

**GEOCHEMICAL SAMPLES, MOLYBDENUM AND
COPPER**

FROM PELIAS COVE

24 DECEMBER 1957

57 - 180

LYELL - E.Z. - EXPLORATIONS

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24th December, 1957.

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Geochemical Samples - Molybdenum & Copper

Attached is a review of the recent geochemical work carried out at Pelias Cove and the two diamond drill holes on the Mount Lyell Mining & Railway Company Limited leases.

B. Scott

Geologist-in-Charge

MICROFILMED

1. Diamond Drill Holes - QueenstownA. Positions

(a) D.D.H. N.L. 460 West Lyell Grid 579N: 1364W.

(b) W.L. 100 West Lyell Grid 4156S: 1770W.

All samples were crushed drill-core (i.e. rock).

B. Results

Molybdenum determined spectrographically at Risdon.

Copper determined by wet method at Mount Lyell Mining & Railway Company Limited, Queenstown.

Sample	Depth (feet)	Molybdenum	Copper
<u>N.L. 460</u>			
100	200-205	< 0.0001	< 0.03
101	300-305	< 0.0001	< 0.03
102	400-405	< 0.0001	< 0.03
103	600-605	0.0009	1.25
104	655-660	0.0002	0.27
105	670-675	< 0.0001	1.11
106	750-755	< 0.0001	0.14
<u>W.L. 100</u>			
107	40- 45	< 0.0001	< 0.70
108	105-110	< 0.0001	< 0.70
109	445-450	0.008	1.10
110	525-530	0.002	0.40
111	685-690	0.008	1.00
112	775-780	< 0.0001	0.30
113	845-850	0.0004	1.20

C. Conclusions

On a generalised arithmetical ratio basis:

(a) High molybdenum values carry correspondingly high

copper values (cf. 103, 109 and 111; and 110).

- (b) High copper values do not necessarily carry high molybdenum (cf. 105, 107, 108 and 113).

Molybdenum therefore must have a more restricted distribution than copper and from the drilling sections it appears to be restricted to the hanging wall portion of the copper ore-zones, approximately the upper third of each section.

- (c) From these results it follows that there is no advantage to be gained by analysing rock samples for molybdenum rather than copper.

2. Pelias Cove

The location of the samples is shown on the accompanying plan: the results are as plotted on the graph. The following points are noticeable:

- (a) The almost perfect symmetry of the lead, zinc and copper (with 541 and 542) anomalies on 150S about the projected strike of the sulphide-zone located on the beach.
- (b) The absence of similar lead and zinc values on this line of strike on 200S. This point emphasises the need of taking at least 3 sample traverses across a suspected sulphide-zone.
- (c) On traverse 150S molybdenum is associated with the position of the sulphide zone as outlined by the extension southwards from the beach and the symmetry of the lead and zinc anomalies (cf. samples 516, 518, 519, 520 and 532). Sample 539 is in a similar position on traverse 200S. Only sample 537 is not associated with this zone, and that with a copper low.

It is interesting to note that none of these molybdenum highs are associated with the copper highs.

Conclusions on these samples

- (a) The soil sampling indicates that the mineralised zone located on the beach may extend southwards to at least traverse 150S. This must indicate that the D.D.H. L3 and L2 were either drilled at too shallow a depth, or with the dip of the mineralised zone.
- (b) On weathering, molybdenum does not accompany the copper but remains closer to the sulphide zone. The copper, being highly soluble, has been carried some distance from this inferred zone (distances up to 100 feet), whilst the molybdenum has remained at or near the zone (within 50 feet). Thus it appears that the molybdenum, in this case, provides a far more specific target to aim at than the copper.
- (c) It is considered that owing to the low concentrations of molybdenum it cannot be regarded as a substitute for copper assays in geochemical prospecting, however it appears to form a useful adjunct.
- (d) The follow up of this work at Pelias Cove should consist of:
- (i) Geochemical traverse at 00 S and 300 S.
 - (ii) Reconnaissance electromagnetic traverses across the mineralised zone.
 - (iii) If (i) and (ii) are encouraging, a diamond drill hole would need to be considered on traverse 175 S, drilled eastwards.

