

71-840
ANNUAL REPORT

ON

E.L. 10/69

(LAKE DORA - HENTY - MT. HUXLEY AREA)

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CONTENTS

	<u>Page</u>
1. INTRODUCTION	1
2. PREVIOUS WORK	1
2.1 Owen - Huxley	1
2.2 Dora - Comstock Area	1
2.3 Henty Area	3
3. WORK COMPLETED 1970-71	3
3.1 Owen - Huxley Area	3
3.1.1 Access	3
3.1.2 Literature Research	3
3.1.3 Field Coverage	4
3.2 Dora - Comstock Area	5
3.2.1 Access	5
3.2.2 Mapping	5
3.3 Henty Area	6
3.3.1 Mapping	6
4. RECOMMENDATIONS FOR THE 1971-72 FIELD SEASON	7
4.1 Introduction	7
4.2 Winter Program	7
4.2.1 Great Lyell	7
4.2.2 Comstock Valley	7
4.3 Summer program	7
4.3.1 Owen - Huxley Area	7
4.3.2 Dora - Comstock Area	8
4.3.3 Henty Area	9
5. CONCLUSIONS	10
6. PROPOSED BUDGET	11

APPENDED FIGURES

- Fig. 1 Location map.

- Fig. 2 General map of lease showing roads.

- Fig. 3 Geology mapping, proposed road and grid -
 Owen - Huxley area.

- Fig. 4 Great Lyell/Duke Lyell adits.

- Fig. 5 Geology mapping and proposed grid -
 Dora - Spicer area.

- Fig. 6 Lake Dora - Cross Section

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ANNUAL REPORT FOR 1970 - 71

DORA - HUXLEY AREA : E.L. 10/69

1. INTRODUCTION

The present E.L. 10/69 came into being with the amalgamation of Exploration Licences 40/70 and 10/69 on the 8th December, 1970. (E.L. 40/70 now no longer exists).

Excluding the Consolidated Mining Lease, the E.L. covers an area of 69 square miles and consists essentially of three areas (Fig. 2):-

1. Owen - Huxley Area
2. Dora - Constock Area
3. Henty Area

2. PREVIOUS WORK

2.1 Owen - Huxley Area

Previous work in this area was well outlined by L.A. Newham in the 1969-70 Annual Report on E.L. 10/69, to which the reader is referred.

2.2 Dora - Constock Area

The Lake Dora/Spicer copper workings are partly on E.L. 10/69 and partly on the Consolidated Syndicate Lease (E.L. 9/66), the mineralised zone striking N.W. - S.E across the boundary. Previous work in the area was outlined in the 1969-70 Annual Report on E.L. 9/66 and only certain aspects will be briefly dealt with here:-

- (a) Smith (1898) visited the Dora workings during their period of operation. He discusses the exploration work carried out on the field and describes the mineralisation (together with some assays) found on the various leases.

- (b) In May, 1938 the Mount Lyell Mining & Railway Co. Ltd. sampled the old Dora workings - 22 samples were taken; the highest assayed 1.8% Cu, but most were in the range 0.1% - 0.3% Cu and the average value of the samples was 0.24%.
- (c) In February, 1939 the Tasmanian Mines Department (Blake and Henderson, 1939) wrote a brief report on the Lake Dora copper deposits and concluded that the old Dora workings were not economically viable under the prevailing economic conditions.
- (d) During the Summer of 1958 Rio Tinto carried out some work over the old Dora workings. One Turam anomaly was located to the West of the old workings, just South of Walford Peak and a second to the West of Lake Dora.
- (e) The Consolidated Syndicate in the Summer of 1969-70 outlined several geophysical and geochemical anomalies which were not closed off to the South and cross the lease boundary from E.L. 9/66 into E.L. 10/69.

The Constock area has had relatively little known work carried out over it apart from the Western end of the valley, where several geophysical surveys have been carried out in the past. Subsequent diamond drilling showed that the strong I.P. - Turam anomalies were due to Gordon Limestone underlying deep Pleistocene moraine. An I.P. survey carried out by Mount Lyell over the old Tasman Crown, Lyell Constock orebodies (which are on the Consolidated Mining Lease) in the Summer of 1970-71 outlined several anomalies probably due to sulphides.

