

AIRBORNE GEOPHYSICAL PROGRAMME

LYELL E.Z. EXPLORATIONS

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LYELL - E.Z. - EXPLORATIONS

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GENERAL

MEMORANDUM TO

4th March, 1957

Mr. G. F. Hudspeth,
Manager,
Lyell - E.Z. Explorations.

Airborne Geophysical Programme - L.E.E. Area

The following airborne geophysical programme is submitted
for your consideration.

B. Scott

Geologist-in-Charge.

Accepted in principle

Copies to: Mr. G. Hall
Mr. H. M. Murray.

MICROFILMED

4th March, 1957

Airborne Geophysical Programme1. Canso Method

Combined electromagnetic, magnetic and radioactive survey via the Canso aircraft.

(a) Recommended Area for this Method

Ref: 4 mile to the inch sheets 3 and 5 - Tasmania.

Commencing at the south end of the area, enclosed in a solid red line on the accompanying map.

Low Rocky Point - westwards to Lawson Range - NE to View Hill - northwards to Frederick Hill - Mt. Lewis - eastwards to Wilmot Range - N. along the west side of the Hamilton Range to the Princess Rivulet - westwards, south of the Goodwin Peak - Gordon River - northwards to Eagle Creek - mouth of Gordon River - along the coastline of Cape Sorell peninsula to Table Head - westwards to Sloop Pt. - southwards along the coast to Low Rocky Point.

This area includes: (a) The known extent of the Dundas series south of Macquarie Harbour.

(b) The southern extension of the Lyell Shear through area a).

(c) The mineralised area of Nicholls Range and a similar area of the Scotchfire Schists to the north and south.

(d) The syncline in the Smith River area (Military

Grid 750,000 N and 380,000 E) which contains Gordon Limestone and younger rocks within the Pre-Cambrian.

(b) Line Spacing

$\frac{1}{4}$ mile.

(c) Estimated Line Miles

The line miles are estimated on east-west flight lines. However, north-south flight lines will be required in the D'Aguilar Ridge area and partly in other areas.

Estimated average length of run = 20 miles

Estimated number of line miles = 3900 line miles.

(d) Estimated Cost

The cost cannot yet be evaluated. However, the type of basis for costing would appear to be on an hour/line mile basis. That is, a minimum sum for a minimum number of line miles per hour (say 50-60) plus a sliding scale for the additional line miles covered per hour over this minimum figure. The number of line miles per hour would be the average for the entire operation.

2. Airborne Magnetometer

(a) Recommended Area

Remainder of the L.E.E. area excluded from the Canso area outlined under 1), excluding:

(a) Tip of Cape Sorell (i.e. north of Table Head).

(b) The peninsula south of Straban.

(a) and (b) are coloured yellow on the accompanying map.

(b) Line Spacing

3 to a mile, east to west traverses.

(c) Estimated Line Miles

Estimated average length of line = 23.7 miles

Estimated number of line miles = 5,550 line miles.

(d) Estimated Cost

5,550 line miles @ £3/12/6 per line mile = £20,120

This includes the price of reduction of the data.

(e) The L.E.E. area would be covered by two magnetometer (i.e. the magnetometer in the Canso and the magnetometer in the Percival Prince).

Consequently there must be some slight overlap at the junction of the areas being flown by these two aircraft.

3. Helicopter Electromagnetic Survey

Combined electromagnetic and radioactive.

(1) Jukes-Darwin Area

This area, which is outlined in mauve on the accompanying map, includes the continuation of the Lyell Shear (through the Dundas series) south of Queenstown and north of Kelly Basin. It includes such prospects as Lake Jukes, Findons, East Darwin and Prince Darwin.

(a) Recommended Area

Ref: 4 miles = 1 inch - Tasmania sheet 3.

East Boundary: Old Crotty - Darwin - Kelly Basin railway.

South Boundary: Military Grid Line 790,000 N.

West Boundary: A line drawn from Mt. Sorell - Mt. Strahan - Rinadena.

North Boundary: Boundary of the Mt. Lyell lease area and the L.E.E. concession.

(b) Line Spacing

Initially 1/5 of a mile, possible 1/7 of a mile over areas of interest.

(c) Estimated Line Miles

250 line miles.

(d) Estimated Cost

The cost of the helicopter electromagnetic survey has already been placed on an hourly basis. Assuming an average figure of 40 line miles/hour at £125 (exclusive of helicopter) this equals £800.

(2) Eagle Creek Prospect

This area, which is outlined in mauve on the accompanying map, includes Eagle Creek, Scorpion Creek and Spence Creek. There is known sulphide mineralisation in the Eagle Creek-Scorpion Creek area (c.f. Report by D. Sampey, January, 1957).

(a) Area

Taking the point of reference as the intersection of Eagle Creek and the Gordon River.

3 miles east and west of this point.

1 mile south and 2 miles north of this point.

The area is outlined in mauve on the accompanying map.

(b) Line Spacing

Initially 1/5 of a mile.

(c) Estimated Line Miles

100 line miles.

(d) Estimated Cost

On the same basis as 1), £325 exclusive of helicopter costs.

(3) If the helicopter electromagnetic programme is approved it is recommended that it is commenced on Monday, 11th March. The flight lines can be plotted on the new L.E.E. aerial photographs.

4. Summary

<u>Method</u>	<u>Aircraft</u>	<u>Estimated Line Miles</u>	<u>Estimated Cost</u>
Combined Geophysics	Canso	3900	No figure available.
Magnetic	Prince	5500	£20,120
Electromagnetic	Helicopter	350	£ 1,125 Exclusive of cost of helicopter.

Geologist-in-Charge.