

1947

GEOCHEMICAL, GEOPHYSICAL AND GEOLOGICAL REPORT

on the

HI NO. 1 CLAIM GROUP

TCHENTLO LAKE

55° 125° S.E.

OMINECA MINING DIVISION

by

W.R. BACON, Ph.D, P.Eng.

Claims held by:
Dr. W.R. Bacon
in trust for N.B.C. Syndicate

Vancouver, B.C.

August 19th, 1969.

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
GEOCHEMICAL SURVEY	3
ELECTROMAGNETIC SURVEY	6
MAGNETOMETER SURVEY	9
GEOLOGY	10
CONCLUSIONS	12
TABLE OF EXPENDITURES	13

LIST OF ILLUSTRATIONS

Figure I	Group Sketch HI Claim Group	2
Figure II	Frequency Distribution Copper Content in Soils	5
Figure III	High Frequency EM Profiles	8
Photograph	Hi No. 1 Claim Group Picket Line	3
Plate I	EM and Geochemical Surveys 1" = 200'	In pocket
Plate II	Magnetometer Survey and Geology 1" = 200'	In pocket

Department of
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ASSESSMENT REPORT

NO. 1947 MAP.....

HI CLAIM GROUP

INTRODUCTION

The HI No. 1 Claim Group consists of 30 claims located along a northwesterly contact zone on the north side of the Tchentlo Lake. See Figure I. The register of claims is as follows:

<u>Name</u>	<u>Record Numbers</u>	<u>Date of Staking</u>	<u>Date of Record</u>
HI 1-10	63622-63631	September 6, 1968	September 16, 1968
HI 11-18	63831-63838	September 18, 1968	October 11, 1968
HI 19-26	63839-63846	September 19, 1968	October 11, 1968
HI 27, 28FR, 29, 30	63983-63986	October 4, 1968	October 21, 1968

Access to the claim group is by fixed wing aircraft from Fort St. James, 63 miles to the southeast, or by road approximately 60 miles from Fort St. James to the east end of Chuchi Lake and thence about 32 miles by boat up Chuchi and Tchentlo Lakes. Both methods were used.