2.3 Henty Area

No known work has been done in this area.

3. WORK COMPLETED 1970-71

3.1 Owen - Huxley Area

3.1.1 Access

The access road towards Mt. Huxley has been extended a further 3 miles to just over 5 miles and is now less than 1 mile from Mt. Huxley. Due to the steep, clayey slope at the turnoff from South Queenstown, making entry very difficult, a new turnoff has been constructed further to the South and joins the original road 1 mile further on (Fig. 2). Bad weather also caused the road to be washed out at Lynch's Creek and a new road has been built bypassing the old ford.

The old Pickands Mather road from Conglomerate Creek has been repaired and now extends approximately 1½ miles to give access to the Great Lyell area and the Northern part of the Owen - Huxley area (Fig. 2).

All the roads have been surveyed by means of "Tape and Compass" and geologically mapped (Fig. 3).

3.1.2 Literature Research

Research was carried out amongst both the Mount Lyell Mining & Railway Co. Ltd and the Mines Department records.

The Mount Lyell research was concerned with the Great Lyell/Duke Lyell area and the Mt. Ellen Goldmine. In the Great Lyell/Duke Lyell area available

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mineralisation values in the old adits have been plotted and the holes drilled by Mount Lyell in 1961 relogged in an attempt to evaluate the area for future work. Research into the Mt. Ellen Goldmine suggest that it has little or no economic potential : the gold values varying from 1 grain to a maximum of 3 dwt, with an average of only 10 grains, contained mainly in quartz veins within deeply weathered volcanics (now clay).

From the Mines Department copies were obtained of all the work carried out by Pickands Mather in the Mt. Owen area. Apart from some very limited geophysics in the Northern part of the area, most of their work consisted of geochemistry. Pickands Mather realised that the area was contaminated by the Mount Lyell smelter, but thought that it was superficial and undertook soil sampling at 100' intervals on a 400' grid, assaying for Cu, Pb, Zn, Ni and As. Their results however reflect this contamination. The geochemical maps and profiles are erratic with many isolated highs and the pattern of values very irregular with many dubious anomalies; any true anomalies are masked by this contamination. An attempt will be made to correlate all Pickands Mather's work, especially the geophysics with results obtained by Mount Lyell in the same area.

3.1.3 Field Coverage

Apart from the surveying and mapping of roads, field work was mainly concerned with examining old workings.

The upper Great Lyell adit was sampled and old assays for the Duke Lyell workings have been obtained (Fig. 4).

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Although the assays from the upper Great Lyell adit are far from encouraging (this was thought to have been more in the nature of an exploration drive), the Duke Lyell assays are more encouraging as were the assays obtained in the drill holes put down in the Great Lyell area by Mount Lyell in 1961 and good mineralisation has been reported from the Great Lyell shaft. The lower and main Great Lyell adits still remain unsampled.

Several attempts have been made by different people to find and examine the Mt. Ellen Goldmine. So far all attempts have been unsuccessful, partly due to terrain, but mainly because of the thick scrub in the area, which makes progress difficult and reduces visibility to a few feet.

3.2 Dora - Comstock Area

3.2.1 Access

To facilitate entry into the area, the Lake Dora road on E.L. 9/66 was extended Southwards across the boundary into E.L. 10/69 for 2 miles to the Northern shore of Lake Spicer (Fig. 2).

3.2.2 Mapping

Mapping was conducted on a scale 1" : 500' from the Northern boundary of the lease as far South as the Northern shore of Lake Beatrice and as far West as the Eastern slopes of Mt. Geikie (Fig. 5).

The area consists essentially of a N.W.W. - S.S.E. striking syncline in the Western part of the area, with Gordon Limestone forming the core of the fold and Owen Conglomerate the limbs. The Westward dip of the Eastern limb brings Cambrian volcanics to the

surface in the centre of the area and these are faulted off to the East against Owen Conglomerate. The Westerly dip of this Owen Conglomerate again brings Cambrian volcanics to the surface further East (cross section - Fig. 5).

