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EL8/2002 AND EL10/2002 BALFOUR-TEMMA AREA

ANNUAL REPORT TO 20.12.2004

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Abstract

During the second year of tenure of EL8/2002 and EL10/2002 target areas selected during year 1 were further refined and assessed. Historical exploration data was collected, collated and interpreted and used to rank and prioritise previously defined targets for further work. A number of companies have reviewed the available data with a view to becoming involved in the project and while expressing interest no joint venture agreement has yet been signed.

Contents

	Page
Introduction	2
Review of previous work	2
Exploration completed during the reporting period	3
Discussion	4
Conclusions and Recommendations	7
Environment	8
Expenditure	8
References	8
Keywords	8

List of figures

Figure 1 Location of tenements

Figure 2 1:25,000 geology sheets overlain on regional geology

Figure 3 HEM and magnetic anomalies on total magnetic intensity image

Figure 4 HEM and magnetic anomalies on conductivity image

Introduction

This report presents the work carried out in EL8/2002 and EL10/2002 in the Balfour – Temma area during the second year of tenure to 20.12.2004. Figure 1 shows the location of the tenements.

Review of previous work

Balfour Area

The historical mining area of Balfour is outside the area of these ELs, but the style of mineralisation there is a possible exploration target within them.

Work at Balfour by ACI Limited (ACI) from 1968 until 1974 included extensive IP surveys and drilling as part of their exploration program for copper. Eight prospects were tested by drilling, and a resource of 0.5MT at 0.8% Cu was defined at Murray's Reward. Drilling at the Clump was compromised by poor core recoveries. Also, disseminated Pb-Zn mineralization was found within a quartzite in the Clump area (Westbrook, 1999).

Subsequently, CRA Exploration (CRAE) carried out EM and IP surveys, costean and auger sampling and drilling from 1995 to 1997. They found copper to be depleted above known copper occurrences and that conventional stream sediment sampling techniques were ineffective due to leaching, quartz lag cover and weakly incised drainage patterns. Similar conclusions were reached by Pacific-Nevada Mining Pty Ltd in 1999, who also undertook a helicopter EM survey over the northern end of the Balfour Copper trend and failed to find any responses coincident with the known mineralisation (Westbrook, 1999).

The ACI and CRAE drilling intersected maximum mineralised widths of 20 and 17m respectively with grades exceeding 1%Cu.

Temma Area

In the Temma area, strong magnetic responses have been investigated for both copper and gold associated with magnetite at the Nelson River, Strickland, Little Eel and Possum Creek prospects by Pickands Mather and Pacific-Nevada. There is historic copper production at Strickland, copper anomalism was confirmed at Nelson River and Little Eel Creek, and gold at Strickland and Possum Creek (Turner, 1999 and 2000).

Balfour Helicopter Electromagnetic and Magnetic Survey

In early 2002, a detailed helicopter electromagnetic survey was carried out over the Balfour and Temma areas and to the south by MRT as part of the Western Tasmanian Regional Minerals Program (WTRMP) which also included geological mapping at 1:25,000 scale. The resultant data were released in mid 2002 (Mineral Resources Tasmania, 2002), and the survey specifications are reproduced below.

Survey completed:	April 2002				
Traverse line spacing:	200 metres				
Traverse line direction:	090 / 270 degrees				
Tie line spacing:	2,000 metres approx				
Tie line direction:	000 / 180 degrees				
Survey height:	EM towed Bird at 30m agl				
Electromagnetic System	Hummingbird 5 frequency EM system				
Resolution:	1ppm				
Recording Interval:	0.1 sec (approx. 3.5 metres sampling)				
Data acquisition:	Geo Instruments Model G2002 system Geotech Hummingbird system				
Channel	1	2	3	4	5
Freq (Hz)	7000	6600	980	880	34000
Orientation	CX	CP	CX	CP	CP
Coil Sep (m)	6.25	6.25	6.03	6.03	4.79
Aircraft:	AeroSpatale Squirrel helicopter AS350BA				
Magnetometer					
Type:	Geometrics G822A Caesium vapour				
Resolution:	0.001 nT				
Recording interval:	0.1 sec (approx. 3.5 metres sampling)				
Installation:	Magnetometer sensor mounted in HEM bird.				
Navigation					
Flight path navigation:	Real time satellite Differential GPS system				
Navigation equipment:	Fugro OMNISTAR GPS receivers				
Flight path record:	WGS84 Easting/ Northing coordinates				
Radar altimeter:	Collins Alt50				
GPS base station locations:	Fugro OMNISTAR(Real Time DGPS)				