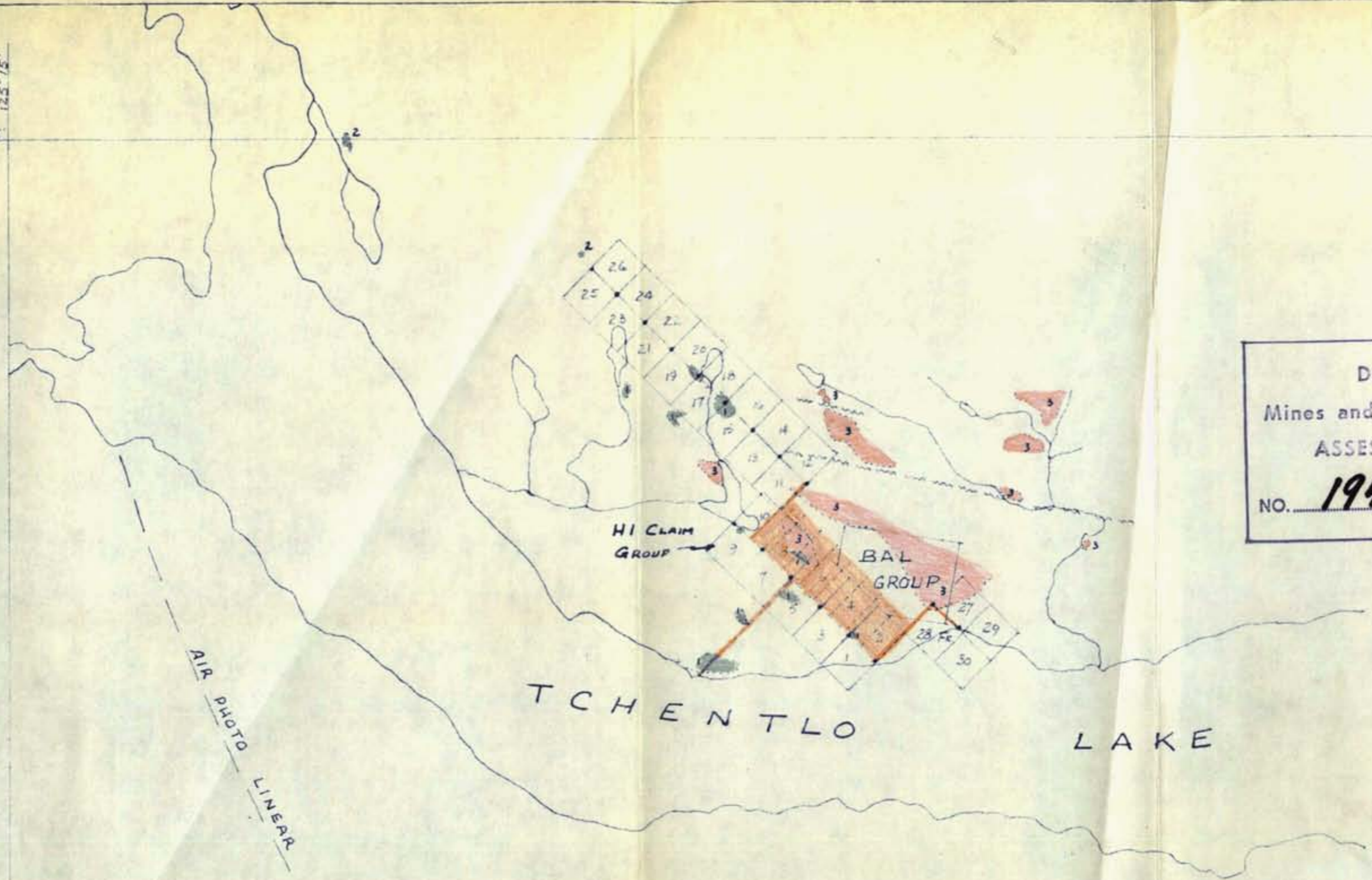
The staked area is characterized by southeasterly trending ridges of glacial debris. Rock ridges outcrop near Tchentlo Lake and northeast of the claims. As is indicated by the geological mapping, very few outcrops occur on the claims.

Exploration work was undertaken to investigate low grade showings of pyrite, molybdenite and chalcopyrite.

Due to extensive windfall in the area, it was necessary to cut a trail from the campsite to the claim location line. This trail, 5200 feet long, was cut as a well defined picket line and was used for access as well as for the various survey techniques.

125° 15'
55° 15'

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NO. **1947** MAP **#1**



LEGEND

- GRANODIORITE
- LIMESTONE
- VOLCANICS
- FAULT
- PICKET LINE GRID

GROUP SKETCH
HI CLAIM GROUP

SCALE 1:50,000 FEB. 1969

FIGURE I

Spacing of the picket lines was 800 feet and the extent of the grid is shown in Figure I. The photograph below shows graphically the necessity for these lines and the reason for high costs.

Hi No. 1 Claim Group Picket Line



GEOCHEMICAL SURVEY

Method

Soil samples were collected at 100 foot intervals on picket lines and at 200 foot intervals on base lines. The 'B' soil horizon, buff to brown in colour, was sampled where possible and was reached at depths of 8 to 16 inches. In isolated cases as at 56NW, 14NE, rock outcrop and rubble precluded soil development and no sample was taken. In swamp areas, the proper horizon could not be reached and no samples were taken.

Soil was collected in Hi Wet Strength Kraft paper bags 3½" x 6-1/8" in size. These samples were hung outdoors at the campsite until dry. After drying the samples were sifted through a 40 mesh brass screen, supplied by Hoskin Scientific, Montreal. These screens have been used on a number of surveys and no evidence of contamination of samples has been apparent from this source.

Sifted soil samples were tested in the field by the rub-
eanic acid method for copper, and then forwarded to Bondar-Clegg &
Company Ltd., North Vancouver, for determination of copper and molybdenum
content. Extraction procedures were: for copper - hot HNO₃ - HCl;
for molybdenum - pyrosulphate fusion. Determination methods were:
for copper - atomic absorption; for molybdenum - colorimetric.

