the granite being affected by contact metamorphism. There are some Cambrian sedimentary and ultramafic rocks in the southeast of the licence, which have also been affected by the granite. These host the Avebury deposit.

North of the Heemskirk Granite the Proterozoic rocks have a northwest trend, paralleling the Heemskirk Anticlinorium. To the west, where visible, a sequence of Palaeozoic rocks form the north trending Duck Creek – Healy Creek synclinal Zone but most of this portion of the tenement is obscured by Tertiary basalts and alluvial deposits. Jurassic dolerites of the Eureka Cone Sheet also cover a portion of the Proterozoic rocks along the northeast edge of the tenement.

## 1.2. LICENCE

Tenement number: 46/2003

Tenement name: Heemskirk

Tenement location: Located from approx 4km northwest of Zeehan, with main road access from the Heemskirk Road which passes generally through the central axis of the licence (Figure 1). The licence covers 196km<sup>2</sup> from the Trial Harbour Rd in the south, north-westerly for 30km to near the Reece Dam on the Pieman River. Most of the EL area is Crown Land with approx 8% being private agricultural land.

The crown land is covered by areas of nothofagus and eucalyptus rainforest, dry eucalyptus forest, scrub, heathland and button grass plain. Access is provided by the Heemskirk Road from Zeehan, the Trial Harbour Road, the Granville Harbour Road, the Corinna Road to Waratah in the north, and old bush tracks. Areas of the licence are only accessible by foot.

Reporting period: 3 January 2008 to 2 January 2009.

Tenement holder: Rubicon Min Tech Ventures Pty Ltd., a wholly owned subsidiary of Stellar Resources Ltd.

### 1.3. LOCATION OF LICENCE



• Figure 1. EL46/2003, Location Map with Main Prospects

## 1.4. LAND TENURE

### SCHEDULE

LAND DISTRICT: MONTAGU  
VICINITY: HEEMSKIRK RIVER (13.5km NW of ZEEHAN)  
MUNICIPALITY: WEST COAST  
TENEMENT: EXPLORATION LICENCE 46/2003 193km<sup>2</sup>  
HOLDER: RUBICON MIN TECH VENTURES PTY. LTD.

Commencing at a northwest corner at grid coordinates 335 000 metres E 5 380 000 metres N thence grid east to 344 000 metres E grid south to 5 375 000 metres N again grid east to 345 000 metres E again grid south to 5 373 000 metres N again grid east to 347 000 metres E again grid south to 5 371 000 metres N again grid east to 349 000 metres E again grid south to 5 369 000 metres N again grid east to 352 000 metres E again grid south to 5 367 000 metres N again grid east to 354 000 metres E again grid south to 5 365 000 metres N again grid east to 357 000 metres E again grid south to 5 362 000 metres N grid west to 354 000 metres E aforesaid again grid south to 5 358 000 metres N again grid west to 352 000 metres E aforesaid grid north to 5 362 000 metres N aforesaid again grid west to 349 000 metres E aforesaid again grid north to 5 365 000 metres N aforesaid again grid west to 347 000 metres E aforesaid again grid north to 5 367 000 metres N aforesaid thence again grid west to a point 200 metres inland from the high water mark on the West Coast of Tasmania thence in a general north-westerly direction 200 metres inland from and parallel to that high water mark to 334 000 metres E again grid north to 5 378 000 metres N again grid east to 335 000 metres E aforesaid thence again grid north to the point of commencement.

Coordinate datum - AGD66, AMG Zone 55.

### EXCLUSIONS

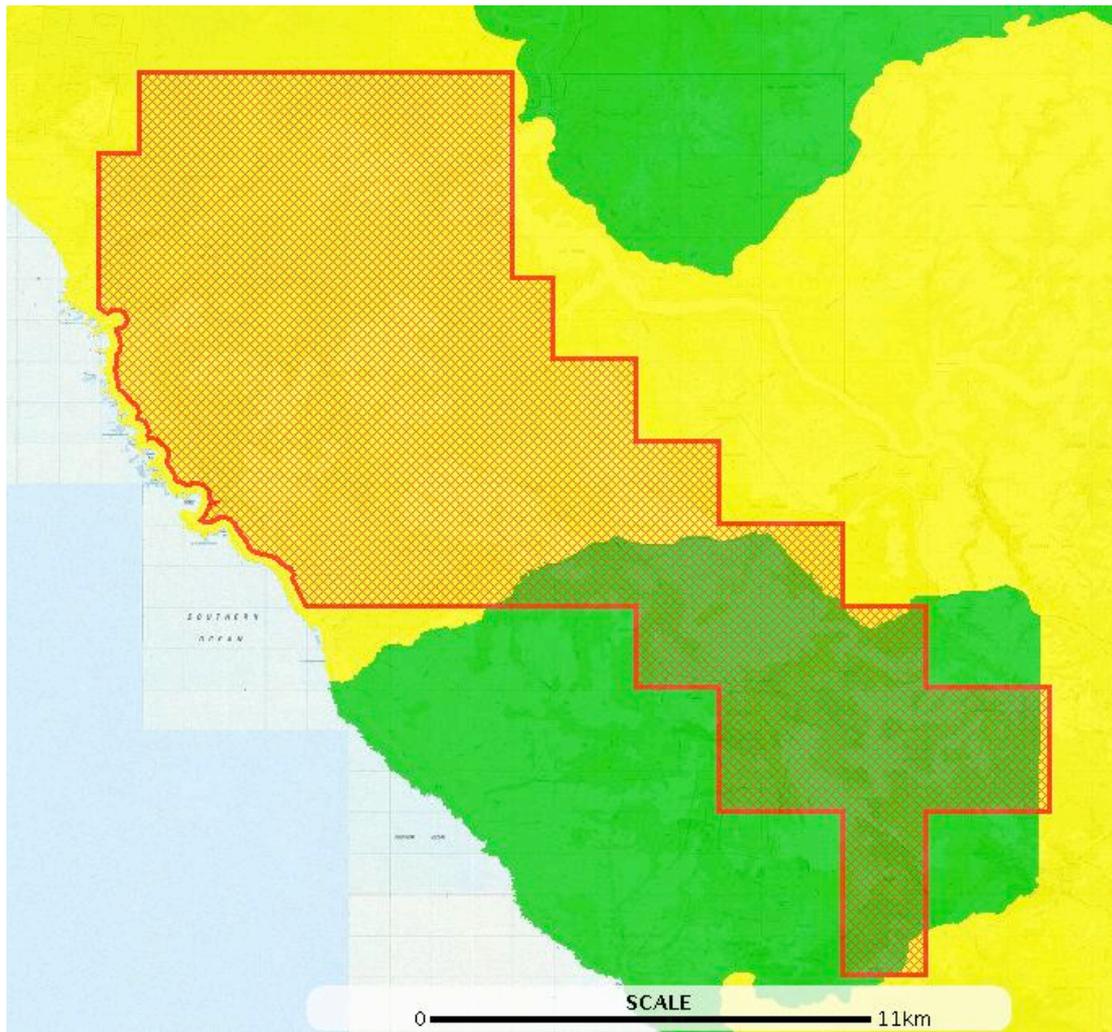
- (a) Any land owned or leased by the Commonwealth of Australia.
- (b) Mining Leases amounting to 79ha (more or less) which were applied for or in force prior to the date of application for this licence.
- (c) Areas of private land which either have been, or are in the process of being, purchased by the Crown under the Regional Forest Agreement - Private Forests Reserves Program and / or private land over which the landowners have agreed, or are in the process of agreeing, to place a covenant or management agreement for conservation purposes under the Regional Forest Agreement - Private Forests Reserves Program.

### LAND TENURE

The area comprises:

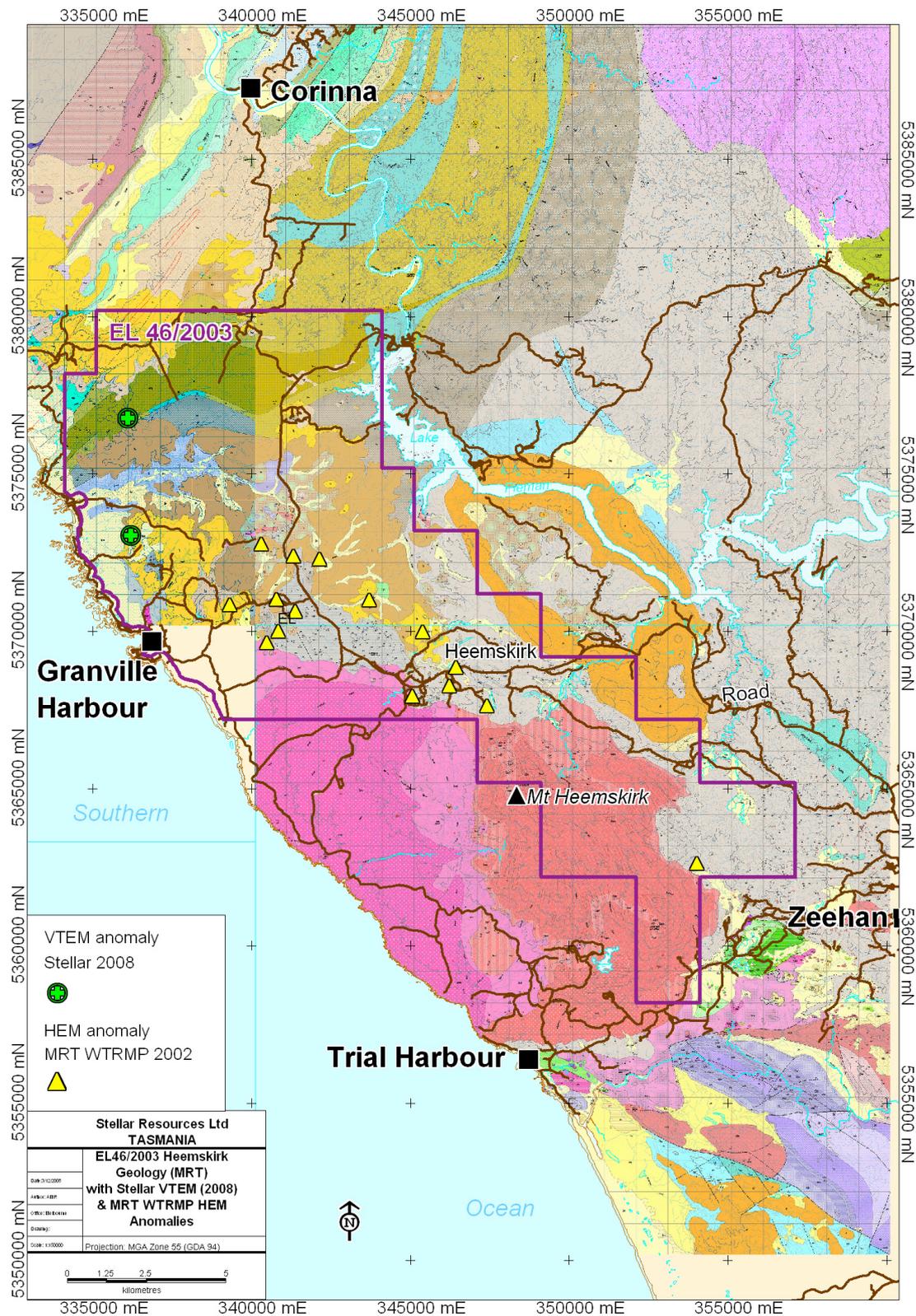
- Private Property
- Crown land
  - Multiple Use State Forest
  - Mount Heemskirk Regional Reserve
  - MDC Informal Reserves
  - HEC Land

The licence area contains areas, which are listed (including listed on an interim basis) on the Register of the National Estate kept under the *Australian Heritage Commission Act 1975*.

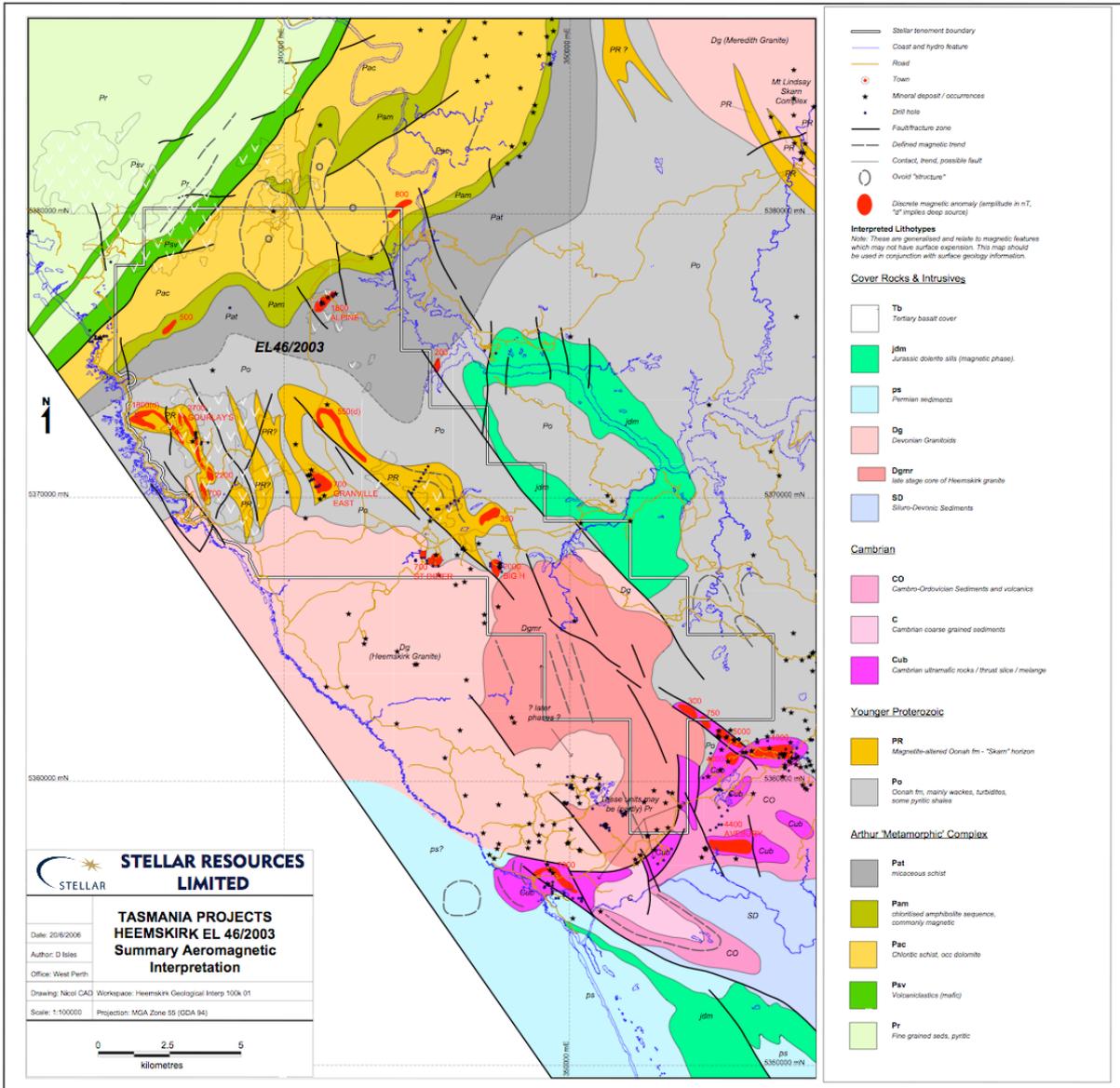


- Natural Resources (West Coast)**
- Environment Protection (West Coast)**

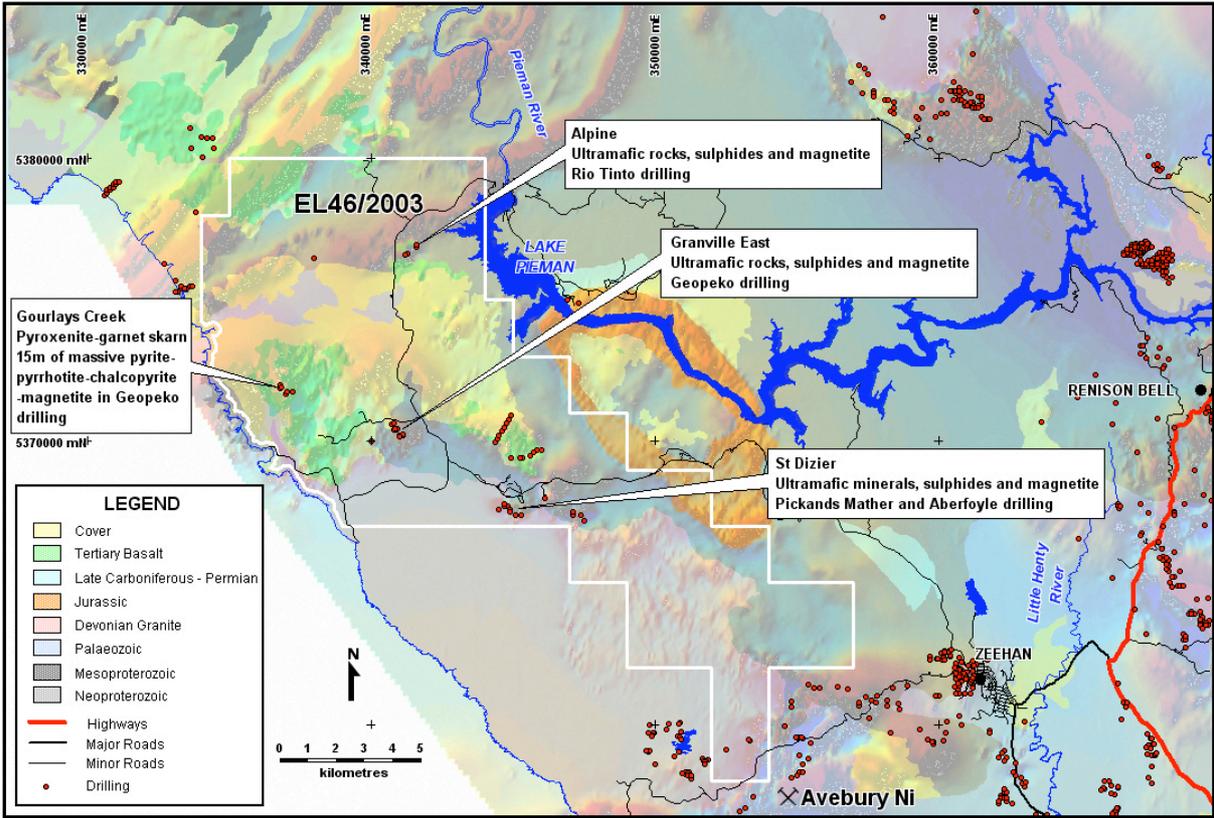
• Figure 2. EL46/2003, Land Tenure Map.



