

ASF RESOURCES PTY LTD  
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**TASMANIA**  
**LAKE PIEMAN PROJECT**  
EXPLORATION LICENCES: EL 15 /2007

**1<sup>ST</sup> ANNUAL TECHNICAL REPORT**  
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Copies

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## 1. Summary

During the first year of grant for EL 15/2007 (Lake Pieman Project) ASF Resources contracted the services of Swensson Integrated Natural Resource Management Services (SRM) to prepare an Independent Technical Report on two projects in within the Mount Read Arc in Western Tasmania one of which is the Mount Dundas Project. In addition to a geological and mineralisation overview of the project SRM compiled all historical exploration in a separate report.

Alan Humphris of ASF carried out a brief review of the Independent Technical Report before discussions with representatives of Dong Di Kan Mining (China) who visited the project over a period of two days.

**Keywords:** Zeehan, Roseberry, Queenstown Mount Dundas, Hellyer, Que River, Henty, Renison Bell, Mount Read Volcanics, Tyennan Block, Dundas Trough, Oonah Formation, Togari Group, Tyndall Group, Owen Group, Cu, Pb, Zn, Sn, Au

## 2. Introduction

The tenement is located in the highly mineralized Paleozoic Dundas Trough on the West Coast of Tasmania. The region is host to a number of significant Cambrian age volcanogenic base metal and gold deposits (Hellyer, Que River, and Henty (?)), porphyry associated copper-gold deposits (Mt. Lyell) and numerous epigenetic deposits associated with Devonian granite intrusions including tin, lead - silver and skarn tin/zinc deposits (Mt. Bischoff, Cleveland, Renison Bell, Razorback, and Oceana).

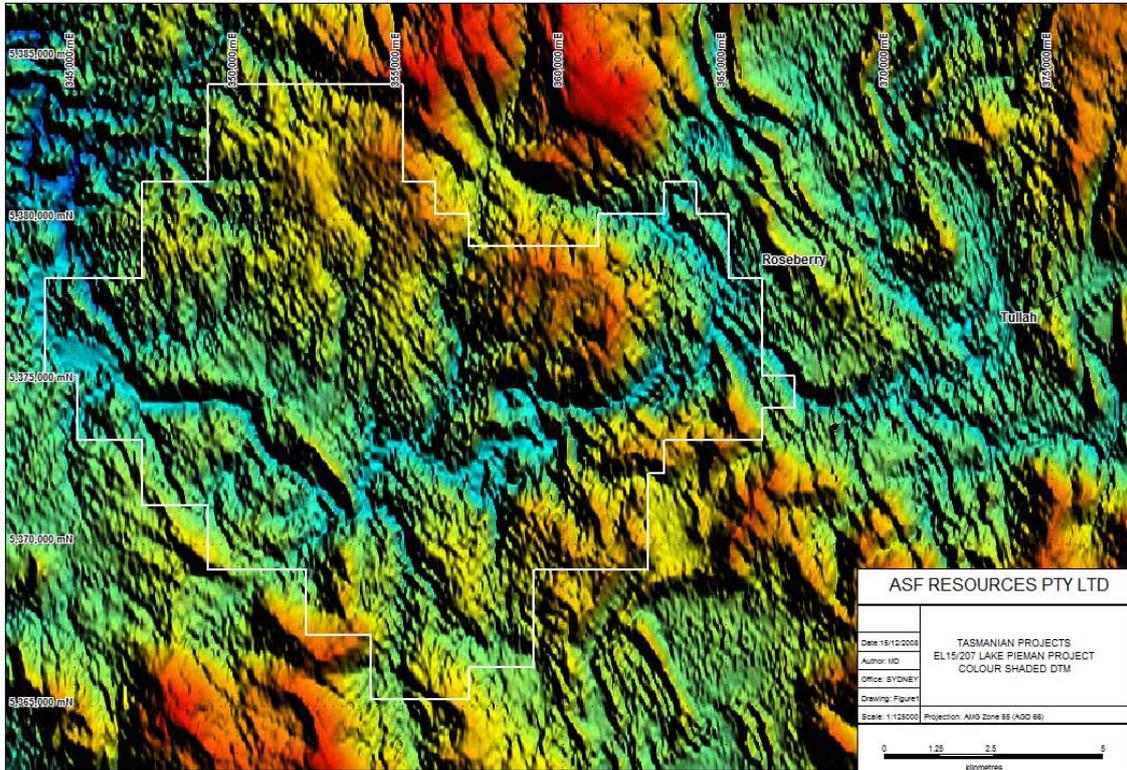
The region has been subjected to extensive exploration in the past with exploration based primarily on a volcanogenic model for base metal mineralisation in the Mt. Read Volcanics. "Modern" exploration has been undertaken from the late 1950's to the mid to late 1990's and includes a large amount of ground and airborne geophysics.