Results and Interpretation

Plate I "EM and Geochemical Surveys" shows the geochemical results obtained. Figure II "Frequency Distribution" shows the distribution of these values. The very great majority of the copper determinations may be seen to fall within the range of background values. Inspection of the remaining values, i.e. those above 80 ppm Cu, indicates these are normally isolated and generally occur in areas of rock outcrop showing sulphide mineralization.

The molybdenum determinations show extremely low values, generally "not detected" as shown by a small dash mark on Plate I or in the range 1 to 3 ppm. Only on claim BAL 2 near 00 NW;30 + 00 NE are significant values obtained. This is in the vicinity of an outcrop area showing significant sulphide mineralization.

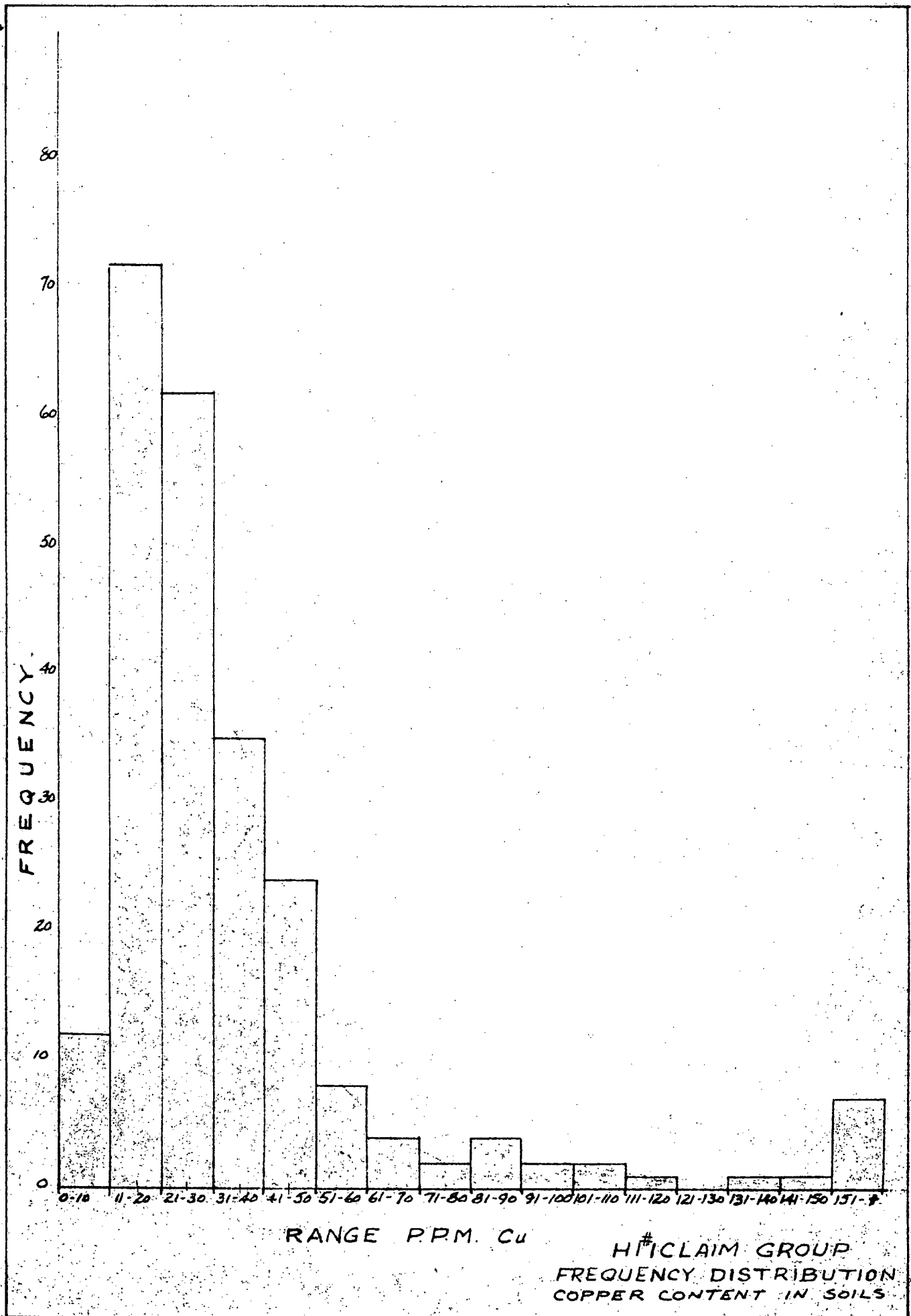


FIGURE II

Two conclusions are possible from the results obtained. First, it may be assumed there is not sufficient sulphide mineralization in the area to produce significant geochemical anomalies. Secondly, it may be concluded that the soil conditions are such in this area that the routine soil sampling methods used are not adequate. To test this possibility a number of pits should