• Figure 3. EL46/2003, MRT Geology with HEM and VTEM Targets



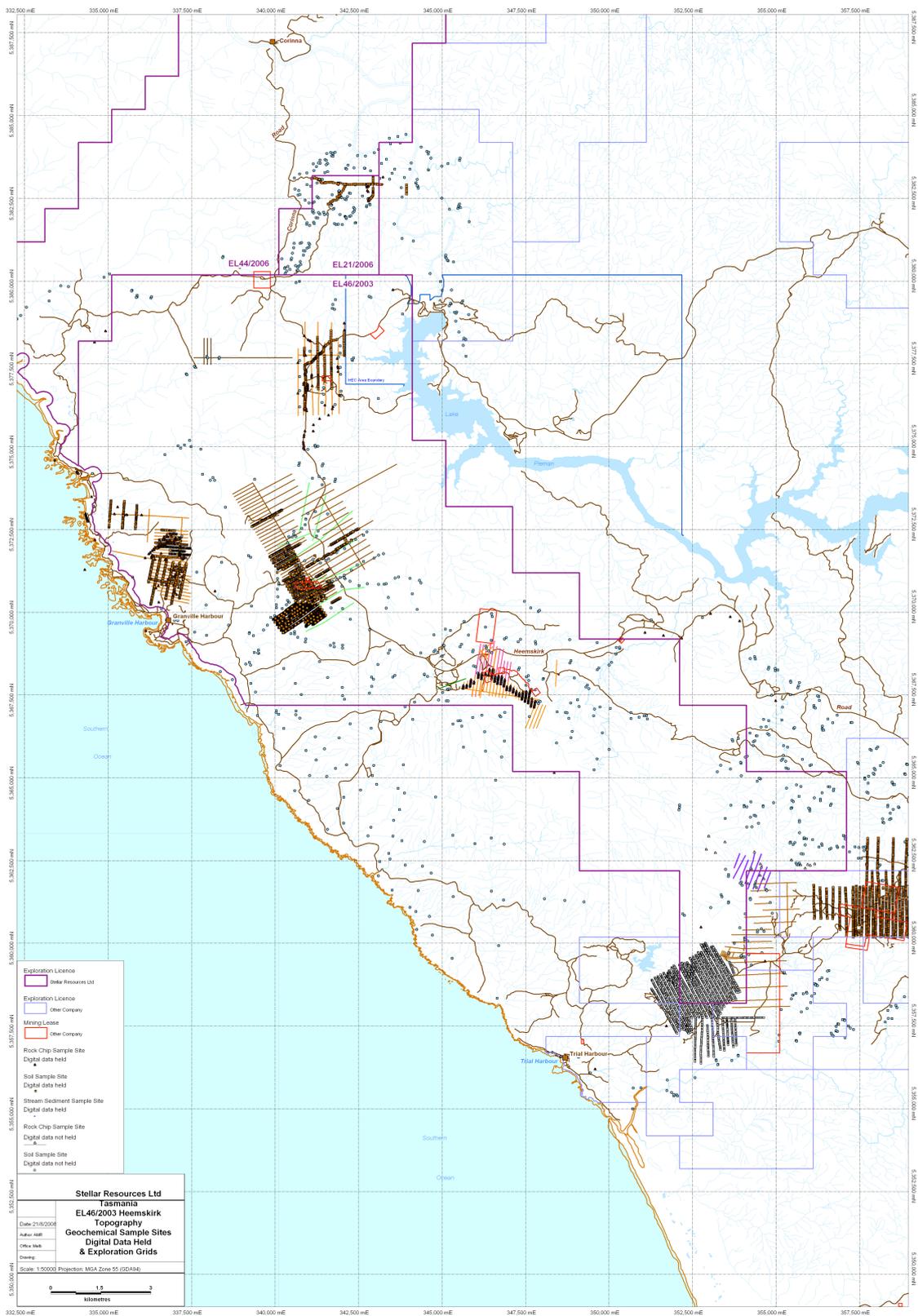
• Figure 4. EL 46/2003, Geological interpretation from magnetics



• Figure 5. EL46/2003, Geology (MRT) Draped Over Aeromagnetics

## **2. REVIEW OF PREVIOUS WORK**

MRT digital geology and geophysics datasets, DPIWE topographic data as well as data captured from open-file company reports continues to be reviewed with significant data summarised and tabulated in spreadsheet form. Information from reports of previous tenement holders, in particular those of CRAE, Aberfoyle, Cominco, Placer, Minops, Pickands Mather, ACI, "Consolidated Syndicate", ANZECO, Geophoto Resources, Goldfields/RGC, Geopeko, New Holland Mining, Outokumpu, Goldstream Mining and Titan Resources has been captured from MRT open-file reports. The results of this work are presented in Appendix 1.



• Figure 6. EL46/2003, Historical Geochemical Grids

### 3. EXPLORATION COMPLETED DURING THE REPORTING PERIOD

#### 3.1. REGIONAL EXPLORATION ACTIVITIES

##### 3.1.1. Data Acquisition, Mapping & Analysis

MRT digital geology and geophysics datasets, DPIWE topographic data as well as data captured from open-file company reports have been used to produce various maps at 50k, 25k and 10k scale. Exploration data from CRAE, Aberfoyle, Cominco, Placer, Minops, Pickands Mather, ACI, "Consolidated Syndicate", ANZECO, Geophoto Resources, Goldfields/RGC, Geopeko, New Holland Mining, Outokumpu, Goldstream Mining and Titan Resources has also been captured from MRT open-file reports and tabulated. The tabulation of this data is presented in Appendix 1. Numerous maps are appended in digital form.

##### 3.1.2. VTEM Survey

249 km of VTEM was flown at 100m line spacing over part of EL 46/2003, in the northwest. Refer to Figure 7 for area surveyed.

The principle target of the survey was Alpine style Cu/Au mineralisation within stratigraphically equivalent beds along strike to the west of Alpine. Magnetic anomalies within the Bowry Formation were thought to represent good targets for this style of mineralisation as Alpine is itself closely associated with a similar magnetic anomaly within the same unit.

A secondary target was carbonate-hosted mineralisation within the Duck Creek Graben. The Gourlays replacement system is interpreted to intersect the Gordon Limestone in the southern part of the survey area and this was thought to have the capability of creating a replacement style system in the Gordon Limestone at this location.

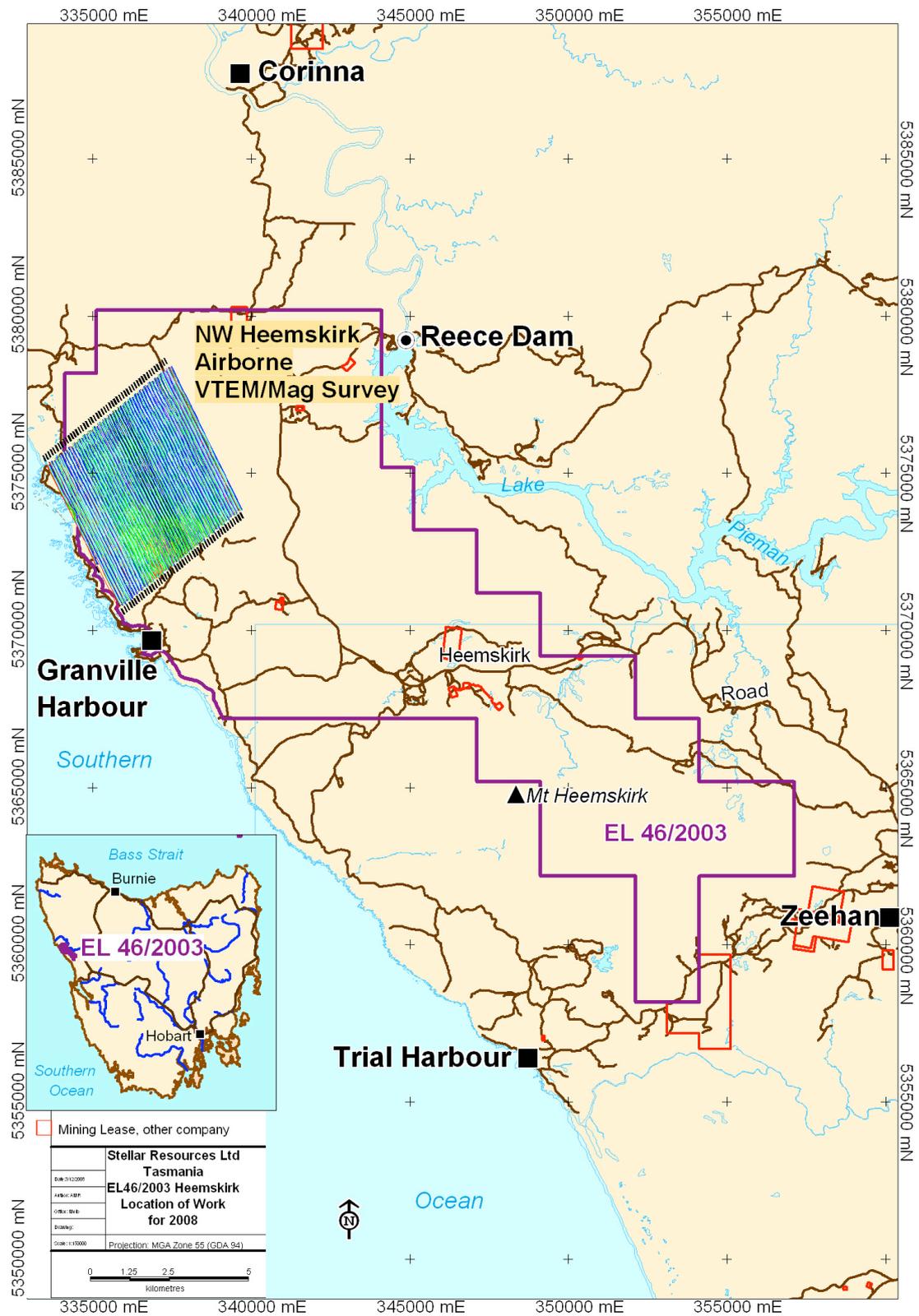
#### 3.2. ALPINE PROSPECT

##### 3.2.1. Drilling

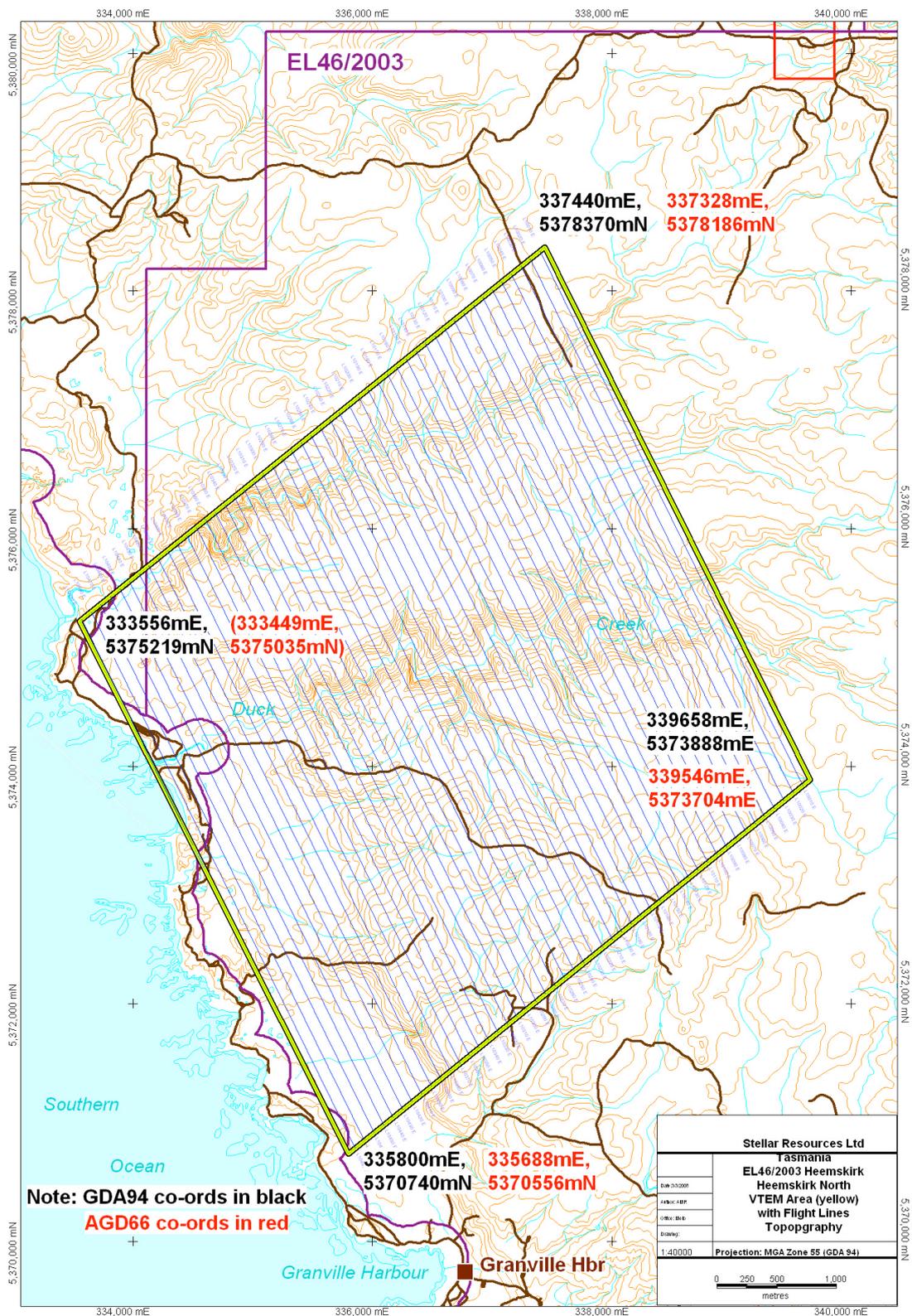
During 2007 Stellar drilled 9 diamond drill holes, totalling 1894 metres, at the Alpine Prospect. Hole specifications are set out below in Table 1. Drill core logs and assays for holes AP020 and AP021 are appended in digital form. No drilling was carried out during 2008.

• Table 1. Alpine Drilling Specifications

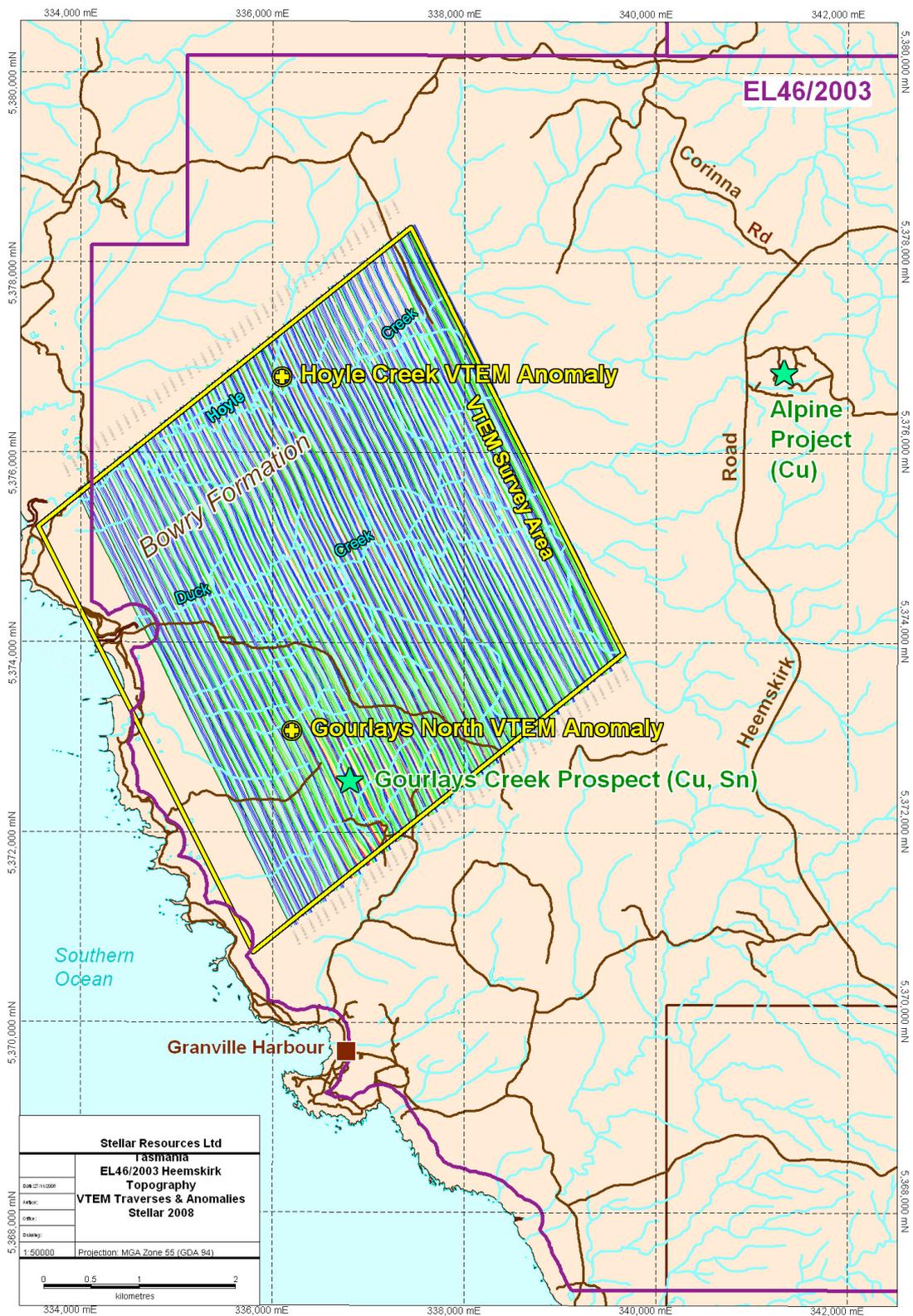
Hole	Collar			Depth	Azimuth	Dip	Survey	Date	Drilled	Logged
	GDA_E	GDA_N	RL							
AP013	341561.0	5376920.0	190	353		-90	gps	3/07	Boart	N. Turner
AP014	341140.0	5376626.0	173	284.1	337	-60	gps	3/07	Boart	N. Turner
AP015	341497.0	5376717.0	185	272.3	337	-60	gps	4/07	Boart	N Turner
AP016	341264.0	5376637.0	172	205	337	-60	gps	4/07	Boart	N. Turner
AP017	341418.0	5376607.0	185	272.4	337	-60	gps	5/07	Boart	N. Turner
AP018	341084.0	5376749.0	163	82		-90	gps	5/07	Boart	N. Turner
AP019	341570.0	5377127.0		62	360	-50	gps	10/07	LIDDS	Not Logged
AP020	341443.0	5377016.0		163	337	-75	gps	11/07	LIDDS	R. Hazeldene
AP021	341483.0	5377097.0		200	360	-60	gps	12/07	LIDDS	R. Hazeldene



• Figure 7. EL46/2003, 2008 Exploration Activities Locations



• Figure 8. EL46/2003, 2008 VTEM Survey Flight Line Plan



• Figure 9. EL46/2003, 2008 VTEM Survey Line Traces

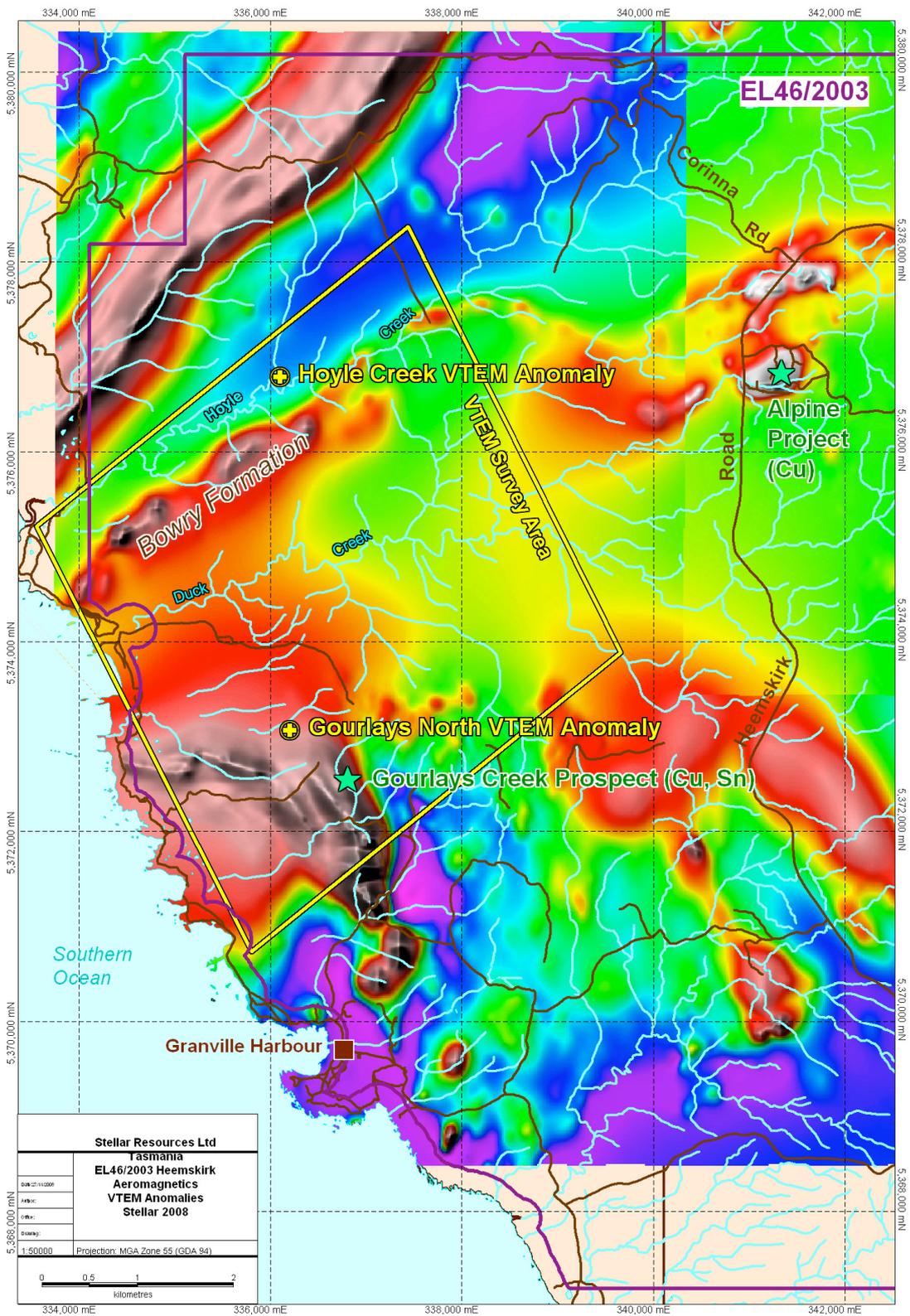
## **4. DISCUSSION OF RESULTS**

### **4.1. REGIONAL EXPLORATION ACTIVITIES**

The results of historical exploration data research and re-interpretation together with interpretation of aeromagnetic survey data has been used to identify a total of 39 exploration targets in the EL. These are tabulated in Appendix 2.