Exploration completed during the reporting period

All available historical exploration data was collected, compiled and interpreted. Targets selected during year 1 were assessed in light of this data and prioritised for follow-up.

Information used in the assessment included the following:

- Raw and interpreted airborne magnetic and radiometric data – Bishop, Feb 2003
- Raw and final airborne electromagnetic data - Mineral Resources Tasmania, July 2002
- Assessment of geophysical data – Jenke, Southern Geoscience Consultants, May 2003
- Digital data sets – geology, geophysics, stream, rock chip, drilling and mineral occurrence data bases - Department Mineral Resources Tasmania
- Comments of follow up of Temma Targets by University of Tasmania – January 2004

- Previous exploration data – open file reports from Mineral Resources Tasmania
 - o Report 00-4500, The Strickland Drilling Program July 2000 – EL27/1977, Newnham Exploration and Mining Services, Pacific Nevada Mining Proprietary Limited, 28/8/2000
 - o Report 99-4346, Report on Exploration Activity 10/7/98-10/7/99 – EL 4/98 Balfour, Pacific Nevada Mining Proprietary Limited, 30/6/1999
 - o Report 99-4385, Annual Report to 5/11/99 - EL15/97 – Arthur River, Pacific Nevada Mining Proprietary Limited, Turner Geological Services, 20/10/1999
 - o Report 82-1721, CRA Exploration Proprietary Limited, Geopeko Limited – EL1/1977, 1/1/1982
 - o Report 70-642, Report in the Pending Exploration Licence Northwest Tasmania, Hall, Relph and Associates Pty Ltd, 10/6/1970
 - o Summary report only 01-4570, Relinquishment Report EL4/1998 Balfour, Newnham Exploration and Mining Services, Pacific Nevada Mining Proprietary Limited, 1/6/2001
 - o Summary report only 01-4588, Relinquishment Report – EL27/97 – Temma Area, Newnham Exploration and Mining Services, Pacific Nevada Limited Partnership, 27/1/2001

Discussion

Graham Jenke of Southern Geoscience Consultants correctly concluded that the advantage for Ausvaal Projects Pty Ltd (Ausvaal) lay in using the recently acquired high-resolution electromagnetic (EM) and magnetic data to define geophysical anomalies that could potentially represent massive sulphide accumulations and hence economic mineralisation. Recently published geological data could provide a useful mechanism to select and rank geophysical targets for further work. In this respect Ausvaal is considered to have a significant competitive advantage in the area. While not undertaking detailed reprocessing and reinterpretation of raw geophysical data, Jenke did select and prioritise a number of magnetic and electromagnetic targets for further consideration. EM targets are based on the principle that discrete bedrock conductors could represent massive sulphide accumulations and those associated with magnetite could represent sources that include pyrrhotite. Standalone magnetic targets are based on known Fe-Cu-Au associations in the Temma area. Targets selected include:

- Two EM (conductors) Cu targets E & NE of the Balfour Mineralised Trend;
- Ten Magnetic Cu-Au targets in Temma Area;
- Five EM (conductors) base metal targets without magnetic associations south of Temma; and
- Three EM (conductors) Base metal? targets in the South Central Area.

Original target selection, prioritisation and ranking carried out by Mineral Resources Tasmania and Southern Geoscience Consultants did not include detailed modeling. Such work would be useful in looking at “stratigraphic” vs “other” conductors, conductance characteristics, attitude and depth to top of the anomalies.