ASF Resources will be actively exploring for precious, base metals and iron in the south-west of Tasmania in the vicinity of the Zeehan, Queenstown and Roseberry Mining Centres.

## 3. Location and Access

The Lake Pieman Project is located approximately 15km west of Renison Bell tin mine. Lake Pieman, a narrow lake on the Pieman River, runs through the EL. Access north and south of the lake through the tenement is via a sealed road from Zeehan on to Granville Harbour and west from Tullah on the Pieman Dam road. However access through most of the tenement is limited due to the steep topography of the Pieman Valley.

Figure 1: Tenement Location Map with DTM backdrop 1:125,000



## 4. Tenure

The Lake Pieman Project comprises one granted exploration licence (**Table 1**) which was granted to ASF Resources on the 23/07/2007.

**Table 1 Tenement Register**

Tenement	Area (km <sup>2</sup> )	Grant Date	Final Date	Expenditure Commitment
EL15/2007	250	23/07/2007	23/07/2012	\$125,000

## 5. Regional Geology and Mineralisation

### 5.1 Regional Geology

The oldest rocks in the region are the Meso to Neoproterozoic quartzitic rocks of the Tyennan Block which provide basement to the younger sequences in western Tasmania. In the area of interest the Tyennan Group is overlain by the quartzwacke turbidite rocks of the Oonah Formation (100-750Ma) which were deposited in an N-S trending basin which was probably the precursor to the later Dundas Trough. The upper sequence of the Oonah Formation is dominated by pelites and/or carbonates with some mafic rocks and conglomerates. This part of the sequence provides an important host to vein, skarn and replacement tin deposits at Zeehan and Mt Bischoff.

The Oonah Formation is disconformably or unconformably overlain by the Success Creek and Crimson Creek Groups of the Togari Group of Neoproterozoic to Cambrian age (750-520Ma). Within the project area these rocks tend to comprise a lower sequence of dolomitic shallow water sediments resting on basal conglomeratic sandstone followed by upper mafic rift volcanic and associated volcanoclastic sediments. The lower dolomitic sequence is an important host to the tin replacement deposits of Renison Bell.

The above sequence was subjected to a number of major deformations during the Tyennan Orogeny commencing with the south directed compression (515-510Ma) followed by E-W compression from Middle Cambrian which produced the linear narrow Dundas Trough. The Dundas trough was an important depositional site for the Mount Read Volcanics and associated sediments and their polymetallic mineralisation.

The Mount Read Volcanics (MRV) is divided into three sequences. The Central Volcanic Sequence (CVS) is comprised of marine, proximal volcanics consisting of rhyolite and dacite domes and cryptodomes, massive pumice breccias, andesites and rare basalts. The CVS is host to most of the polymetallic volcanogenic hosted mineralisation in the Dundas Trough ie Hellyer, Que River and Rosebery. The CVS interfingers with the Western Volcano-Sedimentary Sequence to the west comprised of lithicwacke, turbidites,

mudstones, siltstones, shale with subordinate intrusive rocks and lavas. The CVS inter fingers with the Eastern Quartz Phyric Sequence (EQPS) to the east, comprised of quartz phyric lavas, intrusive porphyries and volcanoclastics intruded by magnetite series granite.

The MRV on the Western side of the Dundas Trough is overlain by the Tyndall Group of quartz bearing volcanoclastic sandstone and conglomerates of mixed felsic and andesitic provenance. Some workers (Seymour et al 2007) have suggested that the Tyndall Group is a time correlate of the EQPS to the east.

In the late Cambrian - Lower Ordovician, a period of E-W compression caused basin inversion of the Dundas Trough, resulting in uplift of the Tyrennan Block to the west and subsequent deposition of the Owen Group conglomerate in a half graben on the western side of the Dundas Trough. Basin inversion also caused reactivation of the major faults in the Dundas Trough.

In the Middle Devonian, Tasmania was affected by polyphase deformation, attendant folding and intrusion by major I-type granite batholiths. In the west most of the intrusions post date the folding event and are represented by reduced, moderately to strongly fractionated I-type granite.