One significant VTEM anomaly, the Hoyle Creek anomaly (at 336140mE, 5376810mN. GDA94) was detected in the area of the Bowry Formation. This represents a good target for Alpine style mineralisation, but it appears to be hosted in carbonates adjacent to, rather than in, iron rich formations as is the case at Alpine. Geochemistry and geological mapping is will be used to evaluate this target further.

Significant conductors were also detected near the interpreted contact between the Gordon Limestone and the Gourlays Creek sequence in the western central part of the EL (generally, 336200mE, 5373100mN. GDA94). This has been called the Gourlay's North anomaly.



• Figure 10. EL46/2003, 2008 VTEM Anomalies on Magnetics

## **5. CONCLUSIONS**

During 2008 Stellar has continued to interrogate the MRT's historic exploration database to identify and define exploration targets on EL 46/2003.

The results of the VTEM survey define two new targets with potential to host Alpine style Cu/Au mineralisation at Hoyle's Creek and replacement mineralisation at Gourlay's North. Both anomalies warrant ground survey and validation to be followed with reconnaissance drilling if justified by the groundwork.

### **5.1. RECOMMENDATIONS**

- Continue interrogating historic exploration database to define and refine exploration targets.
- The Hoyle Creek and Gourlays North VTEM targets be followed up via geochemistry, geology mapping and ground EM.
- If confirmed to be significant basement conductors the Hoyle Creek and Gourlays North VTEM targets be drilled.
- Construct 3D computer models of the Alpine Prospect and St Dizier Deposit prior to any further drilling.
- Grid drill St Dizier deposit and extensions.

## 6. ENVIRONMENT

Drilling was undertaken at the Alpine, Gourlay's Creek and Devises prospects and at the St Dizier Deposit during 2007.

At Alpine the AP018 site, the AP018 access track and the AP018 track intersection with the southern access track have been rehabilitated. The southern track is still accessible though the creek crossing has been rehabilitated to reinstate creek flow.

At the Gourlay's Creek Prospect all collar pipes have been cut off below surface, sealed and buried.

At the St Dizier Deposit the holes have been plugged and sumps filled but as significant tin mineralisation was intersected the prospect remains live and consequently the drill access tracks and pads have not been rehabilitated.



• Figure 11. EL46/2003, Alpine Prospect, AP018 drill track rehabilitation.

## 7. EXPENDITURE

Job No	Job Details	Department	
Tran. Date		Doc Ref - Description	Amount
<b>Job Code: 6501</b>	<b>EL 46/2003 Heemskirk</b>	D1	
	1051	Administration Management	AU\$2,812.50
	1052	Professional	AU\$4,811.00
	1053	Technical	AU\$13,506.65
<b>Phase Total</b>	<b>105</b>	<b>STAFF COSTS</b>	<b>AU\$21,130.15</b>
	1061	Professional Technical	AU\$6,021.00
<b>Phase Total</b>	<b>106</b>	<b>CONTRACT PERSONNEL</b>	<b>AU\$6,021.00</b>
	1072	Geoscientist	AU\$44,481.09
<b>Phase Total</b>	<b>107</b>	<b>CONSULTANT PERSONNEL</b>	<b>AU\$44,481.09</b>
	1151	Site Preparation	-AU\$4,803.50
	1154	Diamond	AU\$27,209.09
<b>Phase Total</b>	<b>115</b>	<b>DRILLING</b>	<b>AU\$22,405.59</b>
	1161	Analytical/Sample analysis	AU\$6,834.00
<b>Phase Total</b>	<b>116</b>	<b>ASSAYS</b>	<b>AU\$6,834.00</b>
	1201	Geophysical Airphoto Surveys	AU\$57,031.08
	1204	Other	AU\$6,523.79
<b>Phase Total</b>	<b>120</b>	<b>DATA ACQUISITION</b>	<b>AU\$63,554.87</b>
	1251	Vehicle Costs All	AU\$5,919.17
	1252	Office Costs	AU\$285.01
	1253	Field Operation Consumables	AU\$1,084.96
<b>Phase Total</b>	<b>125</b>	<b>SUPPORT COSTS</b>	<b>AU\$7,289.14</b>
	1304	Drafting and Presentation	AU\$2,817.00
<b>Phase Total</b>	<b>130</b>	<b>DATA PROCESSING</b>	<b>AU\$2,817.00</b>
	1503	Pegging Application Forms	AU\$174.55
	1504	Legal Costs	AU\$227.27
	1505	Rents/ Other Utilities	AU\$11,404.01
<b>Phase Total</b>	<b>150</b>	<b>TENEMENT COSTS</b>	<b>AU\$11,805.83</b>
	1551	Meals and Accommodation	AU\$7,785.82
	1552	Airfares	AU\$585.65
	1553	Vehicle Hire	AU\$164.70
	1554	General Expense	AU\$255.92
<b>Phase Total</b>	<b>155</b>	<b>TRAVEL</b>	<b>AU\$8,792.09</b>
	1654	General Expenses	AU\$.01
<b>Phase Total</b>	<b>165</b>	<b>OVERHEADS</b>	<b>AU\$.01</b>
<b>Job Total: 6501</b>	<b>Class RUB</b>		<b>AU\$195,130.77</b>

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## **Keywords**

Location: Heemskirk  
Mineralisation environment: Skarns, Greisens  
Minerals: Chalcopyrite, Gold, Cassiterite, Arsenopyrite, Magnetite  
Exploration methods: Historic Research, Aeromagnetics, Geochemistry, Drilling  
Mine/prospect name: Alpine, Gourlay's Creek, Granville East & Devises Prospects, St Dizier Deposit.  
Stratigraphic name: Oonah Formation, Crimson Creek Formation, Arthur Metamorphic Complex, Bowry Formation, Heemskirk Granite  
Lithologic name: sandstone, quartzite, phyllite, schist, granite, massive sulphides, quartz  
Geological Province: Dundas Trough, Arthur Lineament  
Geological age: Lower Neoproterozoic, Palaeozoic

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January 2009

EL46/2003 Heemskirk – Report on 2008 program

## **APPENDICES**

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**Appendix 1: Heemskirk Project Exploration Summary (A. Rigg)**

EL46/2003 Heemskirk - Alpine District								
Company	Year	Location	Activity	Results	Conclusions	Comments	Report	
Rio Tinto	1957	West Coast Tas	Aeromag survey	Coarse regional magnetics				
Esso Australia	1973	North West Tas	INPUT (EM?) & aeromag survey. E/w, 880m fls, 133m fh.	Coarse regional EM & magnetics. Arthur lineament defined			74-0987	
Esso Australia	1973	North West Tas	Heli-borne stream sed geochem & geol mapping follow-up			No recorded data	74-0987	
ANZ Expln	1975	Copper Reward (MRT name). South of Alpine 2.5km	Regional stream sed. Cu, Pb, Zn, W	Assays: Cu to 70ppm, Pb to 80ppm, Zn to 2900ppm		There is another Copper Reward prospect, near the Interview River, north of the Pieman River. Occurrence not referred to as Copper Reward in report. Geologist: L Newnham	75-1141	
ANZ Expln	1975	Duck Creek (not in MRT db). WSW of Alpine 4.5km	Regional stream sed. Cu, Pb, Zn, W	Assays: Cu to 30ppm, Pb to 100ppm, Zn to 520ppm		Geologist: L Newnham	75-1141	
MRT	1981	West Coast	Aeromag survey, e/w, 500m fls, 150m fh. Mag only.	Broad scale magnetics		Picture	UR1983-35	
CRAE	1982	West Coast	Computer analysis of regional stream sed data with Microgas.	Anomalous areas defined			82-1801	
CRAE	1985	Red prospect, 3km west of Alpine	Target selected from 1981 aeromag survey.				86-2538, 89-3015	
CRAE	1985	Red prospect.	Grnd mag	Target selection assisted. Anom defined			86-2538	
CRAE	1985	Red prospect.	Genie EM (grnd)	Target selection assisted			86-2538	
CRAE	1985	Red prospect.	Soil geochem grid.	Soil up to 100ppm Cu, 100ppm Pb, 400ppm Zn, semi-coincident with EM.			86-2538	
CRAE	1985	Red prospect.	Drilling, PD85RP1 (92m, Az 0, Dip 0)	Carbonaceous dolomite, shale, mudstone. Py from 3% to 20%. Assays up to Cu 110ppm, Pb 45ppm, Zn 370ppm.	Surficial enrichment over dolomite. No further work warranted.	Local co-ords in rpt appear incorrect. Do not comply with mag/geochem anom. DH site moved to 'gestimated' locality by AMR.	86-2538	
CRAE	1985	Alpine prospect	Geol mapping				86-2538, 89-3015	
CRAE	1985	Alpine prospect	Grnd mag	Target selection assisted. Anoms defined		Compilation map, p133	85-2335	
CRAE	1985	Alpine prospect	Genie EM (grnd)	Target selection assisted			85-2335	
CRAE	1985	Alpine prospect	Soil geochem grid	Soil anoms defined			85-2335	

CRAE	1985	Alpine prospect	Auger bedrock sampling along main road for: Cu, Pb, Zn, Ag, Au, As, Fe, Mn, Ni, Co, Sn, W, Ba.	Some weak and scattered anomals for Cu, Fe, Zn. Fe, Cu & Zn proximal to major mag features.			85-2335
CRAE	1985	Alpine prospect	DH AP1 (106.7m, Az 357, dip -65)	Geophysical (mag, EM)/geochem target tested. Marly metapelite banded with magnetite-py-carbonate-qtz ironstone, 12.75m @ ave 0.24% Cu. Au not assayed. Metased schist above ironstone, veins of py-carbonate 8.2m @ 0.04% Cu, 0.19% Zn.			86-2538
CRAE	1985	Alpine prospect	DH AP2 (85.8m, Az 0, dip 0)	Geophysical (mag, EM) target tested. Marly metapelite banded with magnetite-py-carbonate-qtz ironstone, 27.4m @ ave 0.53% Cu (est. true thickness of 18m). A few Au assays, mainly bld, max )0.03g/t. Above the ironstone (as seen in AP1), 26m averaged 500ppm Zn.			86-2538
Aberfoyle	1989	Newdegate Ck, Hoyle Ck (3km west of Alpine, near Red Prospect)	Stream sed sampling	Disappointing. Newdegate Ck to 105ppm Zn (300ppm just outside EL), Hoyle Ck all low/nil.	No further work warranted.	Thick veg restricted access.	89-3015
Outokumpu	1990	Alpine prospect	Grnd mag survey. CRAE grid re-cut, infilled and extended.	Target selection assisted			91-3269
Outokumpu	1991	Alpine prospect	TEM survey (four loop GDP-16). CRAE grid re-cut, infilled and extended.	Target selection assisted			91-3269
Outokumpu	1991	Alpine prospect	Geol re-interp (Dr. Stolz)		See page 10-15		91-3269
Outokumpu	1991	Alpine prospect	Re-logging, mag susc measurement, selective sampling and assaying of CRAE DH AP1 & AP2.	Target selection assisted			91-3269
Outokumpu	1991	Alpine prospect	Selective sampling and assaying of CRAE DH AP1 & AP2. Ironstone intersection assayed for 25 elements.	Fe: 30-60% related to qtz gangue; Mn: 710-6600ppm; Ti: 30-340ppm; Ca & Mg: up to 5.5%; Co: 85-650ppm; As: 50-230ppm in py-carb veins, low in ironstone; Ag: up to 1g/t in ironstone, up to 3g/t in py-carb; Cu: up to 1.5% in py rich ironstone; Au: low in ironstone, 80-108ppb in py-carb; Pb: low in ironstone, up to 400ppm in py-carb; Zn: 100-250ppm in ironstone, 300-16500ppm in py-carb. Zr, Y, La, Na, K, Ni, Cr, Bi, Sn, W, Mo all low.	"The banded felsic/mafic qtz-alb-chl-(carb) schists of AP2 appear broadly similar to rocks which enclose banded siliceous ironstones of the Doctor's Ck - Owen Meredith area to the north...."		91-3269
Fodina	1992-94	Alpine prospect and north extn of Bowry formation.	Interest in the Bowry formation for IOCG min.			Management transferred from Outokumpu to Fodina (subsidiary of MPI Ltd) in 1992.	94-3566

Fodina	1992-3	Alpine prospect and north extn of Bowry formation.	Stream sed sampling for Ag, As, Au, Bi, Cu, Pb, Sb, Sn, W, Zn	Around Alpine: Cu to 44ppm, As to 17ppm, Au to 1.72ppb; North of Alpine to Lefroy Ridge: Cu to 49ppm, As to 4ppm, Au to 2.8ppb.	Anomalies reflected elevated backgrounds for the rock types, and not actual mineralisation.	No work done on Alpine. Relinquished.	94-3566
AGSO	1996	Arthur-Pieman district	1996 (AGSO P652) Aeromag, rad, dtm survey, plane, e/w, 200m & 100m fls, 96m fh				
Goldstream/Titan	1996	Bowry formation to the north, & including Alpine prospect in the south	Detailed helimag survey, mag only (1996 Corinna), e/w, fls 50m, fh 40m.				97-4074
Goldstream/Titan	1996	Lucy Formation, Lefroy Ridge East to the north	Stream sed sampling for Ag, As			Geologist: N. Turner	97-4074
Goldstream/Titan	1996-97	Lucy Formation, Lefroy Ridge East to the north	Stream sed sampling, assays for: Ag, As, Au, Bi, Cu, Mo, Pb, Sb, Sn, W, Zn.			Geologist: N. Turner	97-4108
Goldstream/Titan	1997	Lucy Formation to the north, incl Lefroy Ridge East.	Geological mapping.			Geologist: N. Turner	97-4108
Goldstream/Titan	1997	Lucy Formation to the north, incl Lefroy Ridge East (just within SRZ Lefroy Ridge East EL applic area). None in Alpine prospect area.	Drilling in Lefroy Ridge East mag anomaly (magnetite rich Lucy Formation), LREDDH1 (203m, Az, 102, dip -50), LREDDH2, (203m, Az 228, dip 50). Downhole Crone EM for LREDDH2. Assays: Ag, As, Au, Bi, Cu, Mo, Pb, Sb, Sn, W, Zn.	Both holes into chlorite schist, massive metabasalt with dissem magnetite. LREDDH1: best assay 0.129ppb? Au, 2679ppm Cu @ 153-154m & 0.155ppb? Au, 238ppm Cu @ 77-78m; LREDDH2: best assay 0.167ppb? Au, 77ppm Cu @ 180-181m.		Geologist: N. Turner	97-4108
Goldstream/Titan	1999	Lucy Formation, Lefroy Ridge East to the north	Extended stream sed sampling, assays for: Ag, As, Au, Bi, Cu, Mo, Pb, Sb, Sn, W, Zn.	Subtle anomalism for: Ag, Cu, Sb, Pb, Zn.	Au derived locally from a source within the aeromag anom (Lucy Fm).	Geologist: N. Turner	99-4261
Goldstream/Titan	1999	Lucy Formation, Lefroy Ridge East to the north	Rock chip sampling, assays for: Ag, As, Au, Bi, Cu, Mo, Pb, Sb, Sn, W, Zn.	Nothing of interest		Geologist: N. Turner	99-4261
Goldstream/Titan	1999	Lucy Formation, Lefroy Ridge East to the north	Soil sampling, three lines (4km) Over most intense mag anom. Assays for: Ag, As, Au, Bi, Cu, Mo, Pb, Sb, Sn, W, Zn.	Not really anomalous, only mildly for: highest Au 80ppb, Cu 140ppm.		Geologist: N. Turner	99-4261
Goldstream/Titan	2000	Alpine prospect, adjacent to main road	Rock chip sampling	Strike of anom Cu/Au defined, continues to the west of the Zeehan Hwy. West side best Cu 6420ppm, Au 27ppb.		Geologist: Lindsay Newnham	01-4522.
MRT	2001	West Coast regional	WTRMP Area C aeromag, rad, dtm survey, Heli, e/w, 200m fls, 76m fh.				
Goldstream/Titan	2002	Alpine prospect specific	2002 Corinna, EM, aeromag, dtm survey, Heli, sse (158), 100m fls, 78m fh.(Hummingbird EM)	EM anomns defined	Boyd questioned the positioning of the CRAE drill holes. Felt that it was unlikely that there would be further mineralisation to west or east of	Licence relinquished "no economic mineralisation discovered."	E43_94_2002_Final

					the CRAE holes.		
Stellar Resources	2006	Alpine	Diamond drilling: AP3, AP4 (152.8m vert), AP5	AP3 intersected sulphide mineralisation similar to AP4 but of lower tenor. AP4 intercepted 95m @ 0.46% Cu mineralisation from 57.7m to end of hole, including 22.25m @ 1.23% Cu from 65 metres. The hole finished in strong mineralisation (with the last sample of 1.2m assaying 0.39% Cu). AP5 was stopped short of target due to drilling problems.	The consulting geologist reported some 90 plus metres of continuously mineralised drill core – in both massive and disseminated sulphides, which is encouraging for the potential for a large mineralised system.		