The approach adopted by Ausvaal was to look at targets defined to date in more detail using available historical exploration and geology in the context of specific genetic models and to comment on them as to their probable cause and potential to deliver economic mineralisation. Comment are given as to what further action is required to assess targets. Mineral Resource Tasmania – soils, rock chip and drill databases are incomplete and

therefore could not be used with any degree of certainty to assess whether targets have been adequately tested. Open file reports have been used to assess previous exploration and while not complete do give some idea of historical work and results.

Balfour Area

- **B1** (EM/Mag) 3km SE of Balfour mine. Significant EM anomaly >1km strike, a portion is coincident with a magnetic anomaly, it has been interpreted by Jenke to be pyrrhotite rather than graphite.
Comment: The EM anomaly >2km and looks geological and is associated with part of a folded stratigraphic sequence containing carbonaceous units. The magnetic feature appears to be unrelated and is associated with a major mapped thrust. The area is well drained and appears to have good access. While this anomaly appears to be stratigraphic field checking is required. Historical data, especially stream sediment data, needs to be plotted. The EM data needs to be remodeled and a small, unnamed mineral occurrence just to north of the conductor needs to be field checked. Moderate priority.
- **B2** (EM) significant EM anomaly >1km long.
Comment: The area in which the anomaly occurs was covered by the Pacific Nevada Mag-EM survey carried out in 1998. Some rock chip sampling was undertaken on a magnetic anomaly to the south of the conductor. Anomalies in stream sediment samples draining from the catchment containing the anomaly require follow-up. While the cause of the EM anomaly is probably stratigraphic it needs to be field checked. EM data needs to be remodeled. Moderate priority.

Central Area

- **C1** (EM), **C2** (EM/Mag) short strike length conductive responses, a number of which are associated with magnetic anomalies. These conductors occur within what would appear to be a resistive quartzite.
Comment: The conductors are located within the Lagoon Quartzite possibly close to contact. The unit is known to include rare conglomerate and carbonaceous shale lenses. There is no known mineralisation in the area. The conductors are fairly discrete and may be structurally controlled. While possibly stratigraphic in nature the lack of systematic work and fairly discrete nature of the EM anomalies warrant further EM modeling and field checking. Low priority.
- **C3** (EM) part of more subtle NNW trending EM ridge.
Comment: While it is probable that the source is stratigraphic. There appears to have been very little previous work. The EM needs to be remodeled and the anomaly field checked. Low priority.

Temma Area

- **T1** (EM/Mag) partly associated with a known prospect – Section 4279 Dawsons Creek (Fe - no further details)
Comments: The magnetic anomaly appears to be known about and have been explored in the past. There may be parts of the system that require further work but more information is required. The location and geometry of the EM conductor should be ascertained and viewed in context of previous exploration. The EM anomaly if real may represent a more sulphide rich part of the system. The Fe-oxide Cu-Au model should be explored further especially in light of recent advances in the understanding of such systems. High priority.