The whole area was affected by glaciation during the Pleistocene and the Owen Conglomerate and Cambrian surfaces exhibit typical features of an ice plucked and eroded surface, with numerous small lakes and swamps alternating with ridges of rock all elongated subparallel to the schistosity or bedding. A considerable area of the N.W. is also covered with moraine.

Mineralisation was observed within the Cambrian volcanics and the Gordon Limestone. In the Cambrian rocks the mineralisation is mainly scattered pyrite, although rare specks of chalcopyrite are seen. Within the limestone irregular zones of galena and chalcopyrite have been found in caves in the Southern part of the synclinal basin. The extent and potential of the mineralisation has not been investigated owing to difficulties of access to the area particularly following heavy rain.

3.3 Henty Area

3.3.1 Mapping

Preliminary mapping has been conducted along the main road (Murchison Highway) between the Yolande and Henty rivers and along bush tracks leading off the main road.

4. RECOMMENDATIONS FOR THE 1971-72 FIELD SEASON

4.1 Introduction

Comparatively little is known about most of the area, therefore one of the first requirements is a more comprehensive geological map. Regional mapping would establish the basic geology : the lithological units, with the trends and structure of the area and delineate areas of greater economic interest. These areas could be then investigated in more detail by : close gridding and more detailed mapping, geophysics and geochemistry (where viable) along the grid lines.

4.2 Winter Program

Weather obviously limits the size and scope of field work in the winter; e.g. the Lake Dora region is snowbound most of the winter, therefore work is restricted to places with easy access from Queenstown.

4.2.1 Great Lyell

Only two adits remain unsampled in the Great Lyell/ Duke Lyell area. Sampling of these adits will assist in the evaluation of the area.

4.2.2 Comstock Valley

The Eastern end and Northern slopes of the valley are largely an unknown quantity although Cambrian volcanics have been reported in the past. Reconnaissance mapping of the area will be completed during the winter and any areas of interest gridded in the early summer months for more detailed investigation.

4.3 Summer Program

4.3.1 Owen - Hurley Area

To assist the initial systematic geological mapping

program it is proposed that mapping and ground magnetics be conducted over a grid consisting of traverse lines 1600' apart to cover "the area of interest" outlined in last years annual report, extending Southwards from Roaring Meg Creek to Mt. Hazley (Fig. 3). The baseline of 20,000' and most of the Eastern half of the grid can be laid out by field assistants directed by a geologist, but the majority of the Western half will need track cutters. It is estimated that approximately 65,000' of lines, will have to be cut out of a total of 142,000' of the grid.

It is also proposed that the road be extended approximately 1 mile towards Mt. Hazley to provide reasonable access to the Southern section of the E.L. Both the gridding and road development is scheduled for completion by the end of September.

If mapping and magnetics outline any anomalous areas it is recommended that the grid be closed up and more detailed work carried out. Work on this initial grid should be finished by the end of December, 1971.

4.3.2 Dora - Comstock Area

In the Dora - Spicer area it is recommended that the Tyndall grid be extended Southwards to cover the mineralised Cambrian volcanics on E.L. 10/69. This would involve 30,000' of gridding (Fig. 5). The Tyndall I.P. survey could then be extended to close off the anomalies that were left open by the Tyndall survey and to check the second Turam anomaly outlined by R.T.Z. in 1958, to the West of Lake Dora.

Mapping to date in the Dora - Spicer (previously mapped by R.T.Z. 1958 and Mount Lyell 1970) has proved inadequate to establish the structure and lithological units. Some confusion exists in the differentiation of Owen Conglomerate (conglomerate and sandstone horizons) and basal Cambrian (Success Creek Group (?) - conglomerates, sandstones and dolomites). Mapping to be conducted during the summer months should aid in establishing the relative stratigraphic positions of the Cambrian rocks along the Eastern side of the E.L.