be dug to examine the various soil horizons and each should be sampled as an orientation survey for further geochemical investigation. At the time of the survey being reported, there was not sufficient time available to allow for an orientation survey before the soil sample program was carried out.

The conclusion reached is that routine soil sampling is not adequate in this area and the lack of geochemical anomalies does not rule out the possible presence of sulphide mineralization. This conclusion is based in part on the fact that no geochemical anomaly is indicated along the location line of HI 27 and 28 FR, which lies in the "down glacial" direction from outcrops showing significant pyrite, chalcopyrite and molybdenite mineralization. The area surveyed is of low relief above Tchentlo Lake and it may be that local glacial lake high water levels prevented oxidation and dispersion of copper, molybdenum ions through these soils to produce anomalies.

ELECTROMAGNETIC SURVEY

Purpose

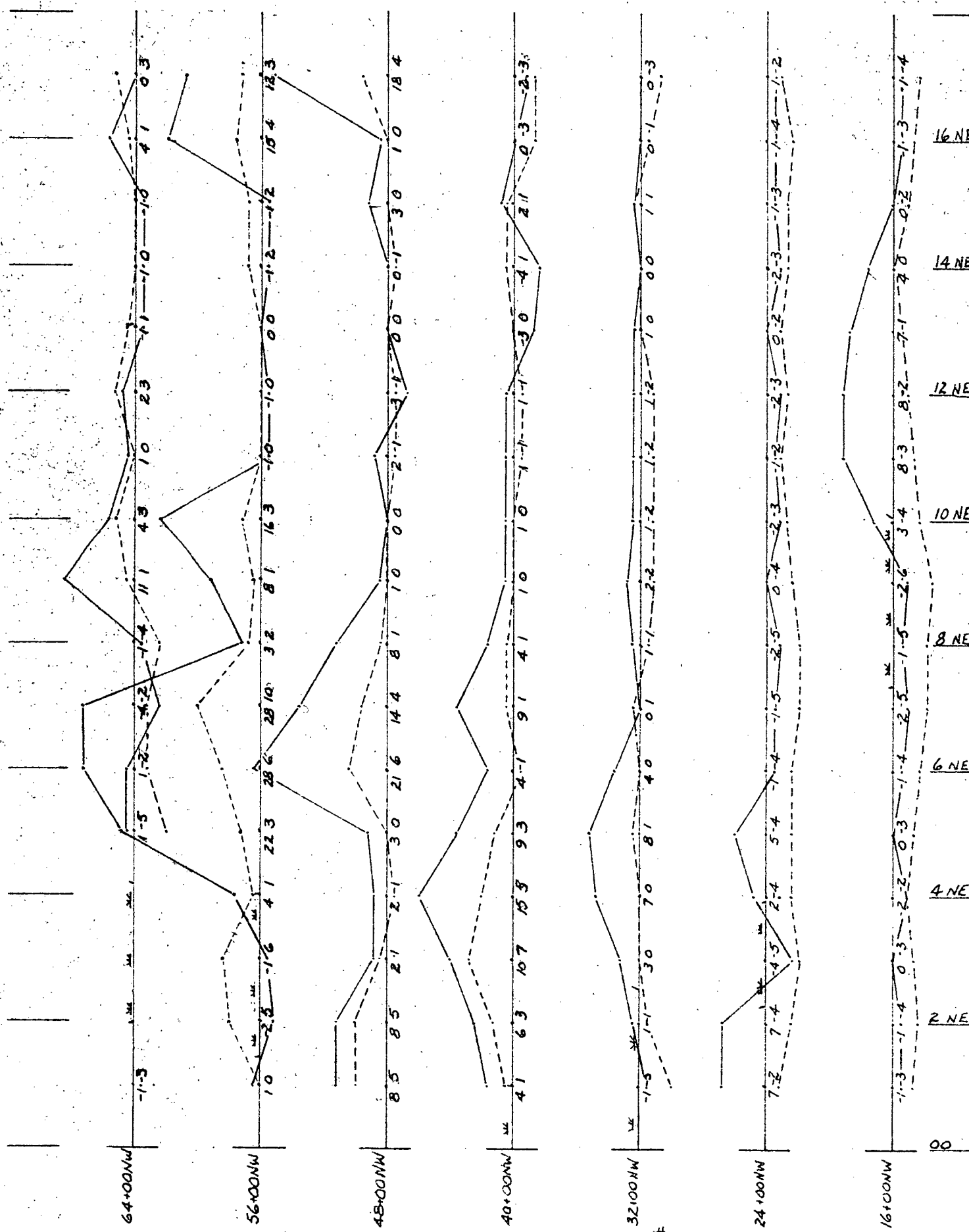
An EM survey was carried out to test for possible conductive zones along the assumed granitic-volcanic contact in the vicinity of low grade mineralization in the granitic rocks.