- **T2 (Mag)** partly associated with a known prospect - Possum Creek (Cu, Fe, Ag)
Comments: The magnetic anomaly appears to be known about and have been explored in the past. There may be parts of the system that require further work but more information is required. Once again the Fe-oxide Cu-Au model should be explored further especially in light of recent advances in the understanding of such systems. Moderate priority.
- **T3 (Mag)** partly associated with a known prospect - No Mans Creek 9 (Cu, Fe)
Comments: as for T2. Moderate priority.
- **T4 (Mag)** near a known prospect - Little Eel (Cu, Fe, Ag)
Comment: From the regional data set there appears to be a drill hole very close to the anomaly and a mineral occurrence approximately 300m to the east of the anomaly – (location problem?). As above and check location of drilling and mineral occurrence. As for T2. Moderate priority.
- **T5 (Mag/EM)**
Comment: located on coast – at end of road – possible infrastructure, no known prospect or cause. Requires a review of historical data and field checking. Moderate-Low priority.
- **T6 (Mag)**
Comment: located on coast – at end of road – possible infrastructure, no known prospect or cause. Requires a review of historical data and field checking. Moderate-Low priority.
- **T7 (Mag)** associated with known prospect – Strickland (Fe, Cu, Sn)
Comments: as for T2. Moderate priority.
- **T8 (Mag/EM)** regional EM possible associated/cause basalt contact.
Comments: students from University of Tasmania conducted ground EM – no conductor located and heli-EM conductor ascribed to basalt. Magnetic anomaly parallel to Strickland is still prospective and requires further work. Moderate priority.
- **T9 (EM)**
Comment: unknown source. Requires remodeling of EM data, historic data and field checking. Low priority.
- **T10 (EM/Mag)** ascribed to geological edge of mapped basalt.
Comment: Does not require any further work. Low priority.
- **T11 (Mag)**
Comment: located 600m west of a known prospect - Rebecca (Cu, Fe, Pb). The location of both anomaly and prospects needs to be checked. As for T2. Moderate priority.
- **T12 (Mag/EM)** recently defined by University of Tasmania.
Comment: located outside tenement on coast. Close to the abandoned Couta Mine and may represent the northern extent of Cu vein system at Couta Mine? Details of the mine and work around the mine are scant and further research is needed. The Mag and EM needs to be modeled, precise location and geometry established and this looked at in association with previous exploration data. The area needs to be field checked. The presence of the EM anomaly may represent sulphide accumulations. High priority.
- **T13 (Mag)**
Comment: located on interpreted fault and geological contact. Probably stratigraphic but needs field checking. Low priority.
- **T14 & T15 (EM)** possible topographic effect – Jenke.
Comment: Appears to be stratigraphic or near surface topographic. Require remodeling and field checking. Low priority.

- **T16** (EM) possible topographic effect – Jenke.
Comment: Appears to be stratigraphic or near surface topographic. Require modeling and field checking. Low priority.
- **T17** (EM)
Comment: appears to be located close to or on a geological contact. Requires EM modelling and field checking. Low priority.
- **T18** (EM) possibly topographic effect.
Comment: Appears to be stratigraphic or near surface topographic. Require modeling and field checking. Low priority.

In many cases field checking will be sufficient to determine whether the anomaly is worth follow-up and will also be useful in determining follow-up strategy. A number of anomalies have obviously been explored in the past and while previous attempts have been unsuccessful in locating economic mineralisation, gold and base metal anomalism associated with some of the Temma targets are considered encouraging. The presence of EM conductors associated with magnetic anomalies in the Temma regions should be investigated more carefully, ground EM may be required to locate and model conductors. Previous explorers have cast doubt on the effectiveness of surface sampling techniques especially in terms of gold (near surface depletion) but using a well-considered multi element stream sediment sampling technique, especially in inaccessible areas on lower priority targets, should still be effective.

Conclusions and Recommendations

Genetic models for mineralisation have not been defined in detail but would include:

- Structurally controlled Cu mineralisation within Proterozoic sediments, e.g. Balfour – mineralised NNW structures. Paleozoic mineralisation is proposed to be associated with the contact aureole of a Paleozoic intrusion.
- Structurally controlled Fe-oxide hosted Cu-Au mineralisation within Proterozoic sediments.
- Strataform base metal mineralisation within Proterozoic Sediments.

The following issues while not negating the targeting methodology must obviously be taken into account when ranking and prioritising targets.

- A reasonable amount of exploration has been carried out in the past 30 years, this work has included: rock chip, soils and stream sediment sampling; magnetic, IP, EM geophysical surveys and drilling under and along strike from old workings. Results while not having returned economic mineralisation have returned a number of interesting anomalies.
- Fe-oxide Cu-Au mineralisation was originally located in the Temma area using magnetic data and subsequent exploration was carried out using high-resolution airborne and ground magnetic techniques. The new magnetic data adds little in this respect but the EM data has highlighted a number of separate and associated conductors that require follow-up.
- While logical that massive sulphides will have a significant EM response, known mineralisation in the Balfour area (with exception of “The Clump”) does not appear to be associated with significant EM anomalism.
- A number of EM anomalies in the Balfour area have been attributed to and are associated with geological units e.g. carbonaceous unit (in places containing up to 40% graphite).

Environment

No ground activities were carried out during the year.