<b>EL46/2003 Heemskirk - Gourlay's Creek District</b>							
<b>Company</b>	<b>Year</b>	<b>Location</b>	<b>Activity</b>	<b>Results</b>	<b>Conclusions</b>	<b>Comments</b>	<b>Report</b>
Rio Tinto	1957	West Coast Tas	Aeromag survey	Coarse regional magnetics			
Pickands Mather	1965	West Coast Tas	Regional reconnaissance stream sed. Cu, Pb, Zn, Ni, As, Sn	Base metals in district		General info	66-0439
ACM Ltd/ Renison	1972	West Coast Tas	Recon geol mapping, rock & stream sed sampling, to investigate Devonian granites environs				72-0876
Esso Australia	1973	North West Tas	INPUT (EM?) & aeromag survey. E/w, 880m fls, 133m fh.	Coarse regional EM & magnetics. Arthur lineament defined			74-0987
Esso Australia	1973	North West Tas	Helicopter stream sed geochem & geol mapping follow-up			No recorded data	74-0987
ANZ Expln	1975	Gourlay's Ck/Vincent's Cu area.	Aeromag interp, from 1957 Rio Tinto survey. Gourlay's Ck anom targeted.			Geologist: J D Lockhart	75-1141
ANZ Expln	1975	Gourlay's Ck/Vincent's Cu area.	Regional stream sed. Cu, Pb, Zn, W	Assays: Cu to 40ppm, Pb to 110ppm, Zn to 1140ppm		Geologist: J D Lockhart	75-1141
ANZ Expln	1975	Gourlay's Ck/Vincent's Cu area.	Grnd mag grid over Gourlay's Ck anom.			Geologist: J D Lockhart	75-1141
ANZ Expln	1975	Gourlay's Ck/Vincent's Cu area.	Geol mapping over Gourlay's Ck/Vincent's Cu area.			Geologist: J D Lockhart	75-1141
CRAE	1980	Granville West (Gourlay's Ck)	Selection of GE mag anom from 1957 Rio Tinto Aeromag survey, by Porter. Geol mapping, geochem.	Sn 15 to 40ppm assayed from rock chips.			80-1469
CRAE	1980	Granville West (Gourlay's Ck)	Grid lines for geol mapping, grnd mag (through 'window' in tertiary basalt) & geochem (hand auger), assayed for Pb, Zn, Cu, Ag, Ta, W, Sn, Co, Ni, Cr, Bi, Mn	Granville West: majority of Sn assays <4ppm (over magnetite rocks), some to 140ppm in py/qtzite. Cu to 290ppm assoc with Sn, Pb, Ag, Au < background. Tourmalinised granite and tourmaline bearing qtzite breccia observed.	Basalt eroded through to Oonah fm.		80-1469
MRT	1981	West Coast	Aeromag survey, e/w, 500m fls, 150m fh. Mag only.	Broad scale magnetics		Picture	

CRAE/Geopeko	1981	Pieman River to Granville Harbour area incl Granville East, Gourlay's Ck, St Dizier, Big Rocky	Airborne magnetometer survey, Geoex, G803, e/w, 250m fls, 135m fh.		Folded units interpreted	For Sn min with pyrrr/magnetite. See p127	83-1962
CRAE/Geopeko	1982	West Tas regional	Review and computer analysis of all prev geochem data with Microgas.	Pos base metals halo in Granville Harbour area			82-1801
CRAE/Geopeko	1982	Gourlay's Ck	Grid extension, to encompass all mag character, & geol mapping	Intrep as two n/s striking, long, narrow, parallel bodies	Fold structure		83-1961
CRAE/Geopeko	1982	Vincent's Cu Prospect, 300m nth of GC; other outcrops from Vincents: 1/ approx 100m (a few chains) to the east, 2/ 120m (6 chains) ssw	Rock geochem, mapping	One malachite bearing sample: Cu 10.8%, 45.5ppm Ag;	Skarn, calcsilicate/magnetite rocks. Basalt eroded through to Oonah fm.	Discovered in 1908. Native Cu in creek bed. Abund magnetite, py, oxide mins. 1908 orebody assay Cu, trace, Zn 1.6%, Cu 1.9%, Ag 6.6 dwt/t, Au nil. Waterhouse (1915) (GSREP6)	83-1961
CRAE	1982	West Coast	Computer analysis of regional stream sed data with Microgas.	Anomalous areas defined			82-1801
CRAE/Geopeko	1983	Gourlay's Ck	Grid extension to south, Jacro power auger geochem over central window to C-horizon. Soil & rock chip assays: Pb, Zn, Cu, Ag, Ta, W, Sn, Co, Ni, Cr, Bi, Mn	C-horizon assays usu greater than prev B-horizon assays. Cu range 5ppm to 380ppm, Pb range 5ppm to 820ppm, Zn range 10ppm to 310ppm.			84-2097
CRAE/Geopeko	1983	Gourlay's Ck	Grnd mag on grid extn.		Mag anom explained by vein magnetite, has weak Cu, Pb, Zn, Sn, W, Au geochem; no mag anomaly over carbonate horizon; carbonate is unaltered, therefore no skarn forming processes in this locality; no signif Sn or W soil anom's.		84-2097
CRAE/Geopeko	1983	Gourlay's Ck	IP survey over central window				84-2097
CRAE/Geopeko	1983	Gourlay's Ck	Stream sed assays: Pb, Zn, Cu, Ag, Ta, W, Sn, Co, Ni, Cr, Bi, Mn				84-2097
CRAE/Geopeko	1983	Gourlay's Ck west	Summary geol, geophysics, geochem	No signif Sn or W soil anom's. Magnetite has weak Cu, Pb, Zn, Sn, W, Au geochem	Mag anom explained by vein magnetite, has weak Cu, Pb, Zn, Sn, W, Au geochem; no mag anomaly over carbonate horizon; carbonate is unaltered, therefore no skarn forming processes in this locality.	Sparse outcrop over grid, geol from auger cuttings.	84-2097

CRAE/Geopeko	1983	Gourlay's Ck central window, incl Vincent's Cu	Summary geol, geophysics, geochem	Magnetite assays, average: Cu 144ppm, Pb 21ppm, Zn 96ppm, Fe 47%, Au 15ppb, Sn 28ppm. Oonah fm: pyrite min: up to 5% in silic qtzites; 2m thick bedded lode in one locality with weak geochem anomalism; vein style min carries higher Sn and base metals, pyritised metaquartzite up to: 400ppm Cu, 300ppm As, 983ppm Sn.	Encouraging results. IP points to abundant sulphide potential. Basalt eroded through to Oonah fm. Lithologies incl variations of: qtzites, cherts, hornfels, siltstones, carbonates, calcsilicates, schists. Magnetic sig due to banded magnetite lodes 1 - 2m thick, which show as two parallel mag zones, stratabound.		84-2097
CRAE/Geopeko	1983	Gourlay's Ck southern window	Summary geol, geophysics, geochem	Only geol mapping of streams, drainage sampling, and surveying of all grid lines for tmi completed.			84-2097
CRAE/Geopeko	1984	Gourlay's Ck central window	Jacro auger soil sampling, UTEM survey, drilling GC1 (196m), GC2 (167m), GC3 (376m); extn of line 11000mN west to coast.	Geochem: discrete zone of high Sn, Cu, Zn. DDH GC-1 hit skarn with pyroxene magnetite. Max assay 1m @ 0.3% Sn with good Cu, Fe correlation, 4m @ 0.24% Cu, 2m @ 0.42% Cu, 3m @ 0.28% Cu; GC-2 hit massive magnetite and magnetite/py/barite, no Sn response, 3m @ 0.77% incl 1m @ 2.06% Cu; GC-3 (down-dip of GC-1) hit pyrrhotite (ex py), Sn @ 830ppm (at approx 161m), 4m @ 0.35% Cu, 4m to EOH @ 0.42% Cu.	calc-silicates. Has the appearance of a halo around a deeper well min body. Potential for skarn type min.		85-2339
CRAE/Geopeko	1984	Gourlay's Ck southern window	Jacro auger soil sampling contin, geol re-mapping on updated grid, IP survey on prev unsurveyed lines, extn of line 10600mN west to coast.				85-2339
Uni of Tasmania	1985	Gourlay's Ck	Thesis on the Geology of the Granville Harbour Area and Mineralisation in the Gourlay's Creek Prospect. R.G. Norris	Central window, GC-1: most Sn in upper skarn horizon, Cu concentrated in the lower mineralised horizon.			Norris 1985
New Holland Mining	1988	Heemskirk granite area	Geophysical/structural interp of MRT 1981 magnetics (& MRT gravity) by Leaman		Northern part of Heemskirk granite more conducive to skarn type min, esp around Gourlay's Ck.		88-2878
New Holland Mining	1989	Northern Heemskirk granite area	Infill gravity survey, Scintrex, 133 stns. Combined with MRT gravity data. Interp by Leaman.	Two n/s marginal granite spines and a broad shelf south of Duck Creek (i.e. Gourlay's/Granville East area).			90-3085
New Holland Mining	1990	Northern Heemskirk granite area	Relinquishment of main body of Heemskirk granite south of Granville Harbour		Northern part of Heemskirk granite more conducive to skarn type min, esp around Gourlay's Ck. Southern part considered unlikely to host significant min.	Relinquished remainder of EL in July 1990 due to "tenement access/exploration restrictions". Considered the area	90-3085

						still prospective.	
MRT	2001	West Coast regional	WTRMP Area C aeromag, rad, dtm survey, Heli, e/w, 200m fls, 76m fh.				
MRT	2002	West Coast regional	WTRMP EM, 2002 Mt Read Volcanics, EM, aeromag, dtm survey, Heli, e/w, 200m fls, 79m fh.				

<b>EL46/2003 Heemskirk - Granville East District</b>							
<b>Company</b>	<b>Year</b>	<b>Location</b>	<b>Activity</b>	<b>Results</b>	<b>Conclusions</b>	<b>Comments</b>	<b>Report</b>
Rio Tinto	1957	West Coast Tas	Aeromag survey	Coarse regional magnetics			
Pickands Mather	1965	West Coast Tas	Regional reconnaissance stream sed. Cu, Pb, Zn, Ni, As, Sn	Base metals in district		General info	66-0439
Esso Australia	1973	North West Tas	INPUT (EM?) & aeromag survey. e/w, 880m fls, 133m fh.	Coarse regional EM & magnetics. Arthur lineament defined			74-0987
Esso Australia	1973	North West Tas	Heli-borne stream sed geochem & geol mapping follow-up			No recorded data	74-0987
Aberfoyle	1975	Donnelly's included. EL22/73	Airborne EM and Mag survey.	Anomalous areas defined			81-1597
ANZ Expln	1975	Donnelly's Nth area (not in MRT db). East of Granville East 2.3km.	Regional stream sed. Cu, Pb, Zn, W	Assays: Cu to 15ppm, Pb to 90ppm, Zn to 300ppm, W to 580ppm		Geologist: L Newnham	75-1141
CRAE	1980	Granville East	Selection of GE mag anom from 1957 Rio Tinto Aeromag survey, by Porter. Geol mapping, geochem.	Sn 15 to 40ppm assayed from rock chips.			
CRAE	1980	Granville East	Grid lines for geol mapping, grnd mag & geochem (bedrock), assayed for Pb, Zn, Cu, Ag, Ta, W, Sn, Co, Ni, Cr, Bi, Mn	Granville East: Sn to 40ppm in sth	More work req		80-1469
Aberfoyle	1980	Big Rocky Ck	Ground mag traverse	Mag anom located, coincident with Sn ssed anom			80-1503
MRT	1981	West Coast	Aeromag survey, e/w, 500m fls, 150m fh. Mag only.	Broad scale magnetics		Picture	
CRAE/Geopeko	1981	Pieman River to Granville Harbour area incl Granville East, Gourlay's Ck, St Dizier, Big Rocky	Airborne magnetometer survey, Geox, G803, e/w, 250m fls, 135m fh.		Folded units interpreted	For Sn min with pyrr/magnetite. See p127	83-1962
CRAE/Geopeko	1981	Granville East	Recon ground mag				83-1962
CRAE/Geopeko	1981	Granville East	Detailed ground mag		Mag anom's, two types: pyrr/mag skarn, & pyrr black shales		83-1962

CRAE/Geopeko	1981	Granville East	Costeaining to expose Sn/magnetite gossan			Used to site DDH1	83-1961
Aberfoyle	1981	Donnelly's gossan	Rock chip sampling	Sn to 40ppm, W to 845ppm, with coincident Cu to 3250ppm, Pb to 1750ppm, Zn to 2.6%, located nr mag anom's			81-1623
Aberfoyle	1981	Tasman River Zone	Grnd mag survey, geol mapping.	Grnd mag showed a broad mag anom open to the nth, noisy magnetic basalt masks response from underlying rocks. No outcrop of skarn or shale.			84-2087
CRAE/Geopeko	1982	West Tas regional	Review and computer analysis of all prev geochem data with Microgas.	Pos base metals halo in Granville Harbour area			82-1801
CRAE/Geopeko	1982	Granville East	Self Potential	Mostly sharp near-surface features	East dipping. Due to sulphides.		83-1961
CRAE/Geopeko	1982	Granville East	Infill ground mag				83-1962
CRAE/Geopeko	1982	Granville East	SIROTEM survey				83-1962
CRAE/Geopeko	1982	Granville East	Drilling, GE1 (156m)	4m @ 0.11%Sn, incl 1m 0.36% Sn. 85m calcsilicate/carbonate rock.			83-1961
CRAE/Geopeko	1982	Granville East	Drilling, GE2 (220m), GE3 (219.5m), GE4 (233m), GE5 (194m).	Mainly pyrr bearing black shale intersected. DDH2, no Sn, but pos Zn halo in pyrr/carb; DDH3., no Sn, but 50m calc/silicate/carb, mag sig not explained; DDH4, no signif Sn; DDH5, no signif Sn, 80cm of mass pyrr at horizon.	Mag anom's, two types: pyrr/mag skarn, & pyrr black shales	DDH1-3 drilled to test mag anom's over favourable Sn, Cu, Zn, As; DDH4 drilled to test high Sn geochem; DDH5 drilled to intersect mag horizon at depth	83-1962
CRAE/Geopeko?	1982?	Big Toe mag anom, approx 1km to sw of main Granville East prospect.	Drilling, GE6 (107m), GE7 (127m), GE8 (219m).	Cannot locate any literature describing this work. Core is held at the MRT Mornington store.		The proposed sites of DDH6 & DDH7 are shown on p41 in rpt 83-1978. No other info is present. If the core exists it is held at the MRT Mornington store.	83-1978
CRAE/Geopeko	1982	Granville East	Soil sampling	Sn anom of > 20ppm, up to 2%, Cu to 1750ppm; Pb to 150ppm, Zn to 5900ppm, As to 2.7%,	Geochemically active horizons, due to folding & faulting.		83-1961
CRAE/Geopeko	1982	Granville East, 11000 (1.5km nnw), Big Rocky Ck (2km nne), Donnelly's, Big Toe, Silver Reward (loc'n uncertain, nth of 11000), Kingswood Ck.	Regional stream sed	Sn anom at SE end of Big Rocky Ck mag anom., weak Zn anom at same. Anoms near known skarn min.		Tertiary gravels may be contributing to high Sn values.	83-1978

CRAE/Geopeko	1982	Donnelly's & Tramway Ck anom adjacent to Big Rocky mag anom.	Regional stream sed	Donnelly's Ck: Zn to 65ppm; Tramway Ck: Zn to 17200ppm; As no correlation; other metals very weak.		Tertiary gravels may be contributing to high Sn values.	83-1978
CRAE/Geopeko	1982	Big Toe mag anom, approx 1km to sw of main Granville East prospect.	Regional stream sed	Sn on linear strike to 16400ppm		Tertiary gravels may be contributing to high Sn values.	83-1978
CRAE/Geopeko	1982	Kingswood Ck, nw of 11000.	Regional stream sed	Sn to 10200ppm.		Tertiary gravels may be contributing to high Sn values.	83-1978
CRAE/Geopeko	1982	Granville East	Infill soil sampling	Sn mainly low, but up to 250ppm, with high Cu; irreg high Cu, Zn (1.13% with coincident elev As, Cu, Pb)	Some v high Sn explained as secondary enrichment.		83-1978
CRAE/Geopeko	1982	Granville East	Costeaming along mineralised zone.	Mag/siderite/Sn skarn, two pods 15m strike length	Sn/magnetite rock passes through pyrr/ars/chalco Sn poor rock and into banded calc/silicate rock.		83-1978
CRAE/Geopeko	1982	Big Rocky Ck	Geol mapping.	Carbonate bearing black shales mapped	Carbonate bearing black shales correspond to the centre of mag anom.		83-1978
CRAE/Geopeko	1982	Big Rocky Ck	Recon soil sampling, assayed for Pb, Zn, Cu, Ag, Ta, W, Sn, Co, Ni, Cr, Bi, Mn	No coherent Sn anom's generated. Erratic high Cu, Zn, Fe, incl over basalt.			83-1978
CRAE/Geopeko	1982	11000	Geol mapping.	Calc silicate rock mapped, with Sn bearing ironstone and magnetite.	Carbonate bearing black shales correspond to the centre of mag anom.		83-1978
CRAE/Geopeko	1982	11000	Recon soil sampling, assayed for Pb, Zn, Cu, Ag, Ta, W, Sn, Co, Ni, Cr, Bi, Mn	Well defined Sn anom defined. Four anom geochem trends. Sn to 890ppm, Cu to 320ppm, Zn to 1700ppm, Pb to 250ppm, As to 380ppm.			83-1978
CRAE	1982	West Coast	Computer analysis of regional stream sed data with Microgas.	Anomalous areas defined			82-1801
Aberfoyle	1982	Donnelly's area	Grnd mag surveys over DIGHEM anomalies - 202D/E, 203A nr Donnelly's gossan, 205A	EM: graphitic black shales & magnetite rich zones.			82-1686
Aberfoyle	1982-83	Donnelly's area	Assessment of aeromagnetic anomalies 202D/E, 203A, 205A, 205X		202D magnetite & pyrrhotite in skarn; 202E tentatively explained as salt water in gravels; 205X 65m to top.	202D: 10500ppm Sn in costean, 330m to se.	84-2087
Aberfoyle	1982-83	Tasman River zone	Assessment of aeromagnetic anomaly (500 gamma)		Not adequately tested on 1982. Dissem magnetite in basalt. Anom on western edge of pos skarn. 600m strike.	150ppm Sn ssed anom.	84-2087
Aberfoyle	1983	Donnelly's	Soil geochem	Several anom's, Sn, W with coincident Cu, Pb, Zn, located nr mag anom's			83-1942

Aberfoyle	1983	Donnelly's	Geol mapping.	Outcropping calc-silicate/magnetite skarn (up to 1.35% Sn). At least two skarn horizons.			83-1942
Aberfoyle	1983	Donnelly's	Grid costeaining	Zn to 5.2%, Cu to 0.71%, Sn generally weak.			83-1942
CRAE	1983	Big Rocky Ck	Recon soil sampling over broad mag anom.	Sn to 70ppm, weakly coincident Cu, Zn anom in Oonah Fm phyllites, qtzites.		Tert basalt over lwr Oonah fm.	83-1978
CRAE	1983	Big Rocky Ck	Grnd mag (200m spaced lines)	Max 800nT above background	Mag body pos 200m deep.	Tert basalt over lwr Oonah fm.	83-1978
CRAE	1983	11000	Soil sampling over mag anom & ironstone outcrop. Assays: Sn, W, Cu, Pb, Zn, Ag, Fe, Bi, Mo, As	Ironstone anomalous in Sn, Zn, As. Sn to 890ppm (ironst to 362ppm); coincident Cu to 320ppm, Pb to 250ppm, broad Zn anom to 1700ppm; ironst Fe to 28.5% with As to 380ppm.	Four anom geochem trends.		83-1978
CRAE	1983	11000	Geol mapping.	Ironstone; centre: calc-silicate hornfels with magnetite & py, sim to Granville East.		Little outcrop.	83-1978
CRAE	1983	11000	Grnd mag.	Complex geophysics, incl mag spikes.	Sim sig to Granville East, mag, py min.	Little outcrop.	83-1978
Aberfoyle	1984	Donnelly's	Outcrop geol map				84-2087
Gippsland Oil & Minerals	1986	Donnelly's	Assessment of Aberfoyle DIGHEM anomalies		Donnelly's: adequately explored, target not viable.	GOM relinquished EL	86-2616
New Holland Mining	1988	Heemskirk granite area	Geophysical/structural interp of MRT 1981 magnetics (& MRT gravity) by Leaman		Northern part of Heemskirk granite more conducive to skarn type min, esp around Gourlay's Ck.		88-2878
New Holland Mining	1989	Northern Heemskirk granite area	Infill gravity survey, Scintrex, 133 stns. Combined with MRT gravity data. Interp by Leaman.	Two n/s marginal granite spines and a broad shelf south of Duck Creek (i.e. Gourlay's/Granville East area).			90-3085
New Holland Mining	1990	Northern Heemskirk granite area	Relinquishment of main body of Heemskirk granite south of Granville Harbour		Northern part of Heemskirk granite more conducive to skarn type min, esp around Gourlay's Ck. Southern part considered unlikely to host significant min.	Relinquished remainder of EL in July 1990 due to "tenement access/exploration restrictions". Considered the area still prospective.	90-3085
MRT	2001	West Coast regional	WTRMP Area C aeromag, rad, dtm survey, Heli, e/w, 200m fls, 76m fh.				
MRT	2002	West Coast regional	WTRMP EM, 2002 Mt Read Volcanics, EM, aeromag, dtm survey, Heli, e/w, 200m fls, 79m fh.				

