

Copper Mines of Tasmania Pty Ltd

Exploration Licence 16/1998 – Mt Darwin

Report for the period ending 3rd September 2000

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16/1998 - Mt Darwin
Copper Mines of Tasmania P/L*
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EXECUTIVE SUMMARY

Mt Darwin EL 16/1998 lies within the Mount Read Volcanics, a belt of highly prospective ground containing most of the major western Tasmanian ore deposits. Exploration-related activity in the licence dates back to the turn of the century with several historic workings being present in the area.

Modern exploration dates to the 1950s, has been regional in nature rather than detailed, and has not identified any prospects that call for obvious and detailed follow up investigation. Major geophysical surveys have been completed over various parts of the licence. Comprehensive geochemistry has been constrained by rugged topography. Drilling within the licence has not been significant, is generally poorly recorded, and has been limited to known prospects.

The area is considered to be prospective for copper-gold and gold style deposits analogous to the Mt Lyell mineral field. In this respect the largely neglected potential belt of Tyndall Group and Eastern Sequence rocks on the eastern side of the EL is considered to be highly prospective.

No work has been done on the EL over the period under review. In 1998 Mt Lyell Mining Ltd., the parent company to Copper Mines of Tasmania Pty Ltd (CMT) went into voluntary Administration. The subsequent purchase of CMT by the Sterlite Group, through its associate company Twin Star Holdings Pty Ltd, called for an emphasis on mine lease (ML 1/95) activities, and specifically cost-effective mining of the Prince Lyell orebody. The Minister granted an *Exemption From Conditions* on all CMT-held exploration licences for the period 1st April 1999 to 30th March 2001. Consequently no exploration has been carried out on any of the CMT Exploration Licences since the end of 1998.

This report sets out proposed exploration on EL 16/1998 that is statutorily required to start at the end of the exemption period. The proposed programme is under review and to be confirmed closer to the expiry date of the exemption period.

INTRODUCTION

Exploration licence EL 16/1998 has been held by Copper Mines of Tasmania since September 1998. The licence area is located south of Queenstown to the west of Lake Burbury and encompasses Conglomerate Peak and Mount Darwin which are part of the West Coast Range.

The EL is bounded to the north and northwest by another EL held by CMT (EL 5/1998 - Queenstown), and this licence in turn is bounded to the north by Mt Lyell mine lease (ML 1M/95). These two licences form part of a coherent block targeted as part of the overall CMT exploration strategy.

Subsequent to financial difficulties and appointment of an Administrator to Mt Lyell Mining Ltd in December 1998, CMT under the ownership of the Sterlite Group was granted an *Exemption From Conditions* by the Minister. Hence no work has been carried out on EL 16/1998 over the reporting period. This exemption is due to expire on 30th March 2001.

This report reviews the status and prospectivity of the EL and provides details of proposed exploration which is due to continue as from 31st March 2001. The proposed programme is still under review and is to be confirmed closer to the expiry date of the exemption period.

LAND TENURE

EL 16/1998 is a 60 km² block located 15 km south of Queenstown. The licence was awarded to Copper Mines of Tasmania in September 1998. The original expiry date of 04 September 2003 has been extended to 04th September 2005 as a consequence of the two year exemption approved by the Minister.

The licence is bounded in the southeast by the Franklin-Gordon Wild rivers National park. Any work within the South-West Conservation Area which encompasses the licence requires consent from the mineral Exploration Working Group (MWEG) through MRT.

Vehicle access from Queenstown to the eastern portion of the licence is via the sealed road alongside Lake Burbury and thence along the unsealed road that leads to the Franklin river. This road roughly parallels the eastern boundary of the EL. Old exploration tracks and cut lines to some of the historical prospects are still passable. Otherwise access to the remainder of licence is limited and variable, being constrained by dense vegetation and steep topography.