Expenditure

Geology	\$27,000
Geophysics	\$ 2,716
Other	\$ -
Admin (10%)	\$ 7,200
	<u>\$36,916</u>

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Summary report only 01-4588, Relinquishment Report – EL27/97 – Temma Area, Newham Exploration and Mining Services, Pacific Nevada Limited Partnership, 27/1/2001

Keywords

Balfour, Temma, copper, gold, airborne electromagnetic surveys, airborne magnetic surveys.

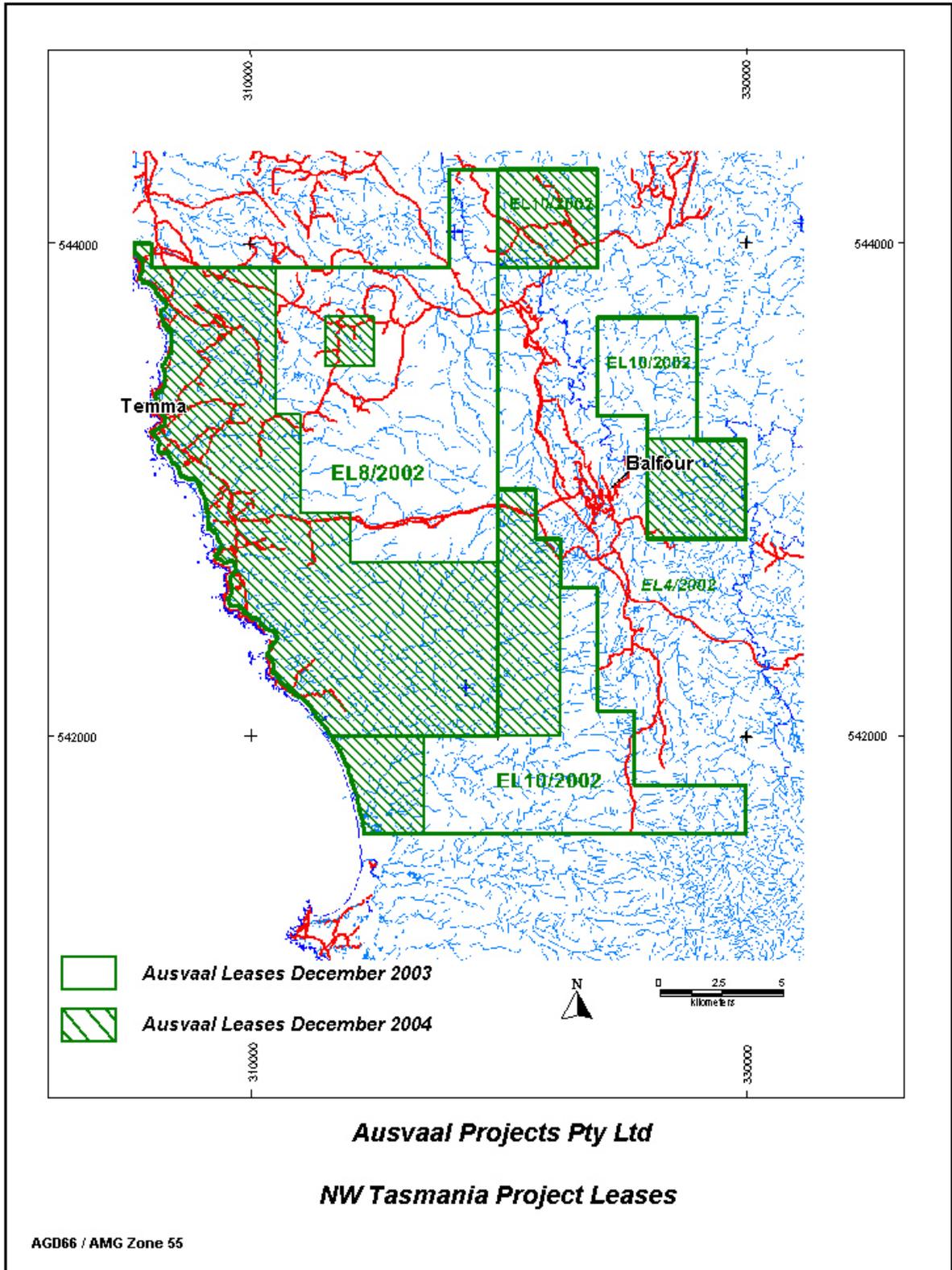


Figure 1 Location map on topography