Method

A McPhar VHEM unit was used to conduct a horizontal coil EM survey at operating frequencies of 600 and 2400 c.p.s. A 200 foot cable separation was used throughout the survey. Both inphase and quadrature readings were taken at each frequency at 100 foot intervals as shown on Plate I "EM and Geochemical Surveys".

Results and Interpretation

Testing of the instrument on the trail extending from the Tchentlo Lake camp to the base line indicated high positive inphase readings could be expected in areas of relatively steep topography. This evidence was used to compare the positive readings obtained during the survey. Figure III exhibits profiles of the high frequency readings obtained on some of the survey lines. The nature of these positive readings, together with the lack of concurrent out of phase changes and the relatively steep south facing slopes indicate no significant conductive zone is present on most of the lines. However, south facing slopes occur on lines 64 NW at 4 NE to 9NE, 56 NW at 4 NE to 10 NE and 48 NW from 4 NE to 8 NE. EM results in these areas differ from results obtained on south facing slopes north of the swamp on lines 40 NW, 32 NW, 24 NW and 16 NW, where smooth positive inphase profiles are obtained with flat out of phase profiles. The results suggest weakly conductive zones at 64 NW - 7 NE; 56 NW - 3 NE; 56 NW - 8 NE; and 48 NW - 4 NE.



— IN PHASE
 - - - OUT OF PHASE

HILL CLAIM GROUP
 HIGH FREQUENCY EM. PROFILES

FIGURE III

These zones occur in an overburden area approximately along the granitic-volcanic contact south of minor mineralization in line 56 NW from 9 NE to 12 NE. A boulder of mineralized volcanic rock was found at 64 NW, 5 NE.

The EM survey indicates no strong conductive zones but outlines two weak zones where conditions are favourable for further geochemical investigation.

MAGNETOMETER SURVEY

Purpose

A Sharpe fluxgate MF-1 magnetometer was used in an attempt to (1) more closely define the granitic-volcanic contact, (2) to investigate the granitic rocks because of the presence of pyrrhotite in mineralized fractures near 18 NE on line 40 NW, and (3) to attempt to find the source of magnetic copper bearing float found during earlier prospecting.

Method

Readings were taken with the MF-1 magnetometer at 100 foot intervals with values being reduced to a constant level by repeating stations at approximately one hour intervals. Because of the extremely dense windfall it was not possible to cross from line to line with the instrument and as a result a base line station was repeated for each picket line immediately after reading that line.

Results obtained on the claim group are shown on Plate II "Magnetometer Survey and Geology".

