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MACMIN N.L.

EL 5/94 - LEWIS RIVER

TASMANIA

FINAL REPORT TO 3 OCTOBER 1996

97-3988

FINAL REPORT - LEWIS RIVER
EL 5/94 - MACMIN N.L.
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SUMMARY

No work was completed on EL 5/94 during the period 3 October 1995 - 3 October 1996.

The licence was allowed to lapse.

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1. INTRODUCTION

E.L. 5/94 Lewis River is located in SW Tasmania, immediately to the north of Elliott Bay. The Licence forms an inverted U-Shape and surrounds the Elliott Bay Licence held by Plutonic (Figure 1). This area is underlain by highly prospective equivalents of the Mt. Read Volcanics which host many massive sulphide deposits further north in Tasmania

E.L. 5/94 was granted on October 2, 1994 for a period of one year and one day. The expenditure commitment was $26,000. It was renewed for a further 12 months. EL 5/94 Lewis River was allowed to lapse in October 1996 as the restrictive access conditions and exploration guidelines were considered to increase exploration expenditure excessively in this isolated and rugged area.

Vehicular access to the E.L. is from Birch Inlet on Macquarie Harbour via four wheel drive bikes or bombardiers. Helicopter access is most logically from Strathgordon (40 km east).

Several massive sulphide deposits and a gold deposit are hosted by the Mt. Read Volcanics. Five major massive sulphide deposits (Rosebery, Hellyer, Hercules, Mt. Lyell and Que River) plus the Henty gold deposit are found within the Mt. Read Volcanics Belt north of Macquarie Harbour.

The Rosebery-type polymetallic massive sulphides and Mt. Lyell type copper-gold deposits both contain minor gold (3 g/t and 0.4 g/t respectively). The high-grade, structurally-controlled Henty deposit contains 30 - 50 g/t Au.

Strong geological similarities have been noted between the Mt. Read Volcanics and the volcanics further south in the Elliott Bay region and the Lewis River Volcanics are thought to represent a continuation of the Mt. Read Volcanic Belt (Large et al., 1987).

The massive sulphide potential of the Licence area has possibly been adequately tested by the previous licence-holders, however, the gold potential remains high and incompletely tested.

2. GEOLOGY OF E.L. 5/94 LEWIS RIVER

In the Elliott Bay area, correlates of the Mt. Read Volcanics have been referred to as the Lewis River Volcanics (White, 1975). They strike generally north-south, dip 60° to 80° west, and have a maximum outcrop width of about 12 km (Figure 3). A belt of Tertiary sediments separates the Elliott Bay sequence in the south from the narrower D'Aguilar Range sequence to the north. The eastern margin of the volcanics appears to be faulted against Precambrian metamorphics at Elliott Bay, but in the

D'Aguilar Range area a conformably underlying sequence of epiclastics, shale, and conglomerate rests unconformably on Precambrian basement (Martin, 1974).

On the western side, the volcanics at Elliott Bay are conformably overlain by a volcano-sedimentary sequence which, in turn, is faulted against or underlies (?) a thick sequence of marine sediments and mafic lavas and pyroclastics comprising the Mainwaring Group.

The main volcanic sequence is unconformably overlain by a volcaniclastic unit passing up into a thick siltstone followed conformably by the siliciclastic Owen Conglomerate at Mt. Osmund.

3. PREVIOUS EXPLORATION

The major exploration in this area has been for massive sulphide mineralisation.

An initial helicopter-borne EM survey by BHP in 1975 was partly followed up with mainly stream sediment geochemistry by Geopeko between 1977-1984. In addition some gridding and bedrock geochemistry was carried out over the potential volcanic succession. Regional geological mapping concentrated on the Cambrian Volcanics.

In 1986 Cyprus Minerals carried out a Dighem survey, a minor part of which overlapped E.L. 5/94. Cyprus carried out further stream sediment sampling and regional geological mapping of selected areas. Computer-processed magnetic imaging and airphoto interpretation of structure were used to produce a lineament map.

In 1991 Aberfoyle carried out a Questem E-M survey.

Exploration specifically for gold commenced mid 1986 by Cyprus Minerals and was continued by Aberfoyle until the area was relinquished at the end of 1991.

Only the Penders Prospect in E.L. 5/94 has been drilled, many of the remaining anomalous areas merit at least further geochemical and geological testing.

4. ANOMALOUS AREAS WITHIN E.L. 5/94

Please refer to Table 1.

