RGC EXPLORATION PTY. LIMITED
(on behalf of Renison Ltd)





# EXPLORATION LICENCE NO.'S 12/90 AND 15/90

("Waratah")

FINAL REPORT
APRIL 1994





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Distribution:

- Tasmanian Department of Mines
- RGC Exploration - Zeehan
- RGC Exploration - Perth

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# 1. INTRODUCTION

E.L.'s 12/90 and 15/90 were held by Renison Limited and explored by RGC Exploration, both wholly owned subsidiaries of RGC Limited. These licences were acquired because of the potential of the area for carbonate replacement tin deposits similar to Renison or Mount Bischoff.

Leaman and Richardson (1989) published an interpretation of the sub-surface shape of the western Tasmanian granites. The results of this gravity survey highlighted the relationship between the granite topography and the distribution of granite-related mineralisation. Following the release of this work, a strategy was developed to explore the Meredith Granite and its surrounds. The first step in this exploration was to in-fill the gravity survey with closer spaced stations to produce a far more detailed interpretation of the subsurface Meredith Granite topography. The next stage was to overlap existing air-mag data and open file stream sediment geochemistry on those areas underlain by shallow granite ridges. Specific geophysical or geochemical targets were selected through this process.

## 2. LAND TENURE

In March 1990, Renison Limited tendered for ETA 160 "Mt Ramsay" and E.T.A. 161 "Waratah". The tender application was successful and E.L. 12/90 with an area of 149 $km^2$ was granted on 6/7/90. A further 183 $km^2$ was also applied for and this area was granted as E.L. 15/90 on 6/7/90. In June 1992 E.L. 12/90 was reduced to 111 $km^2$ and E.L. 15/90 was reduced to 36 $km^2$. E.L. 12/90 includes the township of Waratah. Excluded from E.L. 12/90 is R.L. 8807 which covers 4 $km^2$ around Mount Bischoff and several small M.L.s over alluvial deposits on the Waratah River and near the margins of the Meredith Granite. These M.L.'s are:

| | | |
|---|---|---|
| 19m/72 | Campelane Nominees Pty. Ltd. | Waratah River |
| 4W/71 | Campelane Nominees Pty. Ltd. | |
| 3W/72 | Campelane Nominees Pty. Ltd. | |
| 4W/72 | Campelane Nominees Pty. Ltd. | |
| 1W/73 | Campelane Nominees Pty. Ltd. | |
| 1W/73 | Campelane Nominees Pty. Ltd. | |
| 11M/77 | A. Sporer | Wombat Flat |
| 14M/77 | A. Sporer | Wombat Flat |
| 44M/90 | A. Sporer | Wombat Flat |
| 5M/75 | Seaborn Pty. Ltd. | Wombat Flat |
| 82M/77 | M.G. Glozier | below Waratah Falls |

On 6/6/93 E.L. 15/90 was reduced to 2 $km^2$ and E.L. 12/90 reduced to 64 $km^2$.

## 3. WORK COMPLETED

### 1990/91

Work completed by RGC during 1990/91 included a detailed gravity survey, a literature review of previous exploration, reassessment of the open file stream sediment geochemistry, reassessment of the 1981 Mines Department aeromagnetic data and reconnaissance mapping and sampling.

The gravity survey was carried out along existing roads and walking tracks. In addition, 24km of walking tracks were cut to provide access to areas with poor coverage. In total, 337 new gravity stations were added to the existing gravity data base. An interpretation of the new data was completed by David Leaman. This interpretation is presented as an appendix in Halley (1991).