4.3.3 Henty Area

Very little is known about this area and a reliable map is needed. Apart from the main highway which runs across the Northern end of the lease, there is no other access into the area, which is cut by deep gorges and covered in dense bush. The deeply incised rivers and streams are the only practical routes into the area and it is suggested that the best way to carry out the reconnaissance mapping program would be by traversing the Henty and Yolande rivers and their major tributaries during January or February 1972. At this time of the year the dry weather will have lowered the water level in the rivers to a minimum. The majority of this area South of the highway is thought to consist of Junee and Eldon group sediments which are of little economic potential. Consequently this section could be relinquished following a rapid geological appraisal.

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5. CONCLUSIONS

Apart from the Great Lyell/Duke Lyell area which is on the Consolidated Mining Lease and the Lake Dora region, where I.P. is planned for the summer, the rest of the E.L. appears to be of low potential. The above recommendations are designed to cover the ground quickly and effectively and if any encouragement is received, the particular areas will be subsequently covered in more detail. Where no encouragement is received, it is recommended that the areas be relinquished.

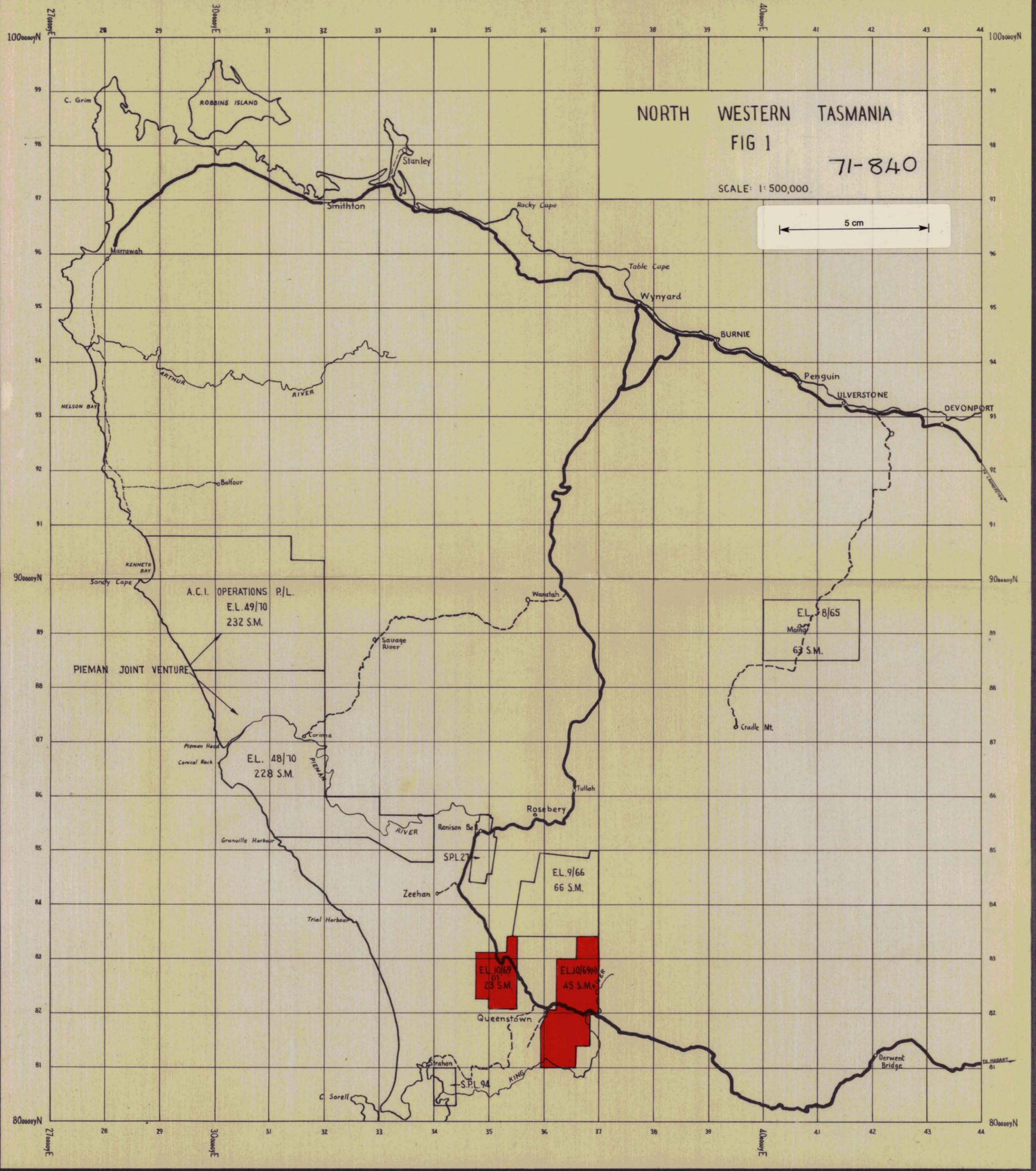
Keith Wells.