Table 1

Summary of Lewis River Anomalous Areas

PROSPECT	COMMENTS
Low Rocky Point Granite	Complex magnetics, stream, soil and rock-chip Au geochemical anomalies all around the granite margins suggest that Au mineralisation is related to the intrusion.
Eastern contact	Anomalous Au geochemistry in -80# stream sediment samples and presence of pyrite-quartz-haematite veins. Four stream sediment samples (of eleven sampled) >0.10 ppm Au. Nine rock-chip samples, one sample gave 0.68 ppm Au. More detailed stream sediment sampling required.
Northern contact (Voyager 6)	Airmagnetic anomaly plus anomalous Au geochemistry in stream sediments and some rock-chip samples. Fifteen stream sediment/pan concentrate samples. Best values 0.9 ppm Au in -80#, five samples >0.1 ppm Au. 22.6 ppm Au in pan concentrate. Up to 7.25 ppm Au in rock-chip samples. Requires further detailed mapping and some geochemical sampling.
Western contact	Some mapping, rock-chip, stream sediment and soil sampling completed. Anomalous Au geochemistry in soils needs gridding, soil sampling and further mapping. Best soil values 0.03 and 0.07 ppm Au. Best stream sediment value 250 ppm. (Penders lies at the centre of a 4 km long zone of Au anomalous stream sediment samples along the western contact.
Penders	Lies on major deformation zone at the contact between Low Rocky Point Granite and Western epiclastic rocks. Twelve stream sites sampled (11 for p.c.). Maximum values -80# Cu 10 ppm, Au 1.07 ppm, Pb, Zn, Ag, As BLD. Pan concentrate maximum Cu 10 ppm, Zn 140 ppm, Ag 46 ppm, Au 365.5 ppm, Pb, As BLD. Rock-chip samples from sulphide-rich rock samples in old workings gave up to 0.675 ppm Au. Samples from magnetite-pyrite beds gave <0.05 ppm Au. This area merits further geological mapping, rock-chip and soil sampling.
Wanderer South	3.15 km of lines cut. Thirteen pan concentrate/stream sediment samples collected, maximum values Au 0.22 ppm (p.c.), 0.13 ppm (-80#). Base metals all weakly anomalous in -80# (Cu 35 ppm, Pb 20 ppm, Zn 65 ppm). B/C soils sampled at 25 m spacing on gridlines. Au <0.01 ppm; anomalous Cu over basic volcanics, As 130 ppm in pyritic shales. Limited rock-chip sampling - 3 samples >0.008 ppm Au, maximum values = Cu 145 ppm, Pb 15 ppm, Zn 45 ppm.

PROSPECT	COMMENTS
Voyager 18-33 Coastal section	Some stockwork zones, some dolomitic horizons. Minor weakly anomalous rock-chip samples. Au up to 0.055 ppm. High Cu values (up to 2.15%).
Three Creeks Anomaly	Moderate to highly anomalous Au stream sediment geochemistry (pan concentrate) over a 2 km radius zone e.g. 3 to 23 grains of Au, analysed to give 1.2 to 39 ppm Au. Has not had any follow-up. Requires detailed mapping and further geochemical sampling. Zone includes Airmagnetic anomalies 1 and 2.
Upper Hudson River Anomaly	Moderate to highly anomalous Au in pan concentrates from tributaries of Upper Hudson River. Au grain count 3-20 gave analyses of 5-456 ppm. Requires detailed mapping and further geochemical sampling.
Airmagnetic anomaly 3	Magnetic and soil geochemical anomalies coincident over granite/rhyolitic tuff contact. Soil anomaly - 5100 ppm Cu, 98 ppm Pb, 10 ppm As, 0.03 g/t Au. One pan concentrate 9.9 ppm Au. Two anomalous stream sediment samples in vicinity.
Porphyry-Diorite contact	Two adjacent but isolated anomalous pan concentrate samples, surrounded by unsampled? creeks. On fault boundary between dolerite and Elliott Point porphyry. Requires further creek sampling.

5. WORK COMPLETED BY MACMIN BETWEEN OCTOBER 1994-OCTOBER 1996

From initial geological evaluation of previous licence holders data (Hall, 1994) MACMIN concluded that there are three areas within E.L. 5/94 that contain highly anomalous levels of gold in pan-concentrate samples, and these are:-

(A) Three Creeks Prospect
(B) Margins of Low Rocky Point Granite
(C) Upper Hudson River Prospect

Colour aerial photographs (1:25,000) covering the entire license area and blow-ups (1:5000) of each of the abovementioned prospect areas were procured and reviewed. It was decided to evaluate the Three Creeks Prospect, which covers an area of approximately 4 to 5 square kilometres, and had previous pan concentrate sample results such as 30 g/t Au/14 grains gold and 51 g/t Au/10 grains gold.

C-horizon soil sampling, using a hydraulic power auger with a 50mm screw bit, was utilised to attempt to locate the source of the gold shedding into the drainages, after four major creeks in the central and western sectors of the prospect area were panned to confirm the existence of gold in the drainages. These samples were not submitted for analysis and the precise locations were not plotted. Eight individual lines were sampled on a 20m downline basis, with 200m nominal line separations. The lines were oriented roughly AMG east-west (approx. 78° Mag) and were controlled by plotting the lines on the 1:25,000 photograph. No individual point control downline was undertaken. As such, the end points are accurately fixed, but individual samples downline may not be located in the precise position (relative to drainages etc.) indicated.

The programme was initiated in mid-March 1995 and was 2 weeks in duration. It was hampered throughout by unseasonably wet weather (plus hail) and a series of mechanical problems that ultimately shut the programme down, causing a low sample collection rate. Three additional soil lines were cut/flagged but not sampled because of the multiple auger bit failures.

A total of 283 C-horizon samples (approx. 300-400gm) were collected and analysed. Relevant data are recorded in Appendix 2, the analytical report is located in Appendix 3 and 1:5000 plans showing sample locations, gold, copper/arsenic, lead and zinc are located in Appendix 4. Geochemical maxima were: Au - 150 ppb (however in the preliminary report another sample was 750 ppb), As - 34 ppm, Pb - 540 ppm, Cu - 130 ppm and Zn - 740 ppm.

Gold was analysed to 1 ppb from an aqua region digest and AAS analysis with carbon rod finish on a 50gm sample. Arsenic, copper, lead and zinc

were analysed by ICP with a perchloric acid digest and detection limits of 3,2,5 and 2 ppm respectively.

The details of this work and accompanying maps are found in McNeil (1995).

Several roughly northerly trending zones of base metal anomalism were defined, however, they do not appear to correspond with those defined by Geopeko in the early 1980's. Unfortunately, none of Geopeko's sample sites could be accurately relocated, so a definitive comparison was not possible. In addition, several point to double point gold anomalies were returned, however, sampling density precludes any meaningful statements on the possible trends of these anomalies.

6. REFERENCES

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