Two major obstacles were encountered in the aeromagnetic data, the magnetic response of the Tertiary basalt and the highly magnetic aureole of the Meredith Granite in the surrounding Crimson Creek Formation. The magnetic anomalies in the aureole were an order of magnitude greater than the response of the Mount Bischoff deposit. The magnetic signature of any mineralisation in the Crimson Creek Formation is likely to be swamped in the aureole zone. However, some interesting discreet magnetic features were apparent in the data. The magnetic skarns in the Gordon Limestone at the northern end of the Huskisson Syncline were clearly evident in the magnetic data. A similar Eldon Group sequence also occurs on the northern side of the Meredith Granite, south of Luina. A magnetic anomaly also occurs here at the contact between the granite and the Eldon Group. Follow-up work located another outcropping magnetite skarn, the Whyte River skarn, within Gordon Limestone at the granite contact.

In the stream sediment geochemistry, the main features were:

(1) Contamination in the Waratah and Arthur Rivers from Mount Bischoff and Magnet
(2) elevated tin values throughout the Ramsay River
(3) elevated tin values in Deep gully Creek.

Reconnaissance mapping revealed that tourmaline-sericite greisens were common throughout the northeastern margin of the Meredith Granite and the tin in the Ramsay River system was clearly derived from these greisens.

1991/92

During 1991/92 detailed stream sediment sampling was carried out around Deep Gully, northeast of Mount Bischoff, around the Whyte River skarn and at Wombat Flat. At Wombat Flat, a significant stream sediment tin anomaly was attributed to reworking of Tertiary sediments exposed beneath basalt flows.

The Whyte River skarn was gridded, mapped, rock chip sampled and surveyed with ground magnetics. The rock chips had maximum values of 1000ppm Sn and 630ppm W. A stream sediment tin anomaly occurred downstream from the skarn but it had a low magnitude and was quickly diluted by granitic detritus.

At Deep Gully Creek and in some of its tributaries, water worn, tin-bearing boulders of quartz porphyry topaz greisen identical to those at Mount Bischoff, were located. Such material had previously been recognised by Comstaff. None of this material was ever found in situ, although strongly seriticised porphyry dykes outcrop in Deep Gully Creek. Stream sediment sampling repeated the anomalous tin geochemistry recorded by Comstaff.

1992/93

No further work was undertaken at the Whyte River prospect because of the small size of the skarn, the low metal values from the rock chip sampling and the metallurgical complexity associated with this type of mineralisation.

A grid was cut over the Deep Gully-Waratah River area. This area was an attractive target for the following reasons: (i) its location above a granite ridge; (ii) it has a major fault running through it; (iii) a thick dolomite unit occurs in Deep Gully Creek adjacent to the fault; (iv) the area is intruded by quartz-feldspar porphyry dykes; (v) base metal veins occur in the area; (vi) tin-anomalous stream sediment geochemistry has been recorded.

The grid was mapped, rock chip sampled, soil sampled and surveyed with ground magnetics. Multi-element soil geochemistry was used as an aid to the geological interpretation. Tin values up to 6100ppm with co-incident As up to 660ppm were recorded over a strike length of 400m. However, these samples were from the vicinity of the Waratah River and are likely to be contaminated by Mt Bischoff tailings.

Around Deep Gully, waterworn cobbles and boulders, including rare examples quartz porphyry topaz greisen, were located near the base of the Tertiary basalt. The highest stream sediment tin values also come from these areas. It is evident that old drainage systems transporting material from Mount Bischoff cut through the Deep Gully area prior to the basalt flows. The porphyry boulders and tin in Deep Gully are apparently not from a local source.

No exploration was conducted during 1993/94.

## 3. REFERENCES

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Leaman, D.E., and Richardson, R.G., 1989.
The Granites of West and Northwest Tasmania - A Geophysical Interpretation. Bull. Geol. Surv. Tas. 66.

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| RGC EXPLORATION PTY. LIMITED (INC. IN N.S.W.) | | | |
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| | DRAWN | | |
| | DATE | | |
| | CHECKED | | |
| | 1:25 000 REFERENCE | | 5 cm |
| BASE PLAN No. 5530/003 | | SCALE 1 : 50 000 | FIG. |
| OVERLAY PLAN No. | | | |