EL46/2003 Heemskirk - St Dizier District							
Company	Year	Location	Activity	Results	Conclusions	Comments	Report
Heemskirk Tin Syndicate	1913-20	Tasman River area nth of Heemskirk Rd	Alluvial tin mining				97-4042
Tas, Dept of Mines	1915	McArthur's (Mt Arthur) Copper Mine, 700m (300m) ne of St Dizier	Inspection and assessment	Pre-Silurian blue slate, tourmalinised country further sth. 1914 orebody (5ft wide) assay: Au trace, Ag 9.6oz/t, Cu 26.8%, Sn nil. Dumps: chalco, 'blende', arsenopy, grab sample assay Cu 2.5%, Zn 13.5%	Surface enrichment concluded, not economic at depth (shaft 53ft)		GSREP6, Plan 1478
Tas, Dept of Mines	1915	Long's Iron Blow. SE of St Dizier 2.8km.	Inspection and assessment	Tourmaline/qtz/haematite. Sn to 0.29%.		50m x 25m x 7m high.	GSREP6
Pickands Mather	1967	Big H	Diamond drilling, DDH101 (160m), H102 (184m), H103 (76m), H104 (147m). Logs & assays.	DH101: 1.3m @0.45% Sn nr bottom of hole, highest assay 6400ppm; magnetite, sulphides- py, chalco, sphal, arseno, galena, etc.		Rpt: 67-0456 Ref to hole N8 (can't locate), 1.8m @ 8.67% Cu. Rpt 80-1504 has complete info.	67-0456 & 80-1504
MRT Minloc		Tasman River, 1.42km nth of St Dizier	Sn reference			MRT Mirloch db 2006	ER50, GSB50
MRT Minloc		St Dizier Alluvial, 380m nw of St Dizier	Sn reference			MRT Mirloch db 2006	ER50, GSB50
MRT Minloc		Un-named, 560m sse of St Dizier in granite	Sn reference			MRT Mirloch db 2006	Plan 1478
MRT Minloc		Laffer's Twelve Mile Workings, 550m nth of Big H	Sn reference			MRT Mirloch db 2006	nil
MRT Minloc		Central Twelve Mile Workings, 100m nnw of Big H	Sn reference			MRT Mirloch db 2006	Klominski
MRT Minloc		Western Twelve Mile Workings, 300m sw of Big H	Sn reference			MRT Mirloch db 2006	Klominski
MRT Minloc		Un-named, 700m ssw of Big H on granite margin.	Sn reference			MRT Mirloch db 2006	82-1827A, 84-2146C
MRT Minloc		Upper Twelve Mile Workings, 1360m ese of Big H	Sn reference			MRT Mirloch db 2006	Klominski, ER50, GSB50
MRT Minloc		Upper Heemskirk River, 4600m se of Big H in granite	Mo reference			MRT Mirloch db 2006	Klominski
Laffer family	1960-70's	Tasman River area nth of Heemskirk Rd	Alluvial tin mining				97-4042

Texins Development	1970	Heemskirk granite from Granville Harbour south to Trial Harbour	Airphoto geol structure interp by Geophoto Consultants.	Map			70-0692
Cominco	1973	Central Anomaly to Big H	Grnd mag grid (100m grid).	Magnetite-bearing skarn horizon delineated.	Depth to top interp as 130m.	Maj com: Sn; Min com: Zn, Wo, Cu, Bi	
Esso Australia	1973	North West Tas	INPUT (EM?) & aeromag survey. e/w, 880m fls, 133m fh.	Coarse regional EM & magnetics. Arthur lineament defined			74-0987
Esso Australia	1973	North West Tas	Heli-borne stream sed geochem & geol mapping follow-up			No recorded data located.	74-0987
Minops		St Dizier Mine	Grab sample assays	Sn to 1.32%, Cu to 0.10%, Zn trace, magnetite to 60%.			TR17-184-194
Aberfoyle	1973-74	St Dizier skarn horizon	Geol mapping, geochem, geophysics with diamond drilling (8 holes) and trenching on detailed St Dizier min grid.	Anomalous areas defined			81-1597
Aberfoyle	1974	St Dizier skarn horizon	Diamond drilling, 8 holes.				81-1597
Aberfoyle	1975	St Dizier to Big H included. EL22/73	Airborne EM and Mag survey.	Anomalous areas defined			75-1135 & 81-1597
Aberfoyle	1976-77	St Dizier to Big H, EL22/73	Geol mapping, detailed grnd mag (n/s 100m spacing)	Anomalous areas defined			81-1597
Gold Fields Expln	1978	Heemskirk granite from Granville Harbour south to Trial Harbour	Colour airphoto survey (25k) and geol interp.	Differentiation of older 'red' granites from younger intrusive mineralising 'white' granites was ineffective. General structures mapped.		Geologists: P Roberts, R Poltock.	84-2146
Gold Fields Expln	1978	Long's Iron Blow. SE of St Dizier 2.8km.	Inspection, assessment, assays	Tourmaline/qtz/haematite. Sn to 300ppm, As to 45ppm, W to 1700ppm, Pb to 20ppm, Zn to 30ppm, Cu to 20ppm. Nearby small blow had sim assays, incl Zn to 160ppm.	Not considered to have potential.	Geologist: P Stephenson	84-2146
Aberfoyle	1979	St Dizier area, Heemskirk granite.	Regional stream sed sampling extension, for Sn, W, Cu, Pb, Zn.				81-1597
Aberfoyle	1980	St Dizier, Central, Big H skarn horizon	Soil geochem grid n/s 100m spacing. Sn, Wo3, As, Cu, Pb, Zn.	Anomalous areas defined		Geologist: C H Young	81-1521
Aberfoyle	1980	St Dizier skarn horizon	Soil geochem grid n/s 100m spacing. Sn, Wo3, As, Cu, Pb, Zn.	St Dizier: As, 1 area/trend >100ppm, max 1300ppm; Cu, 1 area/trend >300ppm, max 2700ppm; Pb, 1 area/trend >100ppm, max 400ppm; Sn, 0 >500ppm; WO, 1 area >100ppm, max 200ppm; Zn, 1 area/trend >300ppm, max 4400ppm.		Geologist: C H Young	81-1521
Aberfoyle	1980	Central skarn horizon	Soil geochem grid n/s 100m spacing. Sn, Wo3, As, Cu, Pb, Zn.	Central: As, 2 areas >100ppm, max 550ppm, Cu, 3 areas >300ppm, max 600ppm; Pb, 2 areas >100ppm, max 700ppm; Sn, 1 >500ppm; WO, 1 larger area >100ppm, max 300ppm; Zn, 4 areas >300ppm, max 5600ppm.		Geologist: C H Young	81-1521

Aberfoyle	1980	Big H skarn horizon	Soil geochem grid n/s 100m spacing. Sn, Wo3, As, Cu, Pb, Zn.	Big H: As, 1 area >100ppm, max 280ppm, Cu, 6 areas >300ppm, max 800ppm; Pb, 6 areas >100ppm, max 240ppm; Sn, 4 areas >500ppm; WO, 1 area >100ppm, max 140ppm; Zn, 2 areas >300ppm, max 500ppm.		Geologist: C H Young	81-1521
Aberfoyle	1980	Twelve Mile Ck Anomaly	Trenching to evaluate source. SIROTEM survey of three lines. Bedrock RC drilling geochem. Grnd mag survey.	Trenching did not find conductor. SIROTEM defined a steeply dipping (<50m) conductor of at least 100m length. Bedrock geochem: low Sn, trace sulphides, silicified black shales; Grnd mag defined a lenticular anom assoc with DIGHEM anom.			84-2087
Aberfoyle	1980	Area incl Central Anomaly, St Dizier, Big H, Twelve Mile Ck, Tasman River Zone.	Orientation DIGHEM survey (250m fls)				81-1597
Gold Fields Expln/Apollo Minerals	1980 - 1983	St Dizier mine	Drilling program 1980-1983, holes H1 to SD22. Logs, assays, petrology, metallurgy. SD1 (49m or 66m), SD2 (38m or 45m), SD3 (17m), SD4 (29m), SD5 (32m), SD6 (206m), SD7 (125m), SD8 (97m).	Holes SD21 & 22 found that the skarn/carb min zone did not extend deeper or beyond central body, Sn, W <0.1%. Prev holes best assay info (most Zn <0.7%), H5: 5.8m @ 2.34% Zn; M9: 8.3m @ 1.92% Zn; SD15: 1m @ 0.28% Cu, 1.19% Zn; SD13: 2m @ 3.0% Zn; SD18A 5m @ 0.22% Cu, 4m @ 1.9% Zn.	St Dizier central orebody econ grade, west & east min is low grade. Resource: 0.8mT @ 0.7% Sn, 0.5% WO3, plus 100000t low grade ore. Project might suit 'shoe string' operation.	Geologist: P Roberts.	81-1602, 82-1835, 84-2154
MRT	1981	West Coast	Aeromag survey, e/w, 500m fls, 150m fh. Mag only.	Broad scale magnetics		Picture	
Aberfoyle	1981	Tasman River Zone	Grnd mag survey, geol mapping.	Grnd mag showed a broad mag anom open to the nth, noisy magnetic basalt masks response from underlying rocks. No outcrop of skarn or shale.			84-2087
Gold Fields Expln	1981 & 1982	Heemskirk granite from Granville Harbour south to Trial Harbour	Heemskirk granite mineralogy and rockchip assaying.	Nothing significant		Area south of St Dizier relinquished.	84-2146
CRAE	1982	West Coast	Computer analysis of regional stream sed data with Microgas.	Anomalous areas defined			82-1801
Aberfoyle	1982-83	Tasman River zone	Assessment of aeromagnetic anomaly (500 gamma)		Not adequately tested on 1982. Dissem magnetite in basalt. Anom on western edge of pos skarn. 600m strike.	150ppm Sn ssed anom.	84-2087
Aberfoyle	1982-83	St Dizier	Assessment of aeromagnetic anomaly (430 gamma)		Sn assoc with pyrr & magnetite in skarn.		84-2087
Aberfoyle	1982-83	Central	Assessment of aeromagnetic anomaly (500 gamma)		Magnetite & pyrr in skarn. Depth 70-100m.	DDH101: 4ft @4500ppm Sn.	84-2087

Aberfoyle	1982-83	Central, Second Skarn Horizon	Assessment of aeromagnetic anomaly (700 gamma)		No oxidised capping. Prob magnetite & pyrr in skarn. Depth 25m.		84-2087
Aberfoyle	1982-83	Big H	Assessment of aeromagnetic anomaly		Sn in magnetite oxidised capping. Shallow body.	360ppm Sn RAB drilling.	84-2087
Aberfoyle	1982-83	Twelve Mile Ck 220C	Assessment of aeromagnetic anomaly (4000 gamma)		Prob skarn, orig thought to be graphitic shale. Depth 25-30m. 600m strike.	260ppm Sn in trench.	84-2087
Aberfoyle	1982-83	Southern Skarn at granite contact	Assessment of aeromagnetic anomaly (300 to 350 gamma)		No oxidised capping. Prob magnetite & pyrr in skarn. Depth shallow. 400m strike?.	Low magnetite content.	84-2087
Aberfoyle	1982-83	228C & 229A, east of Central anomaly	Assessment of aeromagnetic anomaly (100 gamma)		Pos skarn, not outcropping. Depth 50-70m. At least 200m strike.		84-2087
Aberfoyle	1982-83	Big H region	Geol mapping, recon and on mag grid lines	Map	Big H lithologies sim to Donnelly's		84-2087
Aberfoyle	1983	St Dizier	Dighem anom/min interp		Patchy py nodules in shale give rise to Sn and assoc Cu, Zn values. Sphal most abundant econ min, chalco is minor constituent.		83-1942
Aberfoyle	1983	Central	Dighem anom interp		Depth to top interp as 130m.		83-1942
Aberfoyle	1983	Big H	Dighem anom interp		Mag suggests shallow body (outcropping skarn), indicates a very limited depth (see PMI holes H101 - H104 cross-sections. Rpt: 81-1504)		83-1942
Aberfoyle	1983	DIGHEM 228C, 229A. 1 km ne of Big H	Dighem anom interp		Pos contin of Big H skarn horizon.		83-1942
Aberfoyle	1983	Tasman River	Dighem anom interp		Originally attributed to tertiary basalt, but after Donnelly's discovery was reconsidered.		83-1942
Aberfoyle	1983	Central	Aeromag anomaly: geological mapping & limited geochem follow-up.	Three parallel skarn horizons			84-2087
Aberfoyle	1983	Donnelly's	Aeromag anomaly: geological mapping & limited geochem follow-up.		Depth of anomalies 10-100m.		84-2087
Aberfoyle	1983	Twelve Mile Ck	Aeromag anomaly: geological mapping & limited geochem follow-up.	Trace mica & sulphides (Cu to 160ppm, other low)	Probable skarn		84-2087
Aberfoyle	1983	Tasman River	Aeromag anomaly: geological mapping & limited geochem follow-up.	Noisy magnetics over basalt, skarn horizon occurs on western margin of basalt.	Difficult to define sub-basalt.	Results not encouraging	84-2087

Aberfoyle	1983	Silver Stream	Aeromag anomaly: geological mapping & limited geochem follow-up.	Small area of gossan over skarn of >400m strike length. Cu to 165ppm, Sn to 390ppm, Pb to 90ppm. Granite 2km to west. Prospector's holes.	Grnd mag suggests width of <20m, and a weakly disseminated source at 25-75m depth. Tourmalinisation suggests a shallow granite basement.	No further work warranted	84-2087
Aberfoyle	1983	DIGHEM 228C, 229A. 1 km ne of Big H	Aeromag anomaly: geological mapping & limited geochem follow-up.	No anomalous assay values	Depth to top, 50-70m, 300m strike length. Lacks outcrop & anomalous geochem. Pos local skarn dev at base of ridge.	No further work warranted	84-2087
Aberfoyle	1983	Junction	Aeromag anomaly: geological mapping & limited geochem follow-up.	Very little outcrop, no magnetite/pyrr. Low Sn assay only	Depth of anomaly 125-150m. Pos mag dolerite or deep skarn.	On Queen Hill/Severn mag lineament.	84-2087
Aberfoyle	1983	North-West	Aeromag anomaly: geological mapping & limited geochem follow-up.	Magnetically noisy granite. Low Sn assay only	No highly altered granite or qtz/tourm/Sn veining	Grid not completed, impenetrable bush. No further work warranted	84-2087
Aberfoyle	1983	Granite1 & 2	Aeromag anomaly: geological mapping & limited geochem follow-up.	Magnetically noisy granite. Low Sn assay only	No highly altered granite or qtz/tourm/Sn veining	No further work warranted	84-2087
Aberfoyle	1983	Central Anomaly nw to Tasman River Zone	Zone of low resistivity recognized from the 1980 DIGHEM.	Attrib to a shale unit. DIGHEM might indicate presence of skarn within or marginal to the shale.			84-2087
Aberfoyle	1983	Central Anomaly	Grid re-established and extended n/w & s/w, to cover DIGHEM anom's 220C, 221C, 222A, B & E, 223B, 224B. Geol mapping.	Incl isolated gossans over skarn.			84-2087
Aberfoyle	1983	Central Anomaly	Grnd mag survey over DIGHEM anom's 220C, 221C, 222A, B & E, 223B, 224B.	Skarn horizons interpreted, some coincident EM/mag anom's. See pages 10-12 of rpt for summary.			84-2087
Gippsland Oil & Minerals	1986	Tasman River, Twelve Mile Ck, Silver Stream, St Dizier, Dighem 228C & 229A	Assessment of Aberfoyle DIGHEM anomalies		St Dizier, NW & Granite anom's, host rocks not suitable for medium/large deposits; Tasman River, anom pos spurious; Twelve Mile Ck, Silver Stream, mineralised zones too thin for a viable body.	GOM relinquished EL	86-2616
New Holland Mining	1988	Heemskirk granite area	Geophysical/structural interp of MRT 1981 magnetics (& MRT gravity) by Leaman		Northern part of Heemskirk granite more conducive to skarn type min, esp around Gourlay's Ck.		88-2878
New Holland Mining	1989	Northern Heemskirk granite area	Infill gravity survey, Scintrex, 133 stns. Combined with MRT gravity data. Interp by Leaman.	Two n/s marginal granite spines and a broad shelf south of Duck Creek (i.e. Gourlay's/Granville East area).			90-3085

New Holland Mining	1990	Northern Heemskirk granite area	Relinquishment of main body of Heemskirk granite south of Granville Harbour		Northern part of Heemskirk granite more conductive to skarn type min, esp around Gourlay's Ck. Southern part considered unlikely to host significant min.	Relinquished remainder of EL in July 1990 due to "tenement access/exploration restrictions". Considered the area still prospective.	90-3085
Laffer, Roy	1990	Tasman River area nth of Heemskirk Rd	Excavator pit (57) sampling	Sn grades unreliable		Poor sampling control	97-4042
Laffer family	1995	Tasman River area nth of Heemskirk Rd	G33 cable drilling, 3 holes to test for alluvials beneath tertiary basalt cap.	Poor Sn grades. Basalt mean thickness 10m			97-4042
Renison Ltd, (& Laffer interest)	1997	Tasman River area nth of Heemskirk Rd	Resampling of Laffer (1990) pits.	Poor Sn grades, lwr than Laffer (1990) grades, eg Laffer 2kg/m <sup>3</sup> , Renison 0.17kg/m <sup>3</sup> .	Insufficient reserves or grade.	Laffer's poor sampling control caused unreliable results.	97-4042
Renison Ltd, (& Laffer interest)	1997	Tasman River area nth of Heemskirk Rd	RC drilling (16 holes), drill, rock & soil sampling, geol mapping.	Poor Sn grades, grades. Basalt mean thickness 10m. No further feeder leads found except for at the Tasman mine.	Insufficient reserves or grade, too much basalt, economics not right.		97-4042
MRT	2001	West Coast regional	WTRMP Area C aeromag, rad, dtm survey, Heli, e/w, 200m fls, 76m fh.				
MRT	2002	West Coast regional	WTRMP EM, 2002 Mt Read Volcanics, EM, aeromag, dtm survey, Heli, e/w, 200m fls, 79m fh.				
Stellar	2005	St Dizier and south	Interp and target definition of WTRMP EM, 2002 Mt Read Volcanics EM, mag by J Silic.	Targets selected			Interpretation of Mt Read 2001/2002, Tasmanian Geological Survey, Helicopter EM data, EL 46/2003. Feb 2005.

EL46/2003 Heemskirk - South Heemskirk District							
Company	Year	Location	Activity	Results	Conclusions	Comments	Report
Tas, Dept of Mines	1915	Healey & Mclvor, 600m wnw of Globe mine, nr Renison Anomaly 5.	Sn prospect	Qtz, tourmaline Sn mineralisation.	Historic prospect	Near to Renison Anomaly 5 (discrete As, Sn & weak Pb), within Agnew grid (82-1827).	GSB21, 82-1827
EZ	1960's	South Heemskirk	Exploration				
RGC	1973-74	Regional	Compilation of EZ data, geol mapping along old EZ grid lines. Target, large tonnage, low grade porphyry tin dep.			Target, large tonnage, low grade porphyry tin dep.	97-3962
Geophoto	1974	South Heemskirk granite region	Photogeological structural interp	Map			74-0988
RGC	1976	South Heemskirk incl granite	Assessment of prev work				83-2025
RGC	1976	Globe Mine	Adit grab sample	Sphalerite, Py, 0.37% Sn, 887g/t Ag.			76-1163
Renison Ltd	1977	West of Zeehan, East Heemskirk grid	Soil geochem, geol, grnd mag				79-1378
Renison Ltd	1977	Federation mine area grid, From 300m west of SRZ licence.	Soil geochem, geol, grnd mag				82-1827
Goldfields Expln	1979-80	Globe Mine	First interest		Two phases of min.	Geologists: Cross, P Roberts	83-2052
Renison Ltd	1980	Globe Mine	Gradient IP survey, grnd mag.				80-1420
Renison Ltd	1980	Globe Mine	Soil geochem grid		Pos polymetallic deposit		80-1420, 82-1827
Goldfields Expln	1980-81	Se of Heemskirk granite, 2 km sth of Mt Agnew area, just west of Globe Mine to Sweeney's Mine.	Agnew grid (100m Is). Geochem, geol mapping, geophysics (IP, mag)	targets defined			82-1827, 83-2025
Goldfields Expln	1980-81	Globe Mine	IP survey 1980 extnd 1981.				83-2052
RGC		Globe Mine	Adit samples geochem	Adit no 1, 2m sphal 2.28% Zn, low others; Adit no 2, 0.53% Pb, 0.2% Zn, 105g/t Ag; Adit no 3, 0.9% Sn (Sn/Sphal vein).			97-3962
Renison Ltd	1982	Se of Heemskirk granite, 2 km sth of Mt Agnew area, just west of Globe Mine to Sweeney's Mine.	Agnew grid (100m Is). Interp of geophysics (IP, mag) by Mitre (Bishop)	targets defined			82-1749