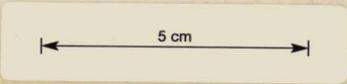
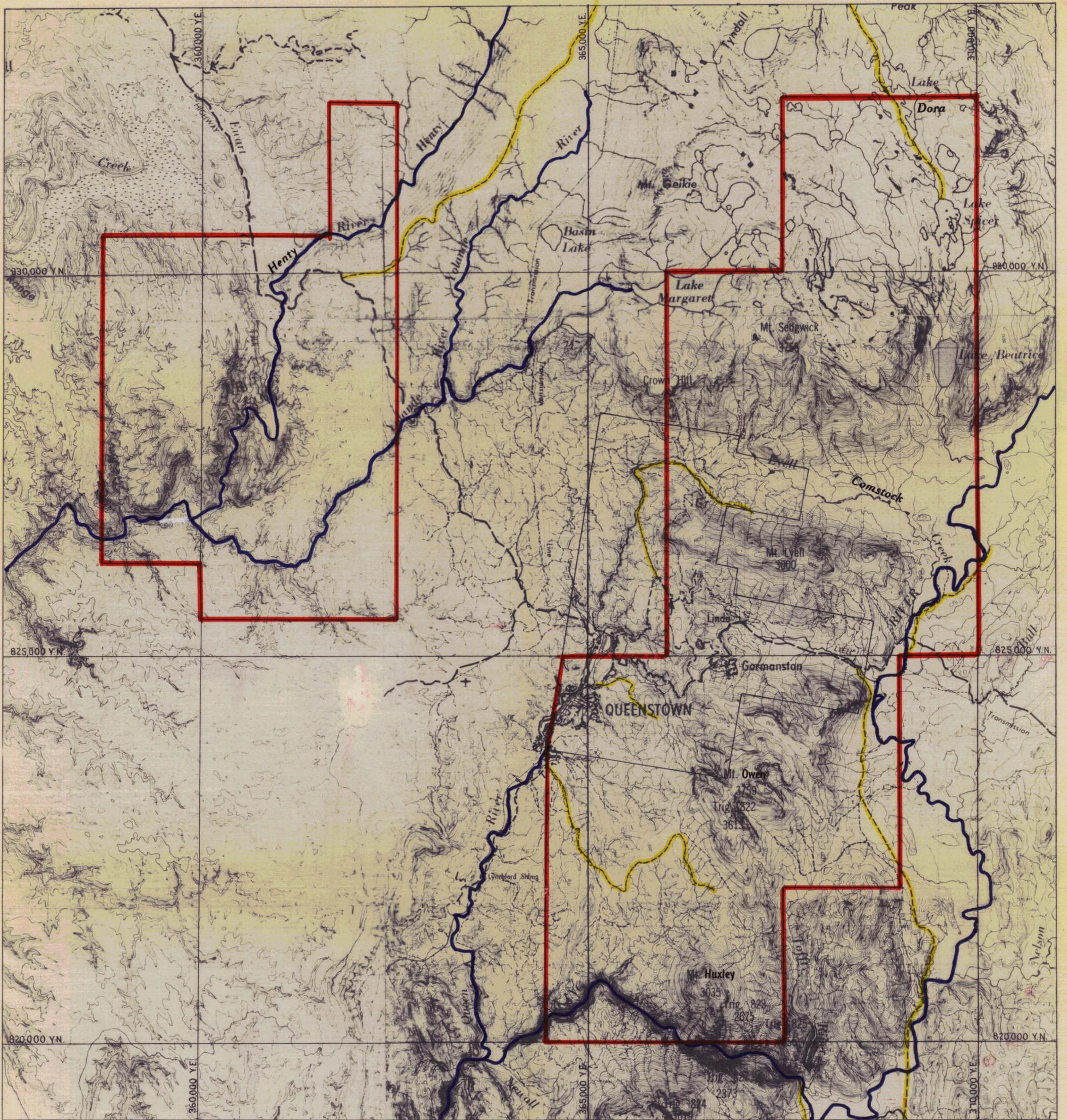
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6. PROPOSED BUDGET