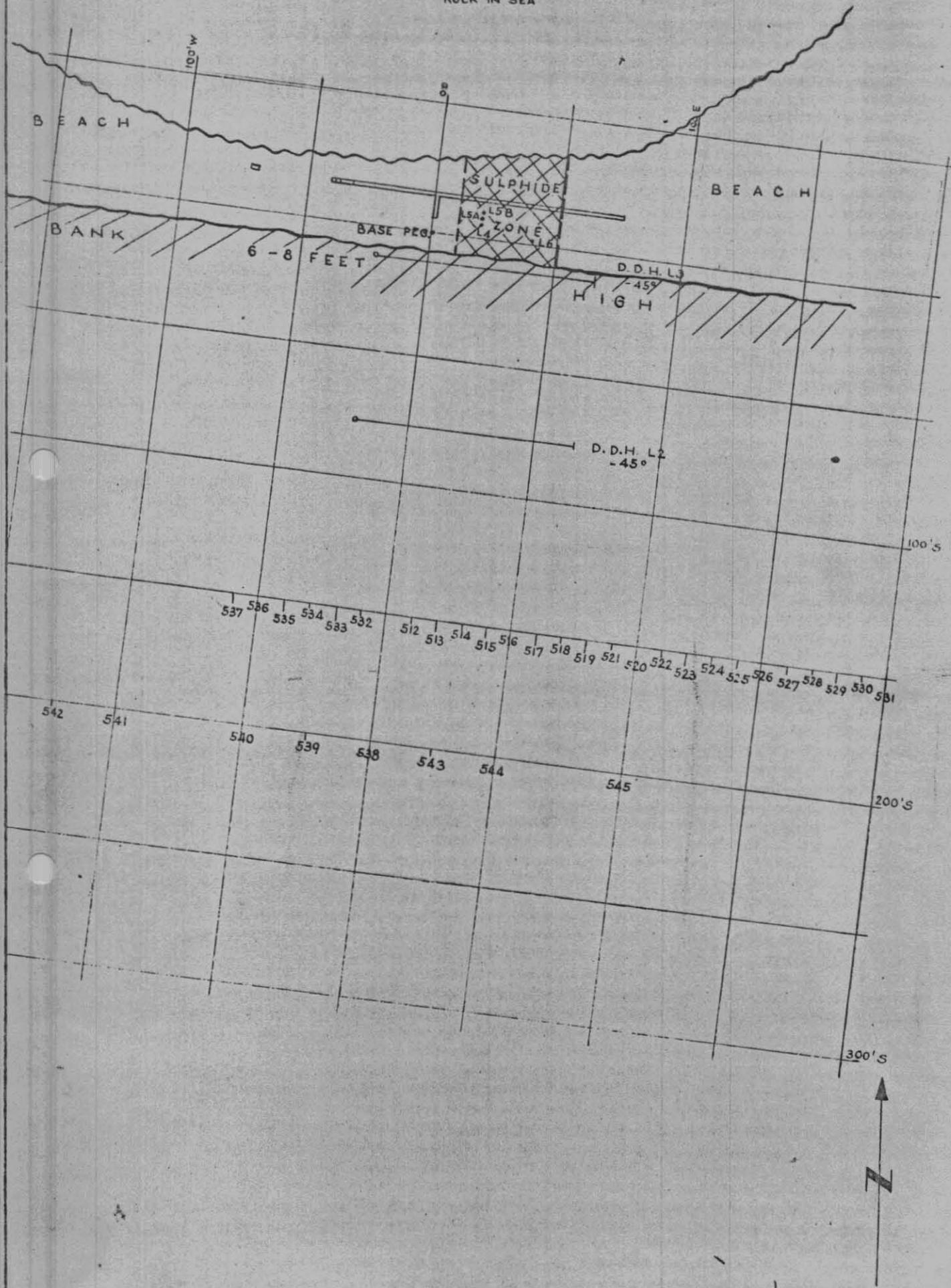
Geologist-in-Charge.

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PELIAS COVE PROSPECT GEOCHEMISTRY

456006

SULPHIDE VEINED
ROCK IN SEA



1" = 50 FEET

L.E.E.
P29

456007

005

005

5 cm

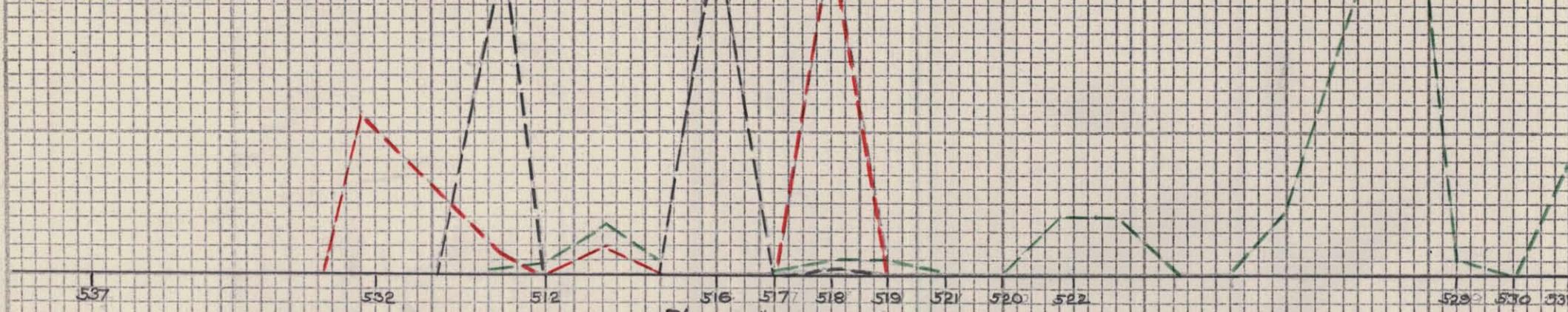
Traverse 200's



50 ft to 541 540
 0.2%
 75 ft to 542
 0.1%

Mineralised
 Zone

Traverse 150's



--- Pb. 1 divn = 0.05%
 --- Zn. 1 divn = 0.05%
 --- Cu 1 divn = 0.025%

Scale: 25 ft. to 1 inch