Renison Ltd	1982	Globe Mine	Globe Mine grid. Interp of geophysics (IP, mag) by Mitre (Bishop)	targets defined			82-1750
Goldfields Expln	1982	Globe Mine	Diamond drilling, DH8, DH9, DH10 (110m), DH11 (123.5m), DH12.	Poor min in core.	Comments by Lindsay Newnham (1997): DH TH10 & TH11 clipped alt zone, missed main min zone; TH7 not deep enough; TH9 may have clipped min zone (3m 0.25% Pb, 1.28% Zn, 69g/t Ag); TH8 should have intersected min zone (8m 1.66% Pb, 0.7% Zn, 43g/t Ag). Northern extension and ne plunge remain untested.	Little potential, no further work	82-1827, 83-2052
Aberfoyle	1982-83	North-West	Assessment of aeromagnetic anomaly		Anom zone in granite prob dissem or veined magnetite.	3400ppm Sn ssed 1km away in granite.	84-2087
Aberfoyle	1982-83	Granite Anomaly 1	Assessment of aeromagnetic anomaly		Anom zone in granite prob dissem or veined magnetite.		84-2087
Aberfoyle	1982-83	Granite Anomaly 2	Assessment of aeromagnetic anomaly		Anom zone in granite prob dissem or veined magnetite.		84-2087
Aberfoyle	1982-83	Silver Stream	Assessment of aeromagnetic anomaly (100-150 gamma)		Partly magnetic FeOx rock at contact between qrtzite and minor mudst is prob skarn. Minor Sn min at Tenth Legion 1km away. Depth: main anom 50-70m, west anom 25m. 300-500m strike.	390ppm Sn in tourm'd shale along strike from ox'd capping. Mag'lite content low.	84-2087
Aberfoyle	1982-83	Junction	Assessment of aeromagnetic anomaly (100 to 500 gamma)		No surface expression. Pos discrete dolerite body separated from main Severn body 2.7 km away, or skarn at depth.		84-2087
Goldfields Expln	1983	Anomaly 4, 1km wsw of Globe Mine.	IP anomaly follow-up. Power auger bedrock sampling for Sn, As, Ag, Pb, Zn, & geol mapping.	Mineralising 'white' granite intrusion into 'red' granite. Anomalous geochem.	white' granite is a 2nd phase intrusion into coarser 'red' granite, bringing min.		83-2025
Goldfields Expln	1983	Anomaly 4, 1km wsw of Globe Mine.	Diamond drilling, Fed26 (122.8m). Sn, S, As, Cu, Pb, Zn, Fe, Mo, Ag, Bi, Sb, F. Helicopter access.	Altered granite: complex polymetallic sulphide veins to massive sulphides. Two zones at 34m & 55m: 24m 0.22% Sn, 0.07% Cu, 0.35% Pb, 1.75% Zn, 33g/t Ag, incl 2m 0.92% Sn, 0.78% Cu, 1.38% Pb, 4.58% Zn.	Similar to Sweeney's. Pipe-like 'blind' deposit in 'red' granite.	Goldfields re-assessed the various anomalies and prospects, and concluded that they would have to be collectively processed to be viable.	83-2025
Goldfields Expln	1984	Bridge Creek (Alluvial)	Sn prospect			Mirloch point. No info found in rpt 84-2146	84-2146

Goldfields Expln	1984	400m sth west of Globe mine	Rockchip 493	Cu 360ppm, Sn 510ppm.			84-2146
Goldfields Expln	1985	Incl Globe Mine & Agnew grids	Transparencies			Huge file, not downloaded	85-2426
Goldfields Expln	1985	Eastern slopes of Mt Agnew	Ssed geochem. Sn, Cu, As, Zn, Pb.	Disappointing, mainly background levels.	Little potential, no further work		83-2052
Cavenridge Pty Ltd	1992	Sim area to SRZ Heemskirk licence, & incl all of Heemskirk granite.	Gen assessment of prospectivity and occurrences.				92-3385
David Lane	1997	Anomaly 4 report by Lindsay Newnham	Assessment of prev work and prospect	Fed26 drilling: Intense sulphide alt. 33-100m; 32.7m to 46.7m, 14m @ 2.6% Zn, incl 33.7m to 35.7m, 2m 0.48% Sn, 0.78% Cu, 1.37% Pb, 4.6% Zn, 334g/t Ag; 54.7m to 57.7m 0.92% Sn, 0.46% Zn.	Further drilling required ne, sw, and at depth below Fed26.		97-3962
David Lane	1997	Globe Mine report by Lindsay Newnham	Assessment of prev work and prospect	Complex polymetallic sulphides and significant cassiterite min. Orebody > 100g/t Ag. Minerals: cassiterite, stannite, sphalerite, chalcopyrite, galena, tetrahedrite, boulangerite.	DH TH10 & TH11 clipped alt zone, missed main min zone; TH7 not deep enough; TH9 may have clipped min zone (3m 0.25% Pb, 1.28% Zn, 69g/t Ag); TH8 should have intersected min zone (8m 1.66% Pb, 0.7% Zn, 43g/t Ag). Northern extension and ne plunge remain untested.		97-3962
David Lane	1997	Globe Mine	Adit rock sampling for ore extn. Neutron Activated Analysis for 30 elements; Std analysis for 17 elements.	Std analysis: Ag to 640g/t, Cu to 0.07%, Pb to 2.1%, Zn to 0.11%.			97-3962
David Lane	1998	Globe Mine	Geophysics, Self Potential survey	No additional info obtained			98-4112
Placer Dome	2003	Heemskirk Sth, Agnew Grid, incl Globe Mine	Compilation of Renison data			Plans only	03-4923, 03-4932.
Allegiance (& CRA)	1994-2006	Trial Harbour, Avebury, Tenth Legion districts	Nickel exploration	Viking et al		Work abuts SRZ EL46/2003 in the south	19 reports

STELLAR RESOURCES LTD

January 2009

EL46/2003 Heemskirk – Report on 2008 program

**Appendix 2:** Heemskirk Prospects Summary (A. Rigg)

North Heemskirk						
Location	GDA94 Co-ords	Prev_Activity	Results	Conclusions	Comments	Report
Duck Creek (not in MRT db). WSW of Alpine 4.5km	337400mE, 5375100mN	ANZ Expln 1975. Regional stream sed. Cu, Pb, Zn, Sn, W	Assays: Cu to 80ppm, Pb to 100ppm, Zn to 520ppm	A little higher than other regional seed's. Zn may be elevated due to assay method being designed for W.	No mag sig. Not tested.	75-1141
George Town Packet Ck area, 6km wnw of Alpine, on Bernafai Volcs in the Arthur Lineament, approx 2km nth of Bowry Fm	From SW 334300mE, 5376900mN, to NE 337200mE, to 5380000mN	CRA 1980. Regional stream sed, two soil geochem and grnd mag lines	Stream sed: Zn & "free Cu" with Sn & Co anom's in creek. Assays over high mag unit are relatively higher than off mag high - sed 1.5km ne of grid line: Cu 10-65ppm, Au to bld-0.012ppb? Sn 45-250ppm, Zn 40-105ppm; grid rockchip: Co to 50ppm, Zn to 75ppm, Ni to 120ppm, Cu to 410ppm, Cr to 30ppm, Mn to 430ppm.	Creek drains outcrops of tertiary basalt.	Regarded as low priority. Zn ssed assays in sim range to Corinna silica mine area high mag zone, where ssed assays from 100ppm to 480ppm are common (Cu 100ppm to 1500ppm are common). Not drill tested.	80-1469, 82-1801, 89-3015
Alpine West, 500m to 1.5km west of Alpine.	340310mE, 5376510mN	No geol, geochem work done around aeromag anomaly (Bowry Fm). Covered by Goldstream and Stellar 50m fls aeromag surveys.			Aeromag anom west of Alpine not tested	
Bowry Fm 4km NE of Alpine, mag high anomaly	SRZ EL: 343860mE, 5380080mN; BSM EL: 344240mE, 5380340mN.	Two rock chip samples only	Unknown, data not found	Good-looking mag anom.	Untested. Western half (stronger) of anom within SRZ EL, eastern half within BSM licence. Covered by HEC Pieman Dam reserve. Access good from Reece Dam Rd. A small corner is not encumbered.	
Bowry Fm 5-6km west of Alpine, two mag high anomalies. Hoyle Ck West is 1km ne of a coastal track; Hoyle Ck East is 2.25km ne of same coastal track.	Hoyle Ck West: 334420mE, 5375100mN; Hoyle Ck East: 336400mE, 5376280mN.	Stellar Heemskirk aeromag/rad survey covers area. No geol, geochem work done around aeromag anomalies (Bowry Fm).			Access via the construction of a ne 2.25km access track from the coastal track may be straightforward. Noted by CRAE as a mag anomaly (Stingray).	

<b>Gourlay's Creek</b>						
<b>Location</b>	<b>GDA94_Coords</b>	<b>Prev_Activity</b>	<b>Results</b>	<b>Conclusions</b>	<b>Comments</b>	<b>Report</b>
Gourlay's West, 1.5km x 600m mag high anom	West end: 334480mE, 5372740mN; East end: 335950mE, 5372650mN	Geopeko 1983. Soil geochem, 3 lines, over mag anom.	200m north of e/w mag trend high, 150m Cu zone (Cu to 380ppm) on centre line at 335470mE, 5372992mN. On west line minor elev Cu 200m nth of mag peak. On east line one Cu @ 9800ppm 380m nth of mag peak (nr creek).			83-
Vincent's Cu Prospect, 300m nth of GC; other outcrops from Vincents: 1/ approx 100m (a few chains) to the east, 2/ 120m (6 chains) ssw	MRT Mirloch db co-ords: 336912mE, 5372290mN (may be approximate).	CRAE-Geopeko 1982. Rock geochem, mapping	One malachite bearing sample: Cu 10.8%, 45.5ppm Ag;	Skarn, calcsilicate/magnetite rocks. Basalt eroded through to Oonah fm.	Discovered in 1908. Native Cu in creek bed. Abund magnetite, py, oxide mins. 1908 orebody assay Cu, trace, Zn 1.6%, Cu 1.9%, Ag 6.6 dwt/t, Au nil. Waterhouse (1915) (GSREP6)	83-1961
GC_South_1. 750 x 400m mag anom, south of main GC mag anom. North peak 160m sth of Granville Farm Tk; south peak 625m sth of GF Tk.	North end: 337340mE, 5370800mN; South end: 337120mE, 5370460mN.	Geopeko 1983. Mag anom is under basalt. Grnd mag, geol & adjacent soil geochem (over "southern window").	Geopeko reported "coarse Au" and Sn pancon (3540ppm) from stream draining west across centre of mag anom over the basalt and through to the "southern window" Oonah Fm. Loc'n: 337010mE, 5370790mN.			Plan 84-
GC_South_2. 350 x 250m discrete mag anom. 1225m sth of Granville Farm Tk. 570m nth of Granville Hbr Rd.	337940mE, 5369600mN	Geophoto Resources 1968. Regional ssed prog. No sampling over mag anom. The only nearby assays are: 300m south of anom Cu 70ppm, Pb 35ppm, Zn 150ppm. One sample 300m to the west has similar values.			untested	68-0504
GC_South_3. 250 x 125m discrete mag anom. 2025m sth of Granville Farm Tk. 230m sth of Granville Hbr Rd.	337880mE, 5368820mN	Geophoto Resources 1968. Regional ssed prog. No sampling over or near mag anom.			untested	

Granville East District						
Location	GDA94 Co-ords	Prev_Activity	Results	Conclusions	Comments	Report
Granville East. 335m WNW of Granville Farm Tk and McDernott's Pit Tk	340812mE, 5370800mN	2002 WTRMP HEM - JS 30	Mod soil auger geochem, Cu, Sn highs along NW strike within 80m. Stellar drilling EGD001, showed only mod, patchy min.		Drilled by SRZ, EGD001, 9/02/2007	
Granville East. 400m SE of Granville Farm Tk and McDernott's Pit Tk	341402mE, 5370594mN	2002 WTRMP HEM - JS 29	Soil Cu 160 to 355ppm within 100m, Zn to 1450ppm.			
Donnelly's Ck Ssed anom adjacent to SE end of Big Rocky mag anom.	Donnelly's: 342650mE, 5371540mN to 343260mE, 5371770mN.	CRA/Geopeko 1982. Regional stream sed over SE of Big Rocky mag anom. 2002 WTRMP HEM anom (JS 16) at 342172mE, 5372264mN GDA94.	Donnelly's Ck, 3 ssed 840, 970 & 800ppm Sn. Zn to 65ppm. Other metals very weak.	High Sn may be due to tertiary gravels under local basalt or a skarn source. Analysis concluded a skarn source. Big Rocky Ck mag body (Max 800nT above background) pos 200m deep.	An extn of Geopeko soil geochem line 9900N over the SE of Big Rocky mag anom may test the source of the Sn Donnelly's Ck. Co-ords: SW: 341780mE, 5371150mN to NE: 343300mE, 5372060mN (GDA94). This would also pass over a small mag appendage with a 1350ppm Sn Ssed assay.	83-1978
Tramway Ck ssed anom adjacent to SE end of Big Rocky mag anom.	Tramway: 342100mE, 5371020mN to 344340mE, 5370960mN	CRA/Geopeko 1982. Regional stream sed over SE of Big Rocky mag anom.	Tramway Ck, 8 ssed 140 to 340ppm Sn, & one at 1350ppm Sn. Other metals very weak.	High Sn may be due to tertiary gravels under local basalt or a skarn source. Analysis concluded a skarn source.	An extn of Geopeko soil geochem line 9500N over the SE of Big Rocky mag anom may test the source of the Sn in Tramway Ck. Co-ords: SW: 342000mE, 5370820mN to NE: 343420mE, 5371690mN (GDA94). This would also pass over a small mag appendage with a 1350ppm Sn Ssed assay.	83-1978

Kingswood Ck, 800m NNE of 11000.	340800mE, 5372530mN	CRA/Geopeko 1982. Regional stream sed over Big Rocky mag anom.	Ssed Sn 800ppm. Other Sseds range 302 - 470ppm adjacent to 11000.		11000 min/skarn may extend Nth. A soil geochem line along the Geopeko line 11500N may test the source of the Sn. Co-ords: SW: 339730mE, 5371860mN to NE: 342110mE, 5373170mN (GDA94). A further extn of Geopeko line 11100N to the NE would further test the Big Rocky mag anom. Co-ords: 341580mE, 5372210mN to 342410mE, 5372710mN.	83-1978
11000, 1km NNW of Stellar DDH EGD001.	340300mE, 5371820mN	CRA/Geopeko 1982. Geol mapping. Recon soil sampling, assayed for Pb, Zn, Cu, Ag, Ta, W, Sn, Co, Ni, Cr, Bi, Mn	Over strong mag anom, calc silicate rock mapped, with Sn bearing ironstone and magnetite. Ironstone; centre: calc-silicate hornfels with magnetite & py, sim to Granville East. Well-defined Sn anom. Four anom geochem trends. Sn to 890ppm, Cu to 320ppm, Zn to 1700ppm, Pb to 250ppm, As to 380ppm.	Carbonate bearing black shales corresponds to the centre of mag anom. Dolomitic rocks to the west of mag anom.		83-1978
Donnelly's West gossan	340590mE, 5369270mN	Aberfoyle 1981. Rock chip sampling	Sn to 40ppm, W to 845ppm, with coincident Cu to 3250ppm, Pb to 1750ppm, Zn to 2.6%, located nr minor mag anom's.		No soil/rock geochem lines done within 250m. On granite margin.	81-1623
Donnelly's prospect area. 1.1km SSE of Stellar DDH EGD001. DIGHEM 202D: 250m NW of mag/geochem anom; DIGHEM 203A: 330m NE of mag/geochem anom. WTRMP HEM anom (JS 41), 445m W of centre; anom (JS 42) 900m SW of centre.	Donnelly's mag anom centred on: 341300mE, 5370000mN. DIGHEM 202D: 341150mE, 5370195mN; DIGHEM 203A: from 341580mE, 5370064mN to 341680mE, 5370134mN. HEM anom JS 41: 370852mE, 536964mN; anom JS 42: 340502mE, 5369604mN.	Aberfoyle 1983. Soil geochem, Geol mapping, Grid costeaning, DIGHEM; WTRMP HEM.	Over strong southern mag peak, outcropping calc-silicate/magnetite skarn (up to 1.35% Sn). At least two skarn horizons. Zn to 5.2%, Cu to 0.71%, Sn generally weak. For DIGHEM 202D: within 150m to Nth, 7 soil Cu >200ppm (max 1100ppm), with Sn to 700ppm, Zn to 5900ppm; one spot high 35m Sth, Pb 400ppm, Zn 665ppm. For DIGHEM 203A: no geochem samples taken within approx 200m radius. HEM: JS 41: surrounding soil auger geochem is low, with one spot Cu 810ppm, 150m SW; HEM: JS 42: on edge of granite within 300m of weak mag anom's & Donnelly's gossan, nearby soil geochem Sn low, Cu 140 to 180ppm, 45m NW.			83-1942

St Dizier District						
Location	GDA94 Co-ords	Activity	Results	Conclusions	Comments	Report
McArthur's (Mt Arthur) Copper Mine, 700m (300m) ne of St Dizier	345315, 5367987mN	Tas, Dept of Mines, 1915. Inspection and assessment	Pre-Silurian blue slate, tourmalinised country further sth. 1914 orebody (5ft wide) assay: Au trace, Ag 9.6oz/t, Cu 26.8%, Sn nil. Dumps: chanco, 'blende', arsenopy, grab sample assay Cu 2.5%, Zn 13.5%	Surface enrichment concluded, not economic at depth (shaft 53ft)	MRT Mirloch db 2006	GSREP6, Plan 1478
St Dizier, Central, Big H skarn horizon	Centroid: 345170mE, 5367770mN	Aberfoyle 1980. Soil geochem grid n/s 100m spacing. Sn, Wo3, As, Cu, Pb, Zn.	St Dizier: As, 1 area/trend >100ppm, max 1300ppm; Cu, 1 area/trend >300ppm, max 2700ppm; Pb, 1 area/trend >100ppm, max 400ppm; Sn, 0 >500ppm; WO, 1 area >100ppm, max 200ppm; Zn, 1 area/trend >300ppm, max 4400ppm.		Geologist: C H Young	81-1521
Central skarn horizon	DDH104, 346230mE, 5368135mN. Centroid: 346440mE, 5368050mN	Pickands Mathers, 1967. Diamond drilling, H104 (147m). Logs & assays. Aberfoyle 1980. Soil geochem grid n/s 100m spacing. Sn, Wo3, As, Cu, Pb, Zn.	DDH104: surf to 48.7m weak min zone, Cu to 700ppm, Sn tr, Zn to 300ppm. Aberfoyle geochem: Central: strong broad Cu zone to 600ppm, mod Sn zone, one spot high to 650ppm, strong Zn zone with areas to 4400ppm. As, 2 areas >100ppm, max 550ppm, Cu, 3 areas >300ppm, max 600ppm; Pb, 2 areas >100ppm, max 700ppm; Sn, 1 >500ppm; WO, 1 larger area >100ppm, max 300ppm; Zn, 4 areas >300ppm, max 5600ppm.		Geologist: C H Young	67-0456, 80-1504, 81-1521
Central skarn horizon area. 1/ Twelve Mile Ck 220C, 65m sth of Central; 2/ 228C & 229A, 1.2km nth-east of Central anomaly; 3/ 224A, 325m SE of Central; 4/ 222A 575m SW of Central & 222B 400m SW of Central; 5/ 222C, 250m W of central & 222D, 160m NW of Central; 6/ 223B & 224B, 300m NE of Central; 7/ 231A, 740m SE of Big H anom; 8/ 225B, 400m WNW of Big H anom.	1/ 220C, 346430mE, 5367990mN; 2/ 228C 348420mE, 5368150mN; 229A 348540mE, 5368040mN; 3/ 224A 346670mE, 5367840mN; 4/ 222A 346020mE, 5367650mN, 222B 346150mE, 5367780mN; 5/ 222C 346200mE, 5368130mN, & 222D, 346310mE, 5368180mN; 6/ 223B 346500mE, 5368400mN to 223B 346730mE, 5368220mN, to	Aberfoyle 1982-3. Dighem anomalies. 1/ 220C, Assessment of aeromagnetic anomaly (4000 gamma); 2/ 228C & 229A, Assessment of aeromagnetic anomaly (100 gamma). GOM 1986, Assessment of Aberfoyle DIGHEM anomalies; 3/ 224A Dighem anom; 4/ 222A & 222B Dighem anom; 5/ 222C & 222D Dighem anom; 6/ 223B & 224B Dighem anom; 7/ 231A Dighem anom; 8/ 225B Dighem anom.		1/ 220C: Prob skarn, orig thought to be graphitic shale. Depth 25-30m. 600m strike. 50m from mod Cu auger geochem; 2/ 228C & 220A, Pos skarn, not outcropping. Depth to top 50-70m. 300m strike, low mag zone, geochem nearby max Sn 15ppm; 3/ 224A on edge of mag anom & skarn, with mod auger Cu min; 4/ 222A & 222B, near granite, no skarn or geochem nearby; 5/ 222C & 222D, med/strong auger soil Cu assoc on edge of skarn; 6/ 223B & 224B, parallel to Central/Big H broad mag zone, no geochem nearby, no skarn mapped; 7/ 225B,	Aberfoyle 1984: Skarn horizons interpreted, some coincident EM/mag anom's. See pages 10-12 of rpt for summary. GOM: St Dizier, NW & Granite anom's, host rocks not suitable for medium/large deposits; Tasman River, anom pos spurious; Twelve Mile Ck, Silver Stream, mineralised zones too thin for a viable body;	80-1504, 81-1571, 83-1942, 84-2087, 86-2616