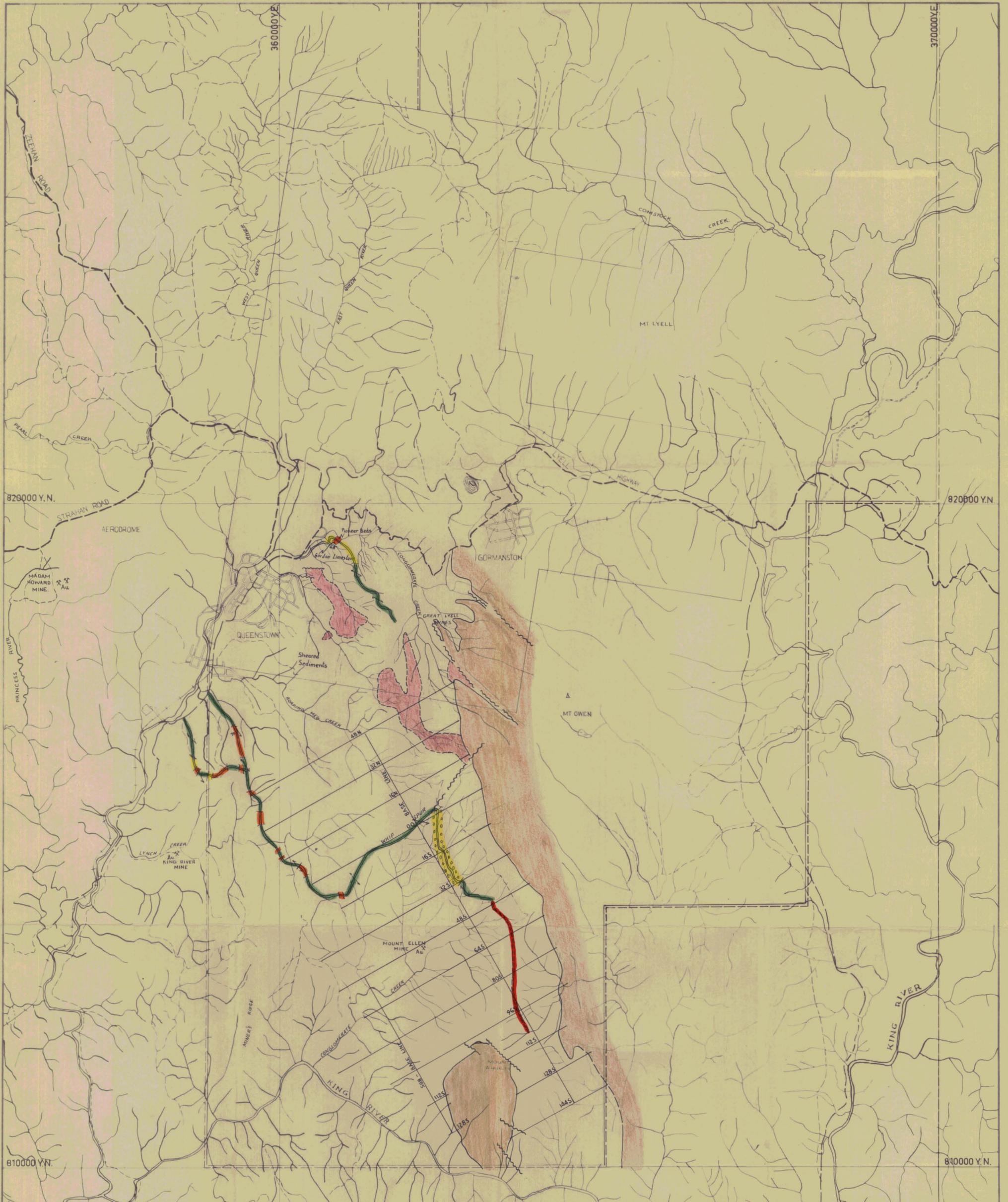
BUDGET FOR E.L. 10/69. 1971-72

<u>Items</u>	<u>Cost</u>
Salaries (geologists and field assistants)	\$10,000
Site Preparation (roads and track cutting)	\$ 9,000
Air Photographs	\$ 2,000
I.P. Survey	\$ 2,500
Geochemistry	\$ 500
Materials	<u>\$ 1,000</u>
TOTAL	<u>\$25,000</u>