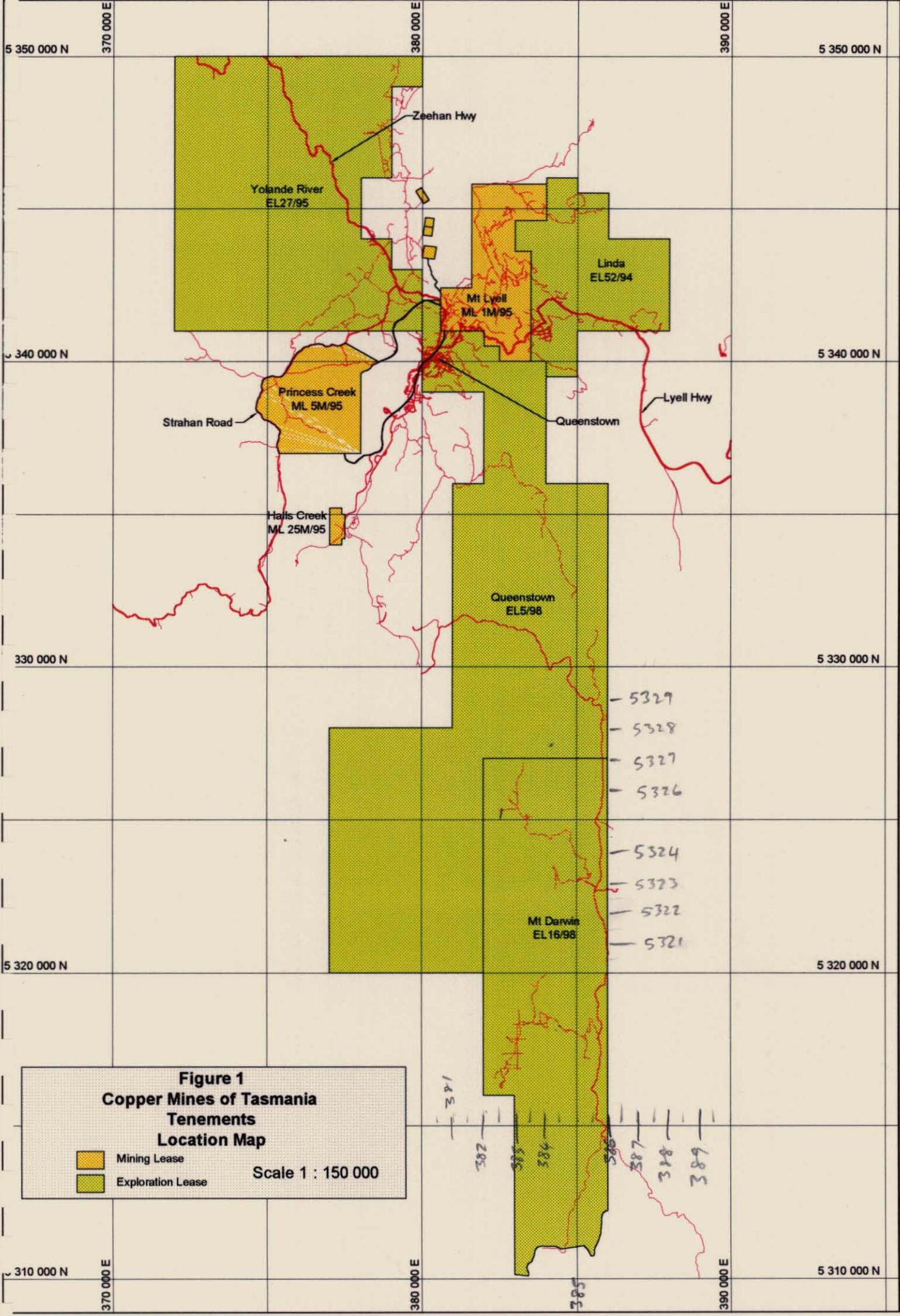


Figure 1
Copper Mines of Tasmania
Tenements
Location Map

Mining Lease
 Exploration Lease

Scale 1 : 150 000

5 cm

CMT EXPLORATION PHILOSOPHY

CMT's base exploration philosophy is to maximise the potential for finding Mt Lyell style copper-gold deposits that are economic to mine. This can be achieved by:

- developing an understanding of the geological controls on ore location
- applying a successful mix of modern exploration techniques (e.g. geophysics such as CSAMT, geochemistry such as MMI) accompanied by detailed geological interpretation (e.g. alteration mapping, structural delineation)
- maximising benefits of existing land use zoning, infrastructure and contractors in the Queenstown region

Through a regional strategy the area of interest to CMT lies between the Henty Fault system and Macquarie Harbour, especially areas of major structure with probable Cambrian movement. Logistical factors are considered by CMT to have been traditionally underrated in terms of their impact on threshold tonnage and grade values for orebody definition. Thus ground south of Macquarie Harbour, although considered geologically favourable and highly prospective, will incur high exploration costs that substantially increase investment risk and which would not currently be cost effective to CMT.

Concepts of how mineralisation is formed are important for exploration. Contiguous mineralisation within the Mount Read Volcanics makes stratigraphic position crucial to the success of any exploration efforts. Mt Lyell, Henty and Rosebery deposits are all located at or very near the CVC/Tyndall Group contact or their time equivalents in deep (Rosebery) or shallow (Henty) water facies. Any indication of mineralisation at such positions is important.