## 5.2 Regional Mineralisation

The rocks of the Dundas Trough are host to significant polymetallic (Pb,Zn,Cu,Sn,Ag,Au) mineralisation including:

- Mt Lyell - 311Mt @ 0.97%Cu and 0.31g/t Au
- Rosebery - 34.03Mt @ 13.8%Zn, 4.1%Pb, 0.57%Cu, 143g/t Ag and 2.2g/t Au
- Hellyer - 16.5Mt @ 13.9%Zn, 7.2%Pb, 169g/t Ag and 2.55g/t Au

Mineralisation can be broadly classified into two associations.

1. Base metal and gold mineralisation related to volcanogenic processes associated with the emplacement of the MRV rocks, particularly the CVS, during the middle to late Cambrian.
2. Epigenetic Zn, Cu, Sn, Pb and Ag mineralisation associated with the intrusion of the Devonian Granites.

While it is generally accepted that the polymetallic mineralisation in the MRV is volcanogenic in nature, this has been questioned on the basis of observations that much of this mineralisation (eg Rosebery, Hercules) was emplaced subsequent to the main cleavage forming event and controlled by the interplay of cleavage and bedding in pure shear zones associated with carbonate altered lithologies (Dr. M. Tomkinson per.com.). If true then this model implies that lithologies in such settings outside the CVS may be prospective. Prior exploration has concentrated on the CVS based on a volcanogenic model. The Henty

Fault, reactivated during the Tyennan Orogeny tends to divide mineralisation of a Zn-Pb-Cu-Au volcanogenic association to the NW of the fault from a Cu-Au-Fe association to the SE of the fault. The Henty gold mine (2.83Mt @ 12.5g/t Au) is unusual for the region, being a gold only deposit located within the Henty Fault. The Devonian granites have mineralized a broad range of lithologies, generally close to and within the contact aureoles of the batholiths. Mineralisation is represented by simple high angle veins (Pb, Ag, Zn, Sn), skarn (Zn, Sn) and replacement bodies (Sn) which have resulted in some significant deposits such as Renison Bell (24.54Mt @ 1.41%Sn), Mt. Bischoff (10.54Mt @ 1.1%Sn) and Ocean (2.6Mt @ 7.7%Pb, 2.5%Zn, 55g/t Ag). The larger granite related deposits tend to be associated with reactive and or replaceable host rocks, usually carbonates.

## 6. Previous Exploration

An initial search of previous exploration reports produced 102 references from Mineral Resources Tasmania data base. However a cursory scan of this material indicates that most prior exploration was to the south and east of the tenement area. Except for some engineering drilling by the HEC at Pieman Dam, no exploration drill holes are recorded for the tenement application area.

## 7. Current Exploration

In the current reporting period a full review of the geological setting and mineralisation styles within EL14/2007 was carried out by Carl Swensson of SRM and a large portion of this report is based on work completed by Carl. As part of Carl's work he contracted Dianne Lewis to summarise all historical exploration held within the MRT office in Hobart and make appropriate copies of the historical reports.

Alan Humphris of ASFR Resources carried out a brief in house review of the project prior to a meeting with representatives of Shan Dong Di Kan Mining (China) who later visited the project with ASF Resources personnel over a period of a few days.

## 8. Conclusions and Recommendations

A complete review of previous exploration will be completed with systematic compilation of relevant data onto a GIS data base. All available digital data will be assembled in Mapinfo with a view to target selection followed by all or some of the following exploration programs dependant on the available time during the field season.

- Implementation of a stream sediment sampling program for precious and base metals to 1) follow up existing geochemical anomalies and 2) complete the stream sediment coverage

over recently defined target areas. In conjunction with the stream sediment sampling outcrop and float geological mapping will be carried out.

- Follow up of any stream sediment anomalies using 500x500m soil sampling for precious and base metals.
- Grid soil sampling on 100x25m over any anomalies defined from the initial soil program.

## 9. Expenditure

The annual expenditure incurred for EL 14/2007 for the year ending 22<sup>nd</sup> July 2008 was \$16,213 with a breakdown of expenditure shown below.

**Table 2 Expenditure Statement**

Cost Centres	Expenditure Incurred
Geoscientific (Geology)	\$30,121
Feasability Study(Marketing Visit)	\$1,860
Other Costs(Rental)	\$5,280
Administration	\$12,500
<b>TOTAL</b>	<b>\$49,761</b>

Total expenditure since inception of EL15/2007 is \$49,761

## 10. References

Crossing, D.J.F., E.L. 101/87 Dundas and E.L. 13/88 Moores Pimple Partial Relinquishment Report for the Period 1988 to 1992. RGC Exploration Report M.R.T. Open File Report 92-3358.

Seymour, D.B., Green, G.R., Calver,C.R, 2007. The Geology and Mineral Deposits of Tasmania: a Summary. Geological Survey Bulletin 72, Mineral Resources Tasmania.