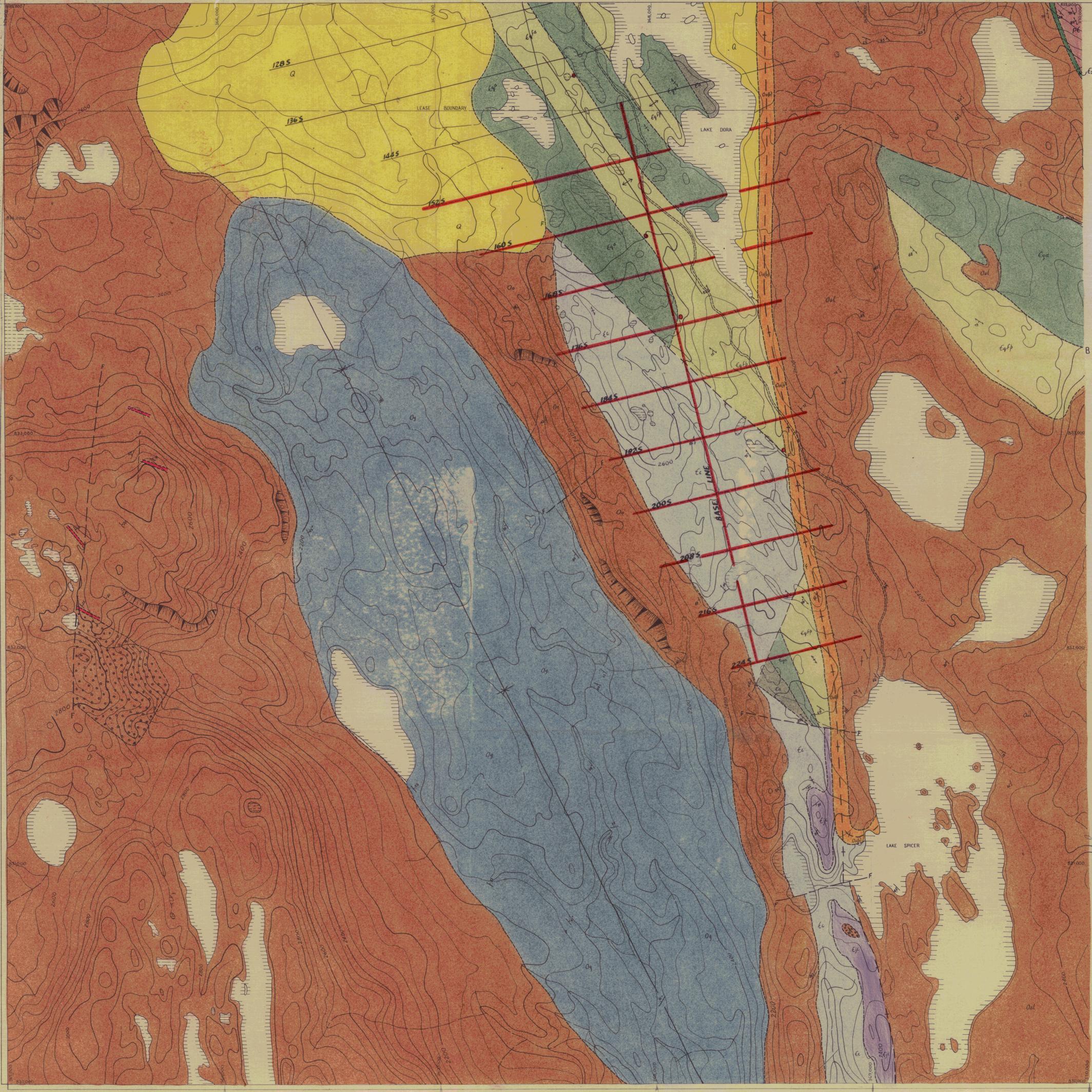


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THE MOUNT LYELL M. & R. COY. LTD.		DRAWN.	K.W.
EXPLORATION DEPARTMENT		TRACED.	R.G.W.
E.L. 10/69		CHECKED.	K.W.
DORA - HUXLEY		DATE.	28-6-'71
SHOWING ROADS		SCALE.	1" = 1 mile
002		FIG. 2	



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|--|--|-------------------------|
| QUARTZ SCREE | INTRUSIONS (INTERMEDIATE COMPOSITION) | FAULTS |
| OWEN CONGLOMERATE SCREE | CAMBRIAN SEDIMENTS | SCHISTOSITY |
| OWEN CONGLOMERATE | SHEARED CAMBRIAN VOLCANICS | BEDDING |
| | | PROPOSED ROAD EXTENSION |
| | | PROPOSED GRID |

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GEOLOGICAL DEPARTMENT		TRACED BY RGW
OWEN-HUXLEY AREA		CHECKED BY K.W.
ON E.L. 10/69		DATE 9-9-69
71-840		SCALE 2" : MILE
003		FIG. 3

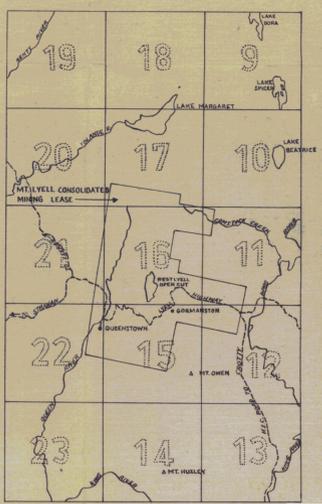


LEGEND

