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COMINCO EXPLORATION PTY. LTD.

PROGRESS REPORT ON EXPLORATION

LICENCE 47/71 - QUEEN

**MICRO**

for 6 months ending June 21, 1976

D.C. Simpson  
Project Geologist

30/6/76

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SUMMARY

During the reporting period work was directed at establishing the source of the airborne magnetic anomaly within Zeehan township.

This involved gridding, a ground magnetic survey and diamond drilling. Drilling successfully located the source of the magnetic anomaly, showing it to be a disseminated pyrrhotite-pyrite body containing cassiterite mineralisation.

It should be noted that the reported work was carried out on the Exploration Licence and Consolidated Lease 43M/73. However, for completeness the work on both areas is reported.

GRIDDING

Existing grid lines at Queen Hill were extended eastward to cover the zone of the airborne magnetic anomaly. The extended lines are shown on Plate QH 62 (coloured in orange). Lines are at 50m intervals with pegs at 25m intervals along lines. Two additional lines 1675N and 1725N were added following the initial ground magnetometer survey to provide detailed information over the centre of the anomaly.

Lines were surveyed using theodolite and chain.

GROUND MAGNETICS

This survey was designed to delineate the airborne anomaly obtained by Seigel and Associates in 1973, under CEPL direction.

The ground survey was conducted using a proton precession magnetometer with station spacings at 12.5 metres. Noise (principally from buildings and scrap steel) was a problem in the town area, but, with selection of intermediate lines plus smoothing of results of the survey, an accurate position and depth to the centre of the source was obtained. It was interpreted that the centre of the source was located 100 metres vertically below grid co-ordinates 1040E 1640N. A near vertical, or steep westerly dip, was assigned to the source.

INTERPRETATION OF AIRBORNE MAGNETICS

Limited re-interpretation of the 1973 airborne magnetic data was carried out following susceptibility measurements of drill core from the discovery hole G39 (see under Diamond Drilling).

The purpose was to determine whether or not multiple sources could be producing the observed anomalies. However, the re-interpretation was inconclusive due to noise and short flight lines. It is expected that successful interpretation can be carried out when the area is re-flown.

DIAMOND DRILLING AND RESULTS

One drill hole of 350m length was proposed to test the anomaly, being collared at co-ords 1640N, 1173E with a declination at the collar of 41° and bearing grid west (258° magnetic). The hole was successful in:

- i) Obtaining an ore grade intersection of tin mineralisation, being -  
5.65m x 1.95% Sn (true width estimated to be 4.8m)  
from 221.6 - 227.25m
  
- ii) Intersecting a zone of significant pyrite-pyrrhotite mineralisation from 135-246 metres. This zone averages 0.25% Sn including a 23m interval at zero grade (unsampled).

The mineralisation is in a distinct new horizon approximately 300 metres east of the Queen Hill body.

- iii) Drilling through to the quartzite of Queen Hill (proper), thus establishing the relationship of the new mineralisation to the sequence on Queen Hill.

It appears that pyrrhotite is more closely related to tin content than is pyrite (e.g. the lower grade section from 224.3-225.4 coincides with a pyrite rich zone within the pyrrhotite lode).

Acid soluble tin and copper assays indicate there are only trace amounts of stannite present.

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One feature of the sequence of rocks from about 170m to 304m is their dolomitic nature. There do not appear to be any true dolomites in the mineralised zone but the sediments often contain 5-30% dolomite. One rock type, which appears to be a dolomitic sandstone, is particularly susceptible to pyrrhotite replacement.

The massive dolomites occurring below 280 metres are substantially unmineralised but are cut by numerous thin veins carrying chlorite, traces of pyrite and vivianite. (Vivianite is a hydrated iron phosphate which commonly accompanies tin mineralisation.)

Magnetic susceptibility measurements carried out on the core and used in conjunction with the values interpreted from the magnetometer data suggest that there is insufficient magnetic material intersected in the drill hole to explain the magnetic anomaly. Further data processing is necessary to calculate where the bulk of magnetic material lies in relation to that intersected.

Preliminary thin section studies of mineralisation from 221.6-224.3m indicate that the cassiterite is fine grained, i.e. 95% <50µ. It does not appear to be locked in sulphides as it is in the Queen Hill body, but is associated with carbonate.

EXPENDITURE ON EXPLORATION LICENCE

Sundries	\$ 781
Geology	907
Surveying	519
Geophysics	1,579
Geochemistry	7
Tenure	30
	<u>\$3,823</u>

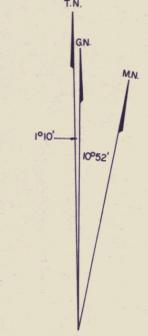
PROPOSED WORK

Proposed work for the next six months was discussed in the licence renewal application.

Submitted *D.C. Simpson*  
D.C. Simpson  
Project Geologist

Endorsed *L.V. Gentle for.*  
L.V. Gentle  
Chief Geologist

30/6/76



- CAMBRIAN**
  - O Ordovician and younger sediments
  - C Crimson Ck Formation - Siltstones shale dolomitic sed. minor chert.
  - S Bedded Quartzite, slate and shale
  - PRE CAMBRIAN**
  - Q Massive Quartzite
  - V Basic Volcanics
- N.B. Quaternary Sediments not shown

- Airborne magnetic anomaly (selected contours only)
- Fault - established
- Fault - position approx.
- Geological boundary - position accurate
- Geological boundary - approximate
- Geological boundary - inferred
- Diamond drill hole
- Cleavage
- Schistosity
- Bedding with dip
- Joints
- Shearing
- Flow banding
- Road
- Track
- Creek
- Shaft
- Adit
- Tenure boundary

Geology after mapping by C.E.P.L. and Blissatt(1962) 454005

AREA COVERED BY GROUND MAGNETIC SURVEY 1975-76

GRID LINE EXTENSIONS FOR MAGNETIC SURVEY

SCALE  
100 0 100 200 300 400 500 metres

COMINCO EXPLORATION PTY LTD		76-1170 R	
Drawn DCS	Traced RKY	NORTH WEST TIN FIELD, TASMANIA 004	
Checked		QUEEN HILL, ZEEHAN AREA	
		INTERPRETIVE GEOLOGICAL PLAN	
Location code	Scale 1:5,000	Date November 1975	Plate QH 62