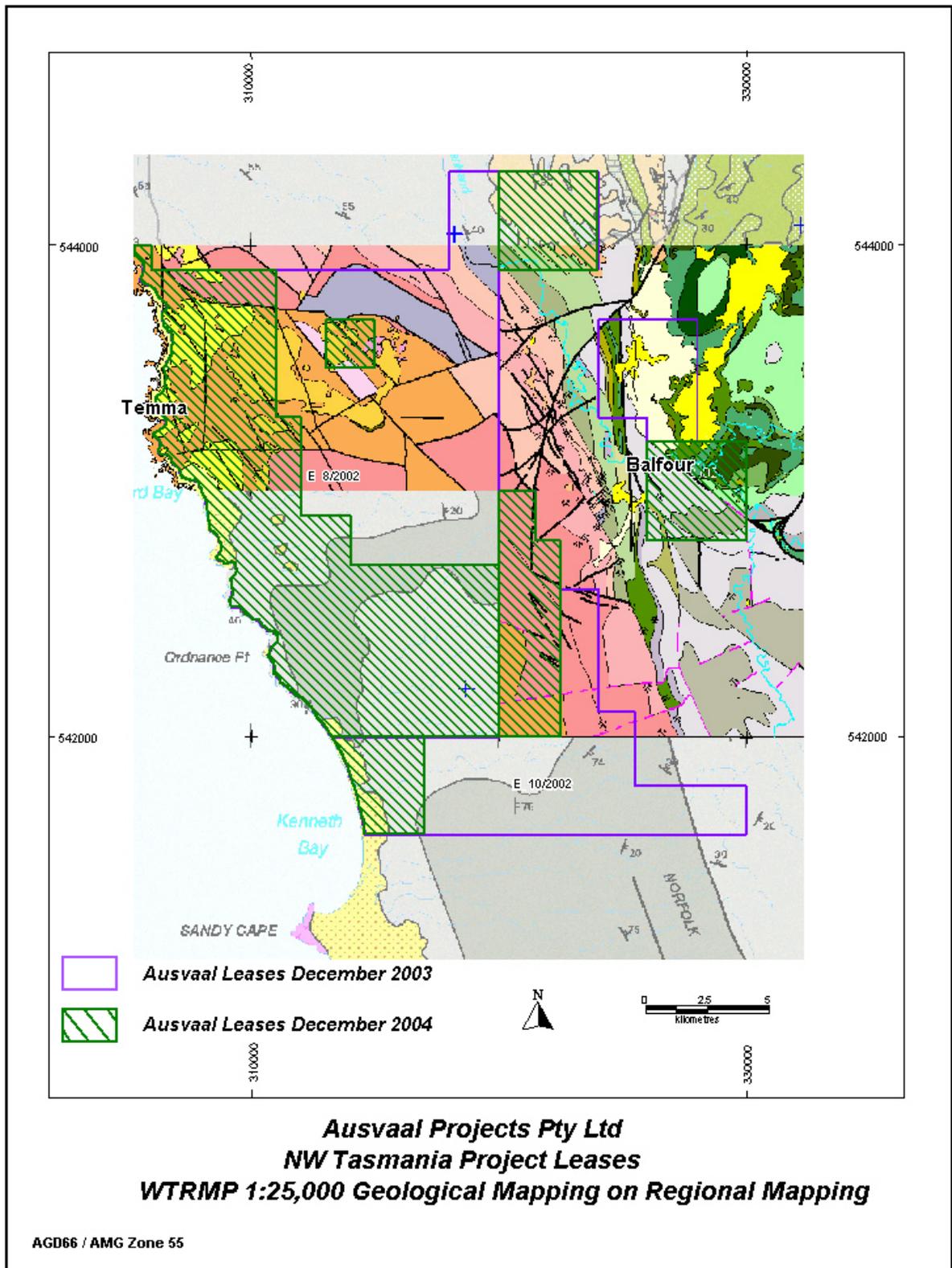


Figure 2 1:25,000 geology sheets overlain on regional geology

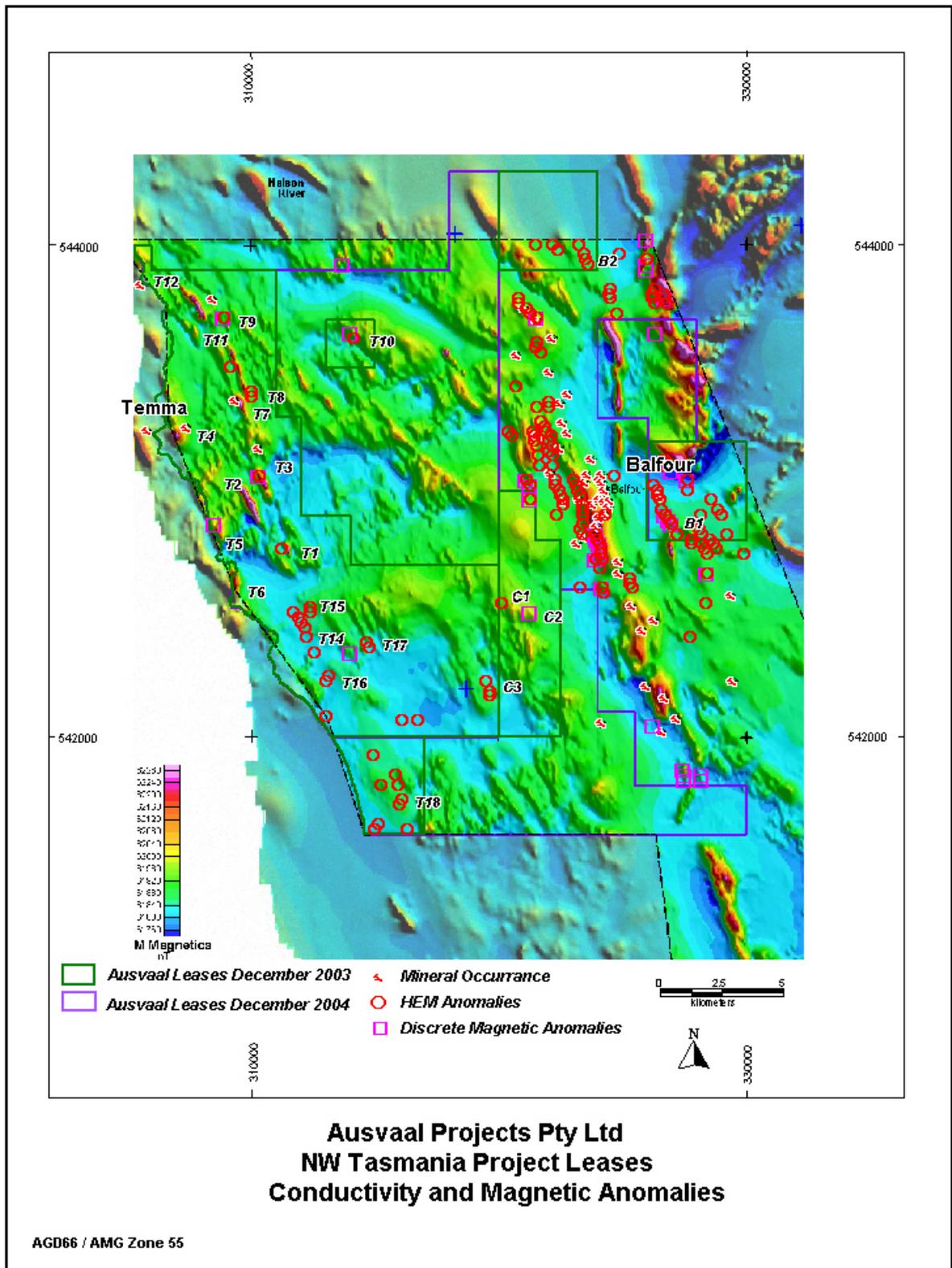


Figure 3 Total magnetic intensity image and HEM and magnetic anomalies - Balfour and Temma leases