- Q QUATERNARY COVER
- Oa GORDON LIMESTONE
- Ool UNDIFFERENTIATED OWEN CONGLOMERATE
- Ool LOWER OWEN CONGLOMERATE
- Ool BRECCIATED OWEN SANDSTONE
- Ecf JUKES BRECCIA
- Ec DORA CONGLOMERATE
- Ec Agglomerates
- Ec Quartz - Feldspar Agglomerate
- Ec Quartz - Feldspar Porphyries and Felsitic Agglomerates
- Ec Cambrian Slates
- Ec Pre Cambrian Quartzites
- GEOLOGICAL BOUNDARY
- - - FAULTS
- + ANTICLINE
- - - SYNCLINE
- - - BEDDING, STRIKE & DIP
- HAEMATITE LENS
- PYRITE MINERALISATION
- + PROPOSED GRID



LOCATION



5 cm

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 GEOLOGICAL DEPARTMENT
DORA - HUXLEY AREA
E.L. 10/69 PART II
SHEET 9
 GEOLOGICAL MAP 005

DRAWN. P.H.
 TRACED. R.G.W.
 CHECKED. K.W.
 DATE. 18-6-71
 SCALE. 1:500
 FIG. 5

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(A)

(B)

LAKE DORA - CROSS SECTION

1" = 500'
VERTICAL EXAGERATION 2-50