The discovery of a Mt Lyell analogue at Garfield (to the immediate west of the Mt Darwin EL) after the area was seemingly sterilised for VMS deposits is very encouraging (Halley *et al.*) Suite II andesites (Crawford *et al.*) stratigraphically near the top of the CVC and known to host some Mt Lyell orebodies, were shown by RGC to also occur near the top of the Yolande River Sequence at Garfield. A deep leach, non-digest method of soil geochemistry such as mobile metal ion (MMI) should be effective in detecting subtle geochemical anomalies above deeper buried mineralisation such as Garfield. Similarly, application of geophysical techniques should be extremely useful in stratigraphic delineation of the Tyndall Group rock types that have the potential to host typical CVC mineralisation.

REGIONAL GEOLOGY

The north-south striking Mount Read Volcanics (MRV) dominate the EL. All subdivisions of the MRV are present in the area. Owen Conglomerate occurs to the south, east and northeast.

The central portion, including Mt Darwin, comprises the Central Volcanic Complex (CVC) rhyolites, in part intruded by the Darwin Granite. The Western Sequence, composed of intermixed volcanoclastics and porphyritic volcanics is a correlate with the Yolande River Sequence northwest of Queenstown. East of the CVC rocks Quartz Phyric Eastern Sequence volcanics are partly overlain by Tyndall Group volcanoclastics. The exact distribution and contact relationship between Tyndall Group, Eastern Sequence and CVC rocks calls for more detailed mapping in the eastern part of the tenement. It is likely that the southern extensions to the Great Lyell Fault structure strike north-south through the eastern part of the licence area and are partly covered by Tyndall Group volcanoclastics and Owen Conglomerate clastic sedimentary rocks.

The CVC rhyolites are characterised by extensive pink potassic alteration and localised zones of chlorite-sericite \pm pyrite-chalcopyrite alteration with quartz magnetite hematite \pm tourmaline \pm barite veining. The alteration is generally attributed to the granite intrusives but the relationship has not been proven.

EXPLORATION STRATEGY

The exploration model proposed involves the detection/identification copper - gold or gold ore deposits at the stratigraphic base of the Tyndall Group, against the southern extension to the Great Lyell Fault. Mineralisation is likely to be blind (depending on structure) but reasonably close to the surface.

Exploration will require road and grid based mapping, petrology and geochemistry, plus airborne and ground geophysics. Aeromagnetic data from previous explorers will need to be interpreted. Aerial photographs and Landsat TM data will assist in delineating structures and rock types.

Broadly the exploration strategy entails:-

- Identification of prospective Tyndall lithologies through reconnaissance and more detailed mapping in selected areas.
- Interpretation of aeromagnetic data.
- Identification of historical prospects and their assessment using contemporary techniques and applications.
- Use of Landsat TM and aerial photography.
- Review and processing of available geochemical data.
- Application of geophysical and geochemical methods as appropriate.
- Interpretation of geology and structure.
- Identification of prospective areas through conceptual ore genesis modeling.
- Generation of targets.

This strategy will be implemented over the forthcoming periods. It is most likely to extend across two or more yearly reporting periods.

PROPOSED PROGRAMME AND EXPENDITURE

The proposed exploration programme is intended to focus on the prospective Tyndall Group rock types on the eastern side of the EL. Additionally, historic prospects need to be reviewed in the light of modern exploration techniques. Findings from these will guide work in future years. The proposed programme is still under review and will be confirmed closer to the expiry date of the exemption period.

Costs to date (i.e. up to 31st December 1998) amount to \$ 6,206 with most of this being administrative overheads, rental payments and some preliminary review work.

The proposed work programme is outlined below. This programme is essentially based on proposals in the licence application submitted by CMT and before the Exemption was granted by the Minister. Results during ongoing exploration will undoubtedly lead to modifications and adjustment to the programme.

Year 1 (31st March 2001 – 03rd September 2001)

- Literature review, aerial photographs, Landsat TM data
- Reconnaissance geology
- Reconnaissance track cutting
- Processing of aeromagnetic data
- Interpretation of aeromagnetic data
- Processing of geochemical data
- Compilation, interpretation and target generation

Year 2 (04th September 2001 – 03rd September 2002)

- Geophysics (ground ±airborne)
- Geochemistry
- Track cutting
- Petrology
- Ground truthing
- Compilation and interpretation

It is anticipated that compilation and interpretation will identify suitable drill targets for further exploration.

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