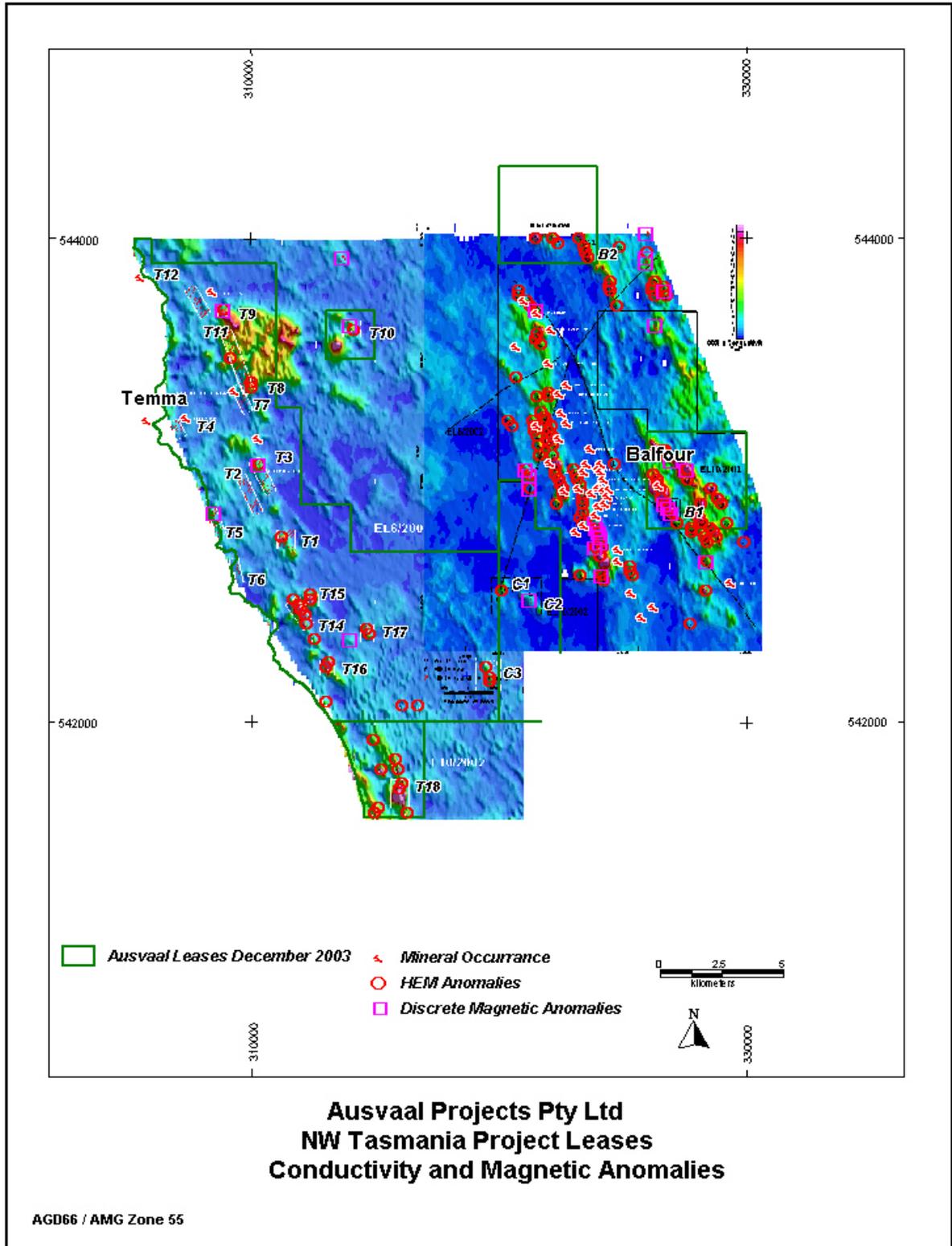


Figure 4 Conductivity image with and HEM and magnetic anomalies - Balfour and Temma leases