	224B 346910mE, 5368090mN; 7/ 347780mE, 5366810mN; 8/ 347400mE, 5367440mN.			no mag sig, no geochem anom.		
Central; Central, Second Skarn Horizon to Tasman River zone		Aberfoyle, 1983. 1/ Assessment of aeromagnetic anomaly (500 gamma); 2/ Assessment of aeromagnetic anomaly (700 gamma); Aeromag anomaly: geological mapping & limited geochem follow-up.	Three parallel skarn horizons. Aberfoyle 1984: Zone of low resistivity recognized from the 1980 DIGHEM.	1/ Magnetite & pyrr in skarn. Depth 70-100m. No oxidised capping. 2/ Prob magnetite & pyrr in skarn. Depth 25m. Attrib to a shale unit. DIGHEM might indicate presence of skarn within or marginal to the shale.		84-2087
Big H	DDH101, 347200mE, 5367625mN; DDH102, 347520mE, 5367585mN; DDH103, 346545mE, 5367400mN.	Pickands Mathers, 1967. Diamond drilling, DDH101 (160m), H102 (184m), H103 (76m), Logs & assays. Orig an iron ore prospect.	DH101: two min zones, upper weak, lwr incl 1.3m @0.45% Sn nr bottom of hole, highest assay 6400ppm; Cu max 700ppm, Zn max 8900ppm, magnetite, sulphides- py, chalco, sphal, arseno, galena, etc. DDH102: no min zone. DDH103: weak min zone, Cu to 600ppm, Sn to 1000ppm, Zn to 300ppm.		Rpt: 67-0456 Ref to hole N8 (can't locate), 1.8m @ 8.67% Cu. Rpt 80-1504 has complete info.	67-0456 & 80-1504
Big H skarn horizon	Centroid: 347400mE, 5367440mN	Aberfoyle 1980. Soil geochem grid n/s 100m spacing. Sn, Wo3, As, Cu, Pb, Zn.	Big H: As, 1 area >100ppm, max 280ppm, Cu, 6 areas >300ppm, max 800ppm; Pb, 6 areas >100ppm, max 240ppm; Sn, 4 areas >500ppm; WO, 1 area >100ppm, max 140ppm; Zn, 2 areas >300ppm, max 500ppm.		Geologist: C H Young	81-1521
Big H skarn horizon area. 1/ 226A, 200m WNW of Big H anom; 2/ 227B 100m NW of Big H anom; 3/ 228D 40m N of Big H anom.	1/ 226A, 347220mE, 5367560mN; 2/ 227B, 347320mE, 5367500mN; 3/ 228D, 347400mE, 5367440mN.	Aberfoyle 1982-3. Dighem anomalies.	The three DIGHEM anom's lie within the mapped skarn horizon and are assoc with Big H mag anom. Rock chip auger assays Cu to 750ppm, Sn to 1200ppm, Zn to 900ppm.		The 330m geochemically anomalous section of the skarn horizon has not been drill tested, between DDH101 (west) and DDH102 (east).	80-1412, 80-1504, 81-1571
Big H east area mag anom, 2km ESE of Big H	Centroid: 349100mE, 5366550mN	Aberfoyle 1980. Regional stream sed.	Mod mag high over/in granite. Ssed Sn 480 to 4750ppm (349000mE, 5366970mN (GDA94), from drainage to north from mag.			80-1412
Big H east area, 3.3km east of Big H	350550mE, 5366780mN.	Aberfoyle 1980. Regional stream sed.	Ssed Sn 3400ppm at 350550mE, 5366780mN. Low mag area, near other local values of 400, 800ppm Sn.			80-1412

Big H mag anom centre.	347275mE, 5367500mN	Aberfoyle, 1982. Assessment of aeromagnetic anomaly. Dighem anom interp		Sn in magnetite oxidised capping. Mag suggests shallow body (outcropping skarn), indicates a very limited depth (see PMI holes H101 - H104 cross-sections. Rpt: 81-1504). Big H lithologies sim to Donnelly's.	360ppm Sn RAB drilling.	83-1942, 84-2087
Tasman River Zone on SW side of NW/SE mag high trend.	Grid centroid: 344150mE, 5369960mN	Aberfoyle 1980-3. 150ppm Sn ssed anom at 344260mE, 5370100mN. Grnd mag survey, SIROTEM grnd EM (anom @ 346440mE, 5368810mN), geol mapping. Trench geochem & 7 auger holes to 50m. Assessment of aeromagnetic anomaly (500 gamma); 2002 WTRMP HEM.	Grnd mag showed a broad mag anom open to the nth, noisy magnetic basalt masks response from underlying rocks. No outcrop of skarn or shale. Skarn horizon occurs on western margin of basalt. HEM (JS 8) is coincident with Aberfoyle 1980 SIROTEM anom. Auger holes penetrated shale & clay, base metal values low, one spot high in trench of Sn 260ppm, Cu 160ppm.	Originally attributed to tertiary basalt, but after Donnelly's discovery was reconsidered. Not adequately tested in 1982. Dissem magnetite in basalt. Carbonaceous shale conductor? Anom on western edge of pos skarn. 600m strike.	No other geochem in grid area.	80-1504, 81-1571, 83-1942, 84-2087

South Heemskirk District						
Location	GDA94 Co-ords	Activity	Results	Conclusions	Comments	Report
Healey & Mclvor, 600m wnw of Globe mine, 170m NE of Renison IP Anomaly 5.	352940mE, 5359700mN	MRT Mirloc anom. Sn prospect	Qtz, tourmaline Sn mineralisation.	Historic prospect	Near to Renison Anomaly 5 (discrete As, Sn & weak Pb), within Agnew grid (82-1827).	GSB21, 82-1827
Contiguous Ck west - East Heemskirk grid. Centred 570m north of Trial Hbr Rd & EL eastern boundary.	354080mE, 5359840mN	Renison Ltd, 1977. East Heemskirk grid, soil geochem, geol, grnd mag	Mag trend extends 300m into SRZ EL from east. 30m inside EL Cu 150ppm, Sn 230-300ppm, Zn 195ppm. Strong mag anom's 400m to the E & NE of EL boundary, with large Cu, Pb, Sn & Zn anom area 130m east of SRZ anom.		An old track is marked as passing through the area, nth along the west side of EL boundary. Tk may have been sampled.	79-1378, plan p260 85-2426.
Coleman's Ck, in SE cnr of licence, 400m south of Trial Hbr Rd & Globe Mine tk junction, and approx 1.2km NW of Avebury Mine, Viking portal.	Centred on 353780mE, 5358700mN.	Renison Ltd, 1981. Agnew grid, soil geochem, geol, grnd mag, IP. Adjacent 1977 East Heemskirk grid. MRT 2002, WTRMP HEM survey.	IP anomaly assoc with soil geochem: Zn >200ppm, Pb >100ppm, Cu 55ppm, Sn 230 to 500ppm & As. HEM in area is weakly conductive. Mag is flat and low.			79-1378, 82-1827
Globe Mine, 650m NW of Trial Hbr Rd in Sth of licence.	353470mE, 5359620mN.	Goldfields Expln, 1979-1985. Gradient IP survey, grnd mag. Soil geochem grid. IP survey 1980 extnd 1981. Adit samples geochem. Globe Mine grid. Interp of geophysics (IP, mag) by Mitre (Bishop). Diamond drilling, DH8, DH9, DH10 (110m), DH11 (123.5m), DH12. L Newnham for David Lane, 1997-8. Assessment of prev work and prospect. Adit rock sampling for ore extrn. Neutron Activated Analysis for 30 elements; Std analysis for 17 elements. Geophysics, Self Potential survey.	Adit no 1, 2m sphal 2.28% Zn, low others; Adit no 2, 0.53% Pb, 0.2% Zn, 105g/t Ag; Adit no 3, 0.9% Sn (Sn/Sphal vein). Drilling: poor min in core. Complex polymetallic sulphides and significant cassiterite min. Orebody > 100g/t Ag. Minerals: cassiterite, stannite, sphalerite, chalcopyrite, galena, tetrahedrite, boulangerite. Adit work: Std analysis: Ag to 640g/t, Cu to 0.07%, Pb to 2.1%, Zn to 0.11%.	Two phases of min. Pos polymetallic deposit. Comments by Lindsay Newnham (1997): DH TH10 & TH11 clipped alt zone, missed main min zone; TH7 not deep enough; TH9 may have clipped min zone (3m 0.25% Pb, 1.28% Zn, 69g/t Ag); TH8 should have intersected min zone (8m 1.66% Pb, 0.7% Zn, 43g/t Ag). Northern extension and ne plunge remain untested.	Geologists: Cross, P Roberts comments "Little potential, no further work".	76-1163, 80-1420, 82-1750, 82-1827, 83-2052, 85-2426, 97-3962, 98-4112
Bridge Ck, 400m sth west of Globe mine	353150mE, 5359340mN	Goldfields Expln, 1984. Rockchip 493	Cu 360ppm, Sn 510ppm.		No IP, or mag anom nearby.	84-2146
Anomaly 3, 340m SW of IP anom 4, & 450m NE of IP anom 1 in Agnew grid.	Centred on 352340mE, 5359100mN	Renison 1983. Agnew grid, IP, grnd mag, bedrock sampling for Sn, As, Ag, Pb, Zn, & geol mapping.				82-1827

Anomaly 4, 1km wsw of Globe Mine.	352600mE, 5359300mN	Renison 1983. IP anomaly follow-up. Power auger bedrock sampling for Sn, As, Ag, Pb, Zn, & geol mapping. Diamond drilling, Fed26 (122.8m). Sn, S, As, Cu, Pb, Zn, Fe, Mo, Ag, Bi, Sb, F. Helicopter access. L Newnham for David Lane, 1997-8. Assessment of prev work and prospect.	Mineralising 'white' granite intrusion into 'red' granite. Anomalous geochem. Fed26 drilling: Altered granite: complex polymetallic sulphide veins to massive sulphides. Two zones at 34m & 55m: 24m 0.22% Sn, 0.07% Cu, 0.35% Pb, 1.75% Zn, 33g/t Ag, incl 2m 0.92% Sn, 0.78% Cu, 1.38% Pb, 4.58% Zn. LAN: Fed26 drilling: Intense sulphide alt. 33-100m; 32.7m to 46.7m, 14m @ 2.6% Zn, incl 33.7m to 35.7m, 2m 0.48% Sn, 0.78% Cu, 1.37% Pb, 4.6% Zn, 334g/t Ag; 54.7m to 57.7m 0.92% Sn, 0.46% Zn.	white' granite is a 2nd phase intrusion into coarser 'red' granite, bringing min. Similar to Sweeney's. Pipe-like 'blind' deposit in 'red' granite. Further drilling required ne, sw, and at depth below Fed26.	Goldfields re-assessed the various anomalies and prospects, and concluded that they would have to be collectively processed to be viable.	83-2025, 97-3962
Silver Stream	Anomalous geochem centred on 355860mE, 5362320mN	Aberfoyle, 1983. Aeromag anomaly (100-150 gamma): grnd mag, geological mapping & limited geochem follow-up.	Small area of gossan over skarn of >400m strike length. Four anomalous rchip samples: Cu to 410ppm, Sn to 390ppm, Pb to 90ppm, Zn to 270ppm. Partly magnetic FeOx rock at contact between qrtzite and minor mudst is prob skarn. Minor Sn min at Tenth Legion 1km away. Depth: main anom 50-70m, west anom 25m. 300-500m strike. Granite 2km to west. Prospector's holes.	Grnd mag suggests width of <20m, and a weakly disseminated source at 25-75m depth. Tourmalinisation suggests a shallow granite basement. Oxidised capping. Magnetite content low.	On a low/med mag feature, 850m Nth of and parallel to Tenth Legion mag trend, on grave trend.	84-2087
Piney Creek, along Tenth Legion Fault, 400m within EL	HEM tgt JS_3 at 354050mE, 5362590mN; NW mag trend from West: 353900mE, 5362600mN to east: 354700mE, 5362200mN; NW grav 250 to 350m NE of mag trend.	Goldfields Expln, 1984. Gridded, grnd mag?, grav, ssed geochem in creek 600m SW of Piney Ck.	No Ssed in Piney Ck. Ssed SW of Piney Ck: Zn, Pb, Cu bld; WO2 to 70ppm, Sn to 740ppm, As to 90 ppm, all in the east and outside HK EL.		No data of any kind found. Tenth Legion fault/mag/grav trend not tested. Coincident MRT WTRMP HEM (JS 3) & mag high 400m within EL. Gravity anom/trend 250 to 350m NE of mag trend. Grid only is marked on plan, pos with no work ever done.	85-2315, 85-2323

STELLAR RESOURCES LTD

January 2009

EL46/2003 Heemskirk – Report on 2008 program

**Appendix 3:** Survey And Logistics Report on Helicopter Borne Versatile Time Domain Electromagnetic (VTEM) Survey on the Tasmanian Project, Australia for Stellar Resources Ltd. Geotech Airborne Ltd.

**SURVEY AND LOGISTICS REPORT  
ON A HELICOPTER BORNE  
VERSATILE TIME DOMAIN  
ELECTROMAGNETIC (VTEM)  
SURVEY**

on the

**TASMANIA PROJECT  
AUSTRALIA**

for

**STELLAR RESOURCES LTD**

by



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**Project 373  
May, 2008**

## TABLE OF CONTENTS

1. SURVEY SPECIFICATIONS.....	3
1.1. General.....	3
1.2. VTEM flight plan on Google EARTH™ Background .....	3
1.3. Survey block coordinates. ....	4
1.4. Survey block specifications .....	4
1.5. Survey schedule .....	5
2. SYSTEM SPECIFICATIONS.....	6
2.1. Instrumentation.....	6
2.2. VTEM Configuration .....	7
2.3. VTEM decay sampling scheme .....	7
2.4. VTEM Transmitter Waveform over one half-period.....	8
3. PROCESSING.....	9
3.1. Processing parameters.....	9
3.2. Flight Path.....	9
3.3. Electromagnetic Data .....	9
3.4. Magnetic Data .....	9
3.5. Digital Terrain Model .....	10
4. DELIVERABLES.....	11
5. PERSONNEL.....	13

## APPENDICES

A. Modeling VTEM data .....	14
B. Geophysical Maps .....	20



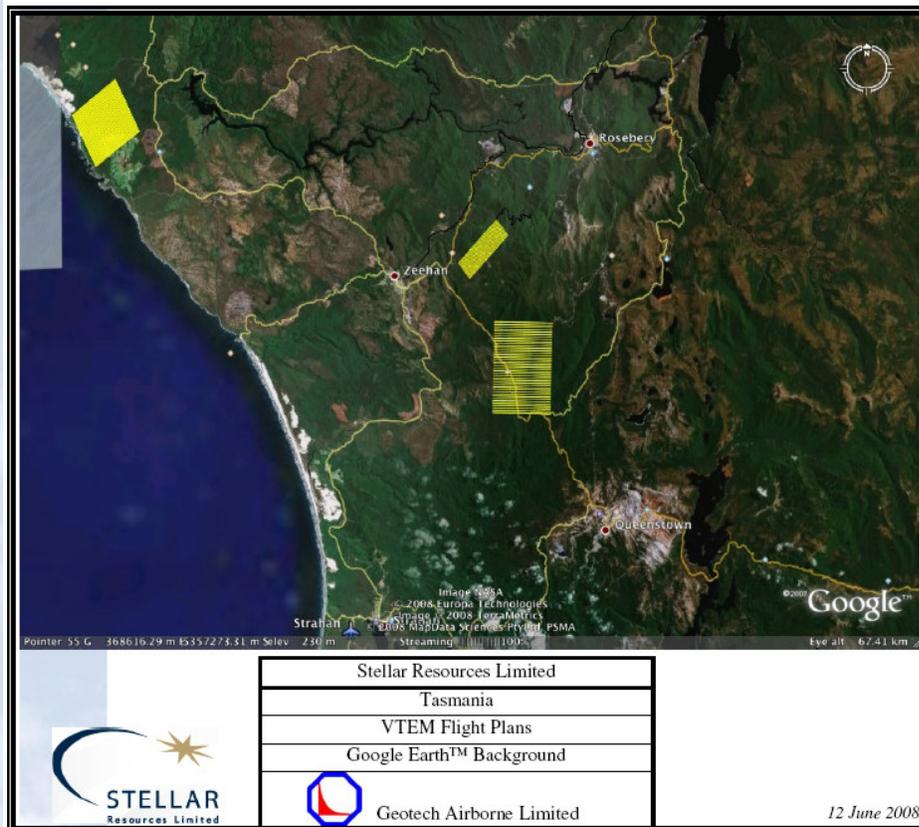
# SURVEY AND LOGISTICS REPORT ON A HELICOPTER-BORNE VTEM SURVEY

## 1. SURVEY SPECIFICATIONS

### 1.1. General

Job Number	A373
Client	Stellar Resources Limited
Project Area	Tasmania
Location	Australia
Number of Blocks	3
Total line kilometres	648.7
Survey date	12 April to 19 April, 2008
Client Representative	Tom Whiting Tel: +61 8 9249 8814
Client address	Level 7 Exchange Tower 530 Little Collins Street Melbourne, VIC 3000, AUSTRALIA
Client Consultant (if applicable)	N.A.

### 1.2. VTEM flight plan on Google EARTH™ Background



### 1.3. Survey block coordinates.

Easting UTM Z 55S	Northing UTM Z 55S
EL46	
337440	5378370
339658	5373888
335800	5370740
333556	5375219
337440	5378370
Easting UTM Z 55S	Northing UTM Z 55S
EL50	
370612	5358184
375612	5358184
375612	5350184
370612	5350184
370612	5358184
Easting UTM Z 55S	Northing UTM Z 55S
EL21	
369692	5368148
372037	5365034
368786	5361184
368112	5361185
368111	5361314
368429	5361688
366497	5364355

### 1.4. Survey block specifications

Survey block	Line spacing (m)	Line-km (contractual)	Line-km (delivered)	Flight direction	Line number
EL46	100	243	249.1	154°- 334°	L10010 – L10490
	n/a				
EL50	100	200	204	90°- 270°	L20010 – L20400
	n/a				
EL21	100	192	195.6	41°- 221°	L30010 – L30170 L40010 – L40150 L50010 – L50060
	n/a				

### 1.5. Survey schedule

Date	Flight #	Block	Nominal Production Km flown	Comments
12-Apr-08				Mobilization, reconnaissance
13-Apr-08				Waiting for approval of navigation files
14-Apr-08				Weather day (low clouds)
15-Apr-08	F01, F02, F03, F04	EL46, EL21	305.5	
16-Apr-08	F05, F06	EL46, EL50	222,5	
17-Apr-08				Waiting for instructions for further flights



18-Apr-08	F07, F08	EL21	109	EL 21 N and S extensions
19-Apr-08				Demobilization



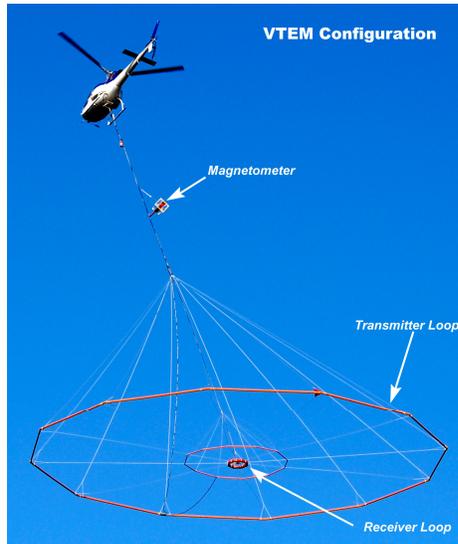
## 2. SYSTEM SPECIFICATIONS

### 2.1. Instrumentation

Survey Helicopter	
Model	AS 350 B3
Registration	VH-IPW
Operating Company	Air Walser
Nominal survey speed	80 km/h
Nominal terrain clearance	100 m
VTEM Transmitter	
Coil diameter	26 m
Number of turns	4
Pulse repetition rate	25 Hz
Peak current	200 Amp
Duty cycle	36.8 %
Peak dipole moment	424,743 NIA
Pulse width	7.36 ms
Nominal terrain clearance	63 m
VTEM Receiver	
Coil diameter	1.2 metre
Number of turns	100
Effective area	113.1 m <sup>2</sup>
Sampling interval	0.1 s
Nominal terrain clearance	63 m
Magnetometer	
Type	Geometrics
Model	Optically pumped cesium vapour
Sensitivity	0.02 nT
Sampling interval	0.1 s
Cable length	13 m
Nominal terrain clearance	88 m
Radar Altimeter	
Type	Terra TRA 3000/TRI 40
Position	Beneath cockpit
Sampling interval	0.2 s
GPS navigation system	
Type	NovAtel
Model	WAAS enabled OEM4-G2-3151W
Antenna position	Helicopter tail
Sampling interval	0.2 s
Base Station Magnetometer/GPS	
Type	Geometrics
Model	Cesium vapour
Sensitivity	0.001 nT
Sampling interval	1 s



## 2.2. VTEM Configuration



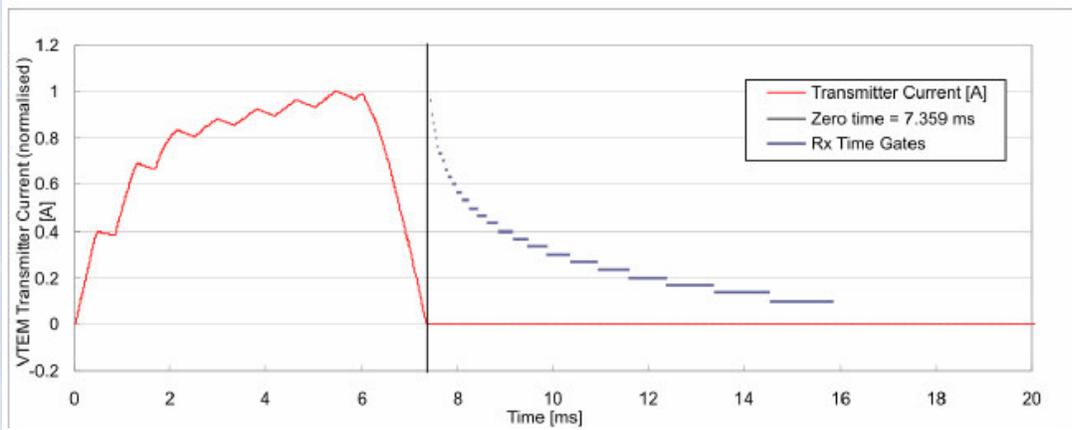
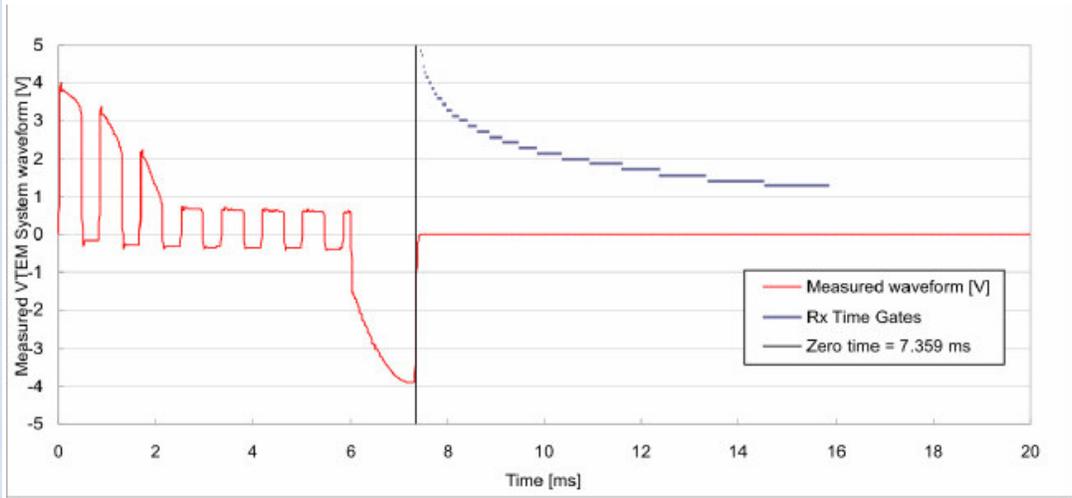
Configuration	
Cable angle with vertical	23 °
Cable length (EM receiver)	42 m
Cable length (Magnetometer)	12 m

## 2.3. VTEM decay sampling scheme

VTEM B-field System Decay Sampling scheme				
Array Index	Microseconds			
	Middle	Start	End	Width
8	83	78	91	13
9	99	91	110	19
10	120	110	131	21
11	141	131	154	24
12	167	154	183	29
13	198	183	216	34
14	234	216	258	42
15	281	258	310	53
16	339	310	373	63
17	406	373	445	73
18	484	445	529	84
19	573	529	628	99
20	682	628	750	123
21	818	750	896	146
22	974	896	1063	167
23	1151	1063	1261	198
24	1370	1261	1506	245
25	1641	1506	1797	292
26	1953	1797	2130	333
27	2307	2130	2526	396
28	2745	2526	3016	490
29	3286	3016	3599	583
30	3911	3599	4266	667
31	4620	4266	5058	792
32	5495	5058	6037	979
33	6578	6037	7203	1167
34	7828	7203	8537	1334



#### 2.4. VTEM Transmitter Waveform over one half-period



### 3. PROCESSING

#### 3.1. Processing parameters

Coordinates	
Projection	UTM Zone 30 N
Datum	WGS 84
Spheroid	WGS 84
Spherics rejection (EM and Magnetic data)	
Non-linear filter	5 point
Non-linear filter sensitivity	0.0001
Low-pass filter wavelength	25 m
Lag correction of other sensors to EM receiver position	
GPS	8 m
Radar	10 m
Magnetometer	3 m

#### 3.2. Flight Path

The flight path, recorded by the acquisition program as WGS 84 latitude/longitude, was converted into the UTM coordinate system in Oasis Montaj. The flight path was drawn using linear interpolation between x,y positions from the navigation system. Positions are updated every second and expressed as UTM eastings (x) and UTM northings (y).

#### 3.3. Electromagnetic Data

A three stage digital filtering process was used to reject major spheric events and to reduce system noise. Local spheric activity can produce sharp, large amplitude events that cannot be removed by conventional filtering procedures. Smoothing or stacking will reduce their amplitude but leave a broader residual response that can be confused with geological phenomena. To avoid this possibility, a computer algorithm searches out and rejects the major spheric events.

The signal to noise ratio was further improved by the application of a low pass linear digital filter. This filter has zero phase shift which prevents any lag or peak displacement from occurring, and it suppresses only variations with a wavelength less than the specified filter wavelength.

#### 3.4. Magnetic Data

The processing of the magnetic data involved the correction for diurnal variations by using the digitally recorded ground base station magnetic values. The base station magnetometer data was edited and merged into the Geosoft GDB database on a daily basis. The aeromagnetic data was corrected for diurnal variations by subtracting the observed magnetic base station deviations.

A micro-levelling procedure was then applied. This technique is designed to remove persistent low-amplitude components of flight-line noise remaining after tie line levelling.



The corrected magnetic data was interpolated between survey lines using a random point gridding method to yield x-y grid values for a standard grid cell size of a quarter of the line spacing. The Minimum Curvature algorithm was used to interpolate values onto a rectangular regular spaced grid.

### 3.5. Digital Terrain Model

Subtracting the radar altimeter data from the GPS elevation data creates a digital elevation model. To correct for minor elevation differences that are evident in this data when gridded, Shuttle Radar Topography Mission (SRTM) data have been used.



#### 4. DELIVERABLES

VTEM Survey and logistics report		
Format	PDF	
Copies	2 x Digital (DVD/CD) 2 x Hard copy	
Database		
Format	Digital Geosoft (.GDB)	
Channels	Name	Description
	x	X positional data
	y	Y positional data
	Lon	Longitude data
	Lat	Latitude data
	Z	GPS antenna elevation (metres above sea level)
	Radar	Helicopter terrain clearance from radar altimeter (metres above ground level)
	RxAlt	EM Receiver and Transmitter terrain clearance (metres above ground level)
	DTM	Digital terrain model (metres)
	Gtime1	UTC time (seconds of the day)
	Mag	Raw Total Magnetic field data (nT)
	MagBase	Magnetic diurnal variation data (nT)
	MagDiu	Total Magnetic field diurnal variation and lag corrected data (nT)
	MagTieL	Tie-line leveled Total Magnetic field data (nT)
	MagMicL	Microleveled Total Magnetic field data (nT) (if required)
	SF[8] to SF[34]	dB/dt, Time Gates 83 $\mu$ s to 7828 $\mu$ s ( $\text{pV/A/m}^4$ )
	PLM	Power line monitor
Grids		
Format	Digital Geosoft (.GRD and .GI) <sup>1</sup>	
Grids	Name	Description
	Mag_ <i>blk</i> <sup>2</sup>	Total Magnetic field (nT)
Maps		
Format	Digital Geosoft (.MAP and .GM) <sup>3</sup>	
Scale	1:25 000	
Maps	Name	Description
	Mag_ <i>blk</i>	Total Magnetic field colours
	dBdt_Prof_ <i>blk</i>	VTEM dB/dt profiles, Time Gates 0.234 – 6.578 ms in linear - logarithmic scale

<sup>1</sup> A Geosoft .GRD file has a .GI metadata file associated with it, containing grid projection information.

<sup>2</sup> *blk* indicates the block name

<sup>3</sup> A Geosoft .MAP file has a .GM metadata file associated with it, containing projection information.



Waveform		
Format	Digital Excel Spreadsheet (VTEM_Waveform.xls)	
Columns	Name	Description
	Time	Sampling rate interval, 10.416 $\mu$ s
	Volt	Output voltage of the receiver coil (volt)
	Current	Transmitter current (normalised to 1A peak)

Google Earth Flight Path file	
Format	Google Earth A222_FlightPath.kmz
	Free version of Google Earth software can be downloaded from, <a href="http://earth.google.com/download-earth.html">http://earth.google.com/download-earth.html</a>



## 5. PERSONNEL

Geotech Airborne Limited Personnel	
Operator / Crew chief	Paul Stevenson
Operator	Alex Castiglione
Technical Support	Barry McAuliffe
Data Processing (Preliminary)	Stephen Carter
Data Processing (Final) /Reporting	Richard Gürtler
Final data supervision	Malcolm Moreton Data Processing Manager ( <a href="mailto:malcolm@geotechairborne.com">malcolm@geotechairborne.com</a> )
Overall project management	Keith Fisk Managing Partner and Director ( <a href="mailto:keith@geotechairborne.com">keith@geotechairborne.com</a> )



## APPENDIX A

### GENERALIZED MODELING RESULTS OF THE VTEM SYSTEM (by Roger Barlow)

#### Introduction

The VTEM system is based on a concentric or central loop design, whereby, the receiver is positioned at the centre of a 26.1 metres diameter transmitter loop that produces a dipole moment up to 625,000 NIA at peak current. The wave form is a bi-polar, modified square wave with a turn-on and turn-off at each end. With a base frequency of 25 Hz, the duration of each pulse is approximately 7.5 milliseconds followed by an off time where no primary field is present.

During turn-on and turn-off, a time varying field is produced (dB/dt) and an electro-motive force (emf) is created as a finite impulse response. A current ring around the transmitter loop moves outward and downward as time progresses. When conductive rocks and mineralization are encountered, a secondary field is created by mutual induction and measured by the receiver at the centre of the transmitter loop.

Measurements are made during the off-time, when only the secondary field (representing the conductive targets encountered in the ground) is present.

Efficient modeling of the results can be carried out on regularly shaped geometries, thus yielding close approximations to the parameters of the measured targets. The following is a description of a series of common models made for the purpose of promoting a general understanding of the measured results.

#### Variation of Plate Depth

Geometries represented by plates of different strike length, depth extent, dip, plunge and depth below surface can be varied with characteristic parameters like conductance of the target, conductance of the host and conductivity/thickness and thickness of the overburden layer.

Diagrammatic models for a vertical plate are shown in figures A and G at two different depths, all other parameters remaining constant. With this transmitter-receiver geometry, the classic **M** shaped response is generated. Figure A shows a plate where the top is near surface. Here, amplitudes of the dual peaks are higher and symmetrical with the zero centre positioned directly above the plate. Most important is the separation distance of the peaks. This distance is small when the plate is near surface and widens with a linear relationship as the plate (depth to top) increases. Figure G shows a much deeper plate where the separation distance of the peaks is much wider and the amplitudes of the channels have decreased.

#### Variation of Plate Dip

As the plate dips and departs from the vertical position, the peaks become asymmetrical. Figure B shows a near surface plate dipping 80°. Note that the direction of dip is toward the high shoulder of the response and the top of the plate remains under the centre minimum.

As the dip increases, the aspect ratio (Min/Max) decreases and this aspect ratio can be used as an empirical guide to dip angles from near 90° to about 30°. The method is not sensitive enough where dips are less than about 30°. Figure E shows a plate dipping 45° and, at this angle, the minimum shoulder starts to vanish. In Figure D, a



flat lying plate is shown, relatively near surface. Note that the twin peak anomaly has been replaced by a symmetrical shape with large, bell shaped, channel amplitudes which decay relative to the conductance of the plate.

Figure H shows a special case where two plates are positioned to represent a synclinal structure. Note that the main characteristic to remember is the centre amplitudes are higher (approximately double) compared to the high shoulder of a single plate. This model is very representative of tightly folded formations where the conductors were once flat lying.

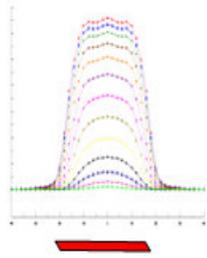
### **Variation of Prism Depth**

Finally, with prism models, another algorithm is required to represent current on the plate. A plate model is considered to be infinitely thin with respect to thickness and incapable of representing the current in the thickness dimension. A prism model is constructed to deal with this problem, thereby, representing the thickness of the body more accurately.

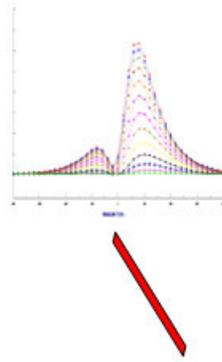
Figures C, F and I show the same prism at increasing depths. Aside from an expected decrease in amplitude, the side lobes of the anomaly show a widening with deeper prism depths of the bell shaped early time channels.



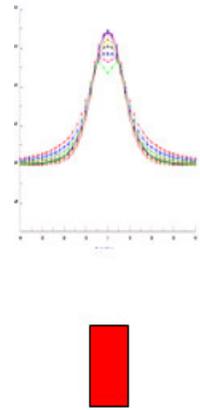
**A**



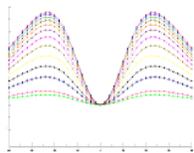
**B**



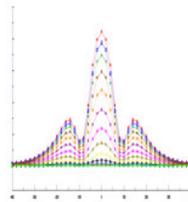
**C**



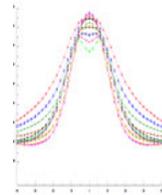
**D**



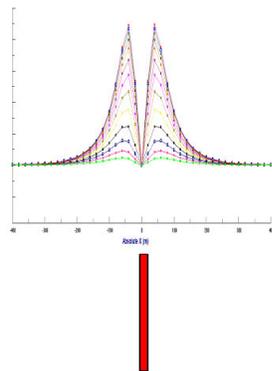
**E**



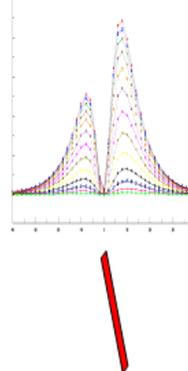
**F**



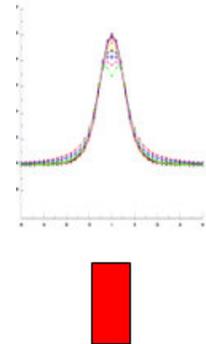
**G**



**H**



**I**



## General Modeling Concepts

A set of models has been produced for the Geotech VTEM<sup>®</sup> system with explanation notes (see models A to I above). The reader is encouraged to review these models, so as to get a general understanding of the responses as they apply to survey results. While these models do not begin to cover all possibilities, they give a general perspective on the simple and most commonly encountered anomalies.

When producing these models, a few key points were observed and are worth noting as follows:

- For near vertical and vertical plate models, the top of the conductor is always located directly under the centre low point between the two shoulders in the classic **M** shaped response.
- As the plate is positioned at an increasing depth to the top, the shoulders of the **M** shaped response, have a greater separation distance.
- When faced with choosing between a flat lying plate and a prism model to represent the target (broad response) some ambiguity is present and caution should be exercised.
- With the concentric loop system and Z-component receiver coil, virtually all types of conductors and most geometries are most always well coupled and a response is generated (see model H). Only concentric loop systems can map this type of target.

The modelling program used to generate the responses was prepared by PetRos Eikon Inc. and is one of a very few that can model a wide range of targets in a conductive half space.

## General Interpretation Principals

### Magnetics

The total magnetic intensity responses reflect major changes in the magnetite and/or other magnetic minerals content in the underlying rocks and unconsolidated overburden. Precambrian rocks have often been subjected to intense heat and pressure during structural and metamorphic events in their history. Original signatures imprinted on these rocks at the time of formation have, in most cases, been modified, resulting in low magnetic susceptibility values.

The amplitude of magnetic anomalies, relative to the regional background, helps to assist in identifying specific magnetic and non-magnetic rock units (and conductors) related to, for example, mafic flows, mafic to ultramafic intrusives, felsic intrusives, felsic volcanics and/or sediments etc. Obviously, several geological sources can produce the same magnetic response. These ambiguities can be reduced considerably if basic geological information on the area is available to the geophysical interpreter.



In addition to simple amplitude variations, the shape of the response expressed in the wave length and the symmetry or asymmetry, is used to estimate the depth, geometric parameters and magnetization of the anomaly. For example, long narrow magnetic linears usually reflect mafic flows or intrusive dyke features. Large areas with complex magnetic patterns may be produced by intrusive bodies with significant magnetization, flat lying magnetic sills or sedimentary iron formation. Local isolated circular magnetic patterns often represent plug-like igneous intrusives such as kimberlites, pegmatites or volcanic vent areas.

Because the total magnetic intensity (TMI) responses may represent two or more closely spaced bodies within a response, the second derivative of the TMI response may be helpful for distinguishing these complexities. The second derivative is most useful in mapping near surface linears and other subtle magnetic structures that are partially masked by nearby higher amplitude magnetic features. The broad zones of higher magnetic amplitude, however, are severely attenuated in the vertical derivative results. These higher amplitude zones reflect rock units having strong magnetic susceptibility signatures. For this reason, both the TMI and the second derivative maps should be evaluated together.

Theoretically, the second derivative, zero contour or colour delineates the contacts or limits of large sources with near vertical dip and shallow depth to the top. The vertical gradient map also aids in determining contact zones between rocks with a susceptibility contrast, however, different, more complicated rules of thumb apply.

### **Concentric Loop EM Systems**

Concentric systems with horizontal transmitter and receiver antennae produce much larger responses for flat lying conductors as contrasted with vertical plate-like conductors. The amount of current developing on the flat upper surface of targets having a substantial area in this dimension, are the direct result of the effective coupling angle, between the primary magnetic field and the flat surface area. One therefore, must not compare the amplitude/conductance of responses generated from flat lying bodies with those derived from near vertical plates; their ratios will be quite different for similar conductances.

Determining dip angle is very accurate for plates with dip angles greater than 30°. For angles less than 30° to 0°, the sensitivity is low and dips can not be distinguished accurately in the presence of normal survey noise levels.

A plate like body that has near vertical position will display a two shoulder, classic **M** shaped response with a distinctive separation distance between peaks for a given depth to top.

It is sometimes difficult to distinguish between responses associated with the edge effects of flat lying conductors and poorly conductive bedrock conductors. Poorly conductive bedrock conductors having low dip angles will also exhibit responses that may be interpreted as surficial overburden conductors. In some situations, the conductive response has line to line continuity and some magnetic correlation providing possible evidence that the response is related to an actual bedrock source.

The EM interpretation process used, places considerable emphasis on determining an understanding of the general conductive patterns in the area of interest. Each area has different characteristics and these can effectively guide the detailed process used.



The first stage is to determine which time gates are most descriptive of the overall conductance patterns. Maps of the time gates that represent the range of responses can be very informative.

Next, stacking the relevant channels as profiles on the flight path together with the second vertical derivative of the TMI is very helpful in revealing correlations between the EM and Magnetics.

Next, key lines can be profiled as single lines to emphasize specific characteristics of a conductor or the relationship of one conductor to another on the same line. Resistivity Depth sections can be constructed to show the relationship of conductive overburden or conductive bedrock with the conductive anomaly.



**APPENDIX B**  
**GEOPHYSICAL MAP IMAGES**  
**(not to scale)**