Results and Interpretation

The magnetic readings indicate a relatively flat magnetic field parallel to the supposed granitic-volcanic contact. A very weak magnetic low corresponds fairly well with the weak conductive zones indicated by the EM survey but these lows are too weak to be of any diagnostic value.

On the base line a magnetic anomaly is indicated, but not delineated, between 8 NW and 16 NW. This anomaly is probably within the volcanics and may be of importance as a possible source of the magnetic copper bearing float.

The zone, however, did not respond geochemically and is not efficiently covered by either the EM or magnetic surveys. Further detailed work is indicated.

GEOLOGY

Plate II "Magnetometer Survey and Geology" shows the approximate distribution of outcrop on the HI claims. Because of the 800 foot spacing of the picket lines and the extremely bad windfall conditions, some outcrop between lines 40 NW and 64 NW has not been plotted. It was deemed misleading to sketch in additional outcrop where pace and compass control was impractical between picket lines. The outcrops not plotted occur almost exclusively in the granitic areas except for a small additional area of volcanics at about 54 NW, 10 NE.

Only two rock types are designated. The volcanics from north to south consist of three main types: (1) Small "dioritized"

remnants within the intrusive which were probably of andesitic or dioritic composition originally. (2) Andesitic medium to dark green massive flows south of the base line which exhibit a porphyritic phase on line 42 NW from 6 SW to 8 SW. This phase is separated from the more massive flows by a narrow band of carbonatized material. The porphyritic phase is pale green in colour with small scattered feldspar phenocrysts in the north portion. It gradually becomes coarser grained and more densely packed with phenocrysts to the south. (3) From 24 SW on line 42 NW thin fine grained flows give way to tuffaceous and agglomeratic beds which are exposed intermittently to the north shore of Tchentlo Lake.

The volcanic sequence is intruded by a large granitic mass which was classed as granodiorite in the field. This is a portion of the southwest margin of the Hogem Batholith described by J.E. Armstrong in G.S.C. Memoir 252. This is a grey to slightly pink medium grained rock. Elsewhere in the area a number of variations are evident, but on the claims in question the intrusive is everywhere much of the same character. As indicated on Plate II minor pyrite, chalcopyrite, pyrrhotite and molybdenite mineralization was found. Practically all of this mineralization occurs on fractures and joints. Some of these fractures also contain narrow quartz stringers which are themselves sometimes mineralized, usually with pyrite.

The most intense mineralization was observed on the BAL claims where the intrusive appears well fractured. This fracturing dies out rapidly to the northwest.

Pyrite is evident in the volcanics on the contact at 55 NW, 9 NE and pyrite, chalcopyrite and malachite occur in float on line 64 NW near the small lake. Elsewhere very minor chalcopyrite mineralization was observed occasionally in the volcanics.

CONCLUSIONS

The mapping and geophysical surveys do not outline adequate targets for further exploration. However, the low grade mineralization present on the BAL claims to the north suggest further work is warranted.

The geochemical results indicate this method is not readily applicable here to outline the mineralized zone.

An I.P. survey is suggested as the best method of further exploration.

TABLE OF EXPENDITURES

(1) Aircraft for linecutters	\$326.00
(2) Linecutting contract, Sharan & Owens Construction Ltd.	2,967.55
(3) E. Leith - linecutting Oct. 24th & 25th	45.00
(4) D. Lovett - foreman and geophysical operator - Oct. 22nd - Nov. 12th	465.00
(5) D. Forsyth - helper - Nov. 3rd - Nov. 12th	229.00
(6) J.C. Stephen - Exploration Superintendent - Oct. 17th, Oct. 28th - Nov. 4th	315.00
(7) Geochemical Analysis - Bondar-Clegg	342.60
(8) Rental MF-1 magnetometer and VHEM horizontal loop EM	<u>162.50</u>

TOTAL COSTS CHARGED TO PROGRAM \$4,852.65

W.R. Bacon, Ph.D., P. Eng.

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Declared before me at the City
of Vancouver, in the
Province of British Columbia, this 19
day of August 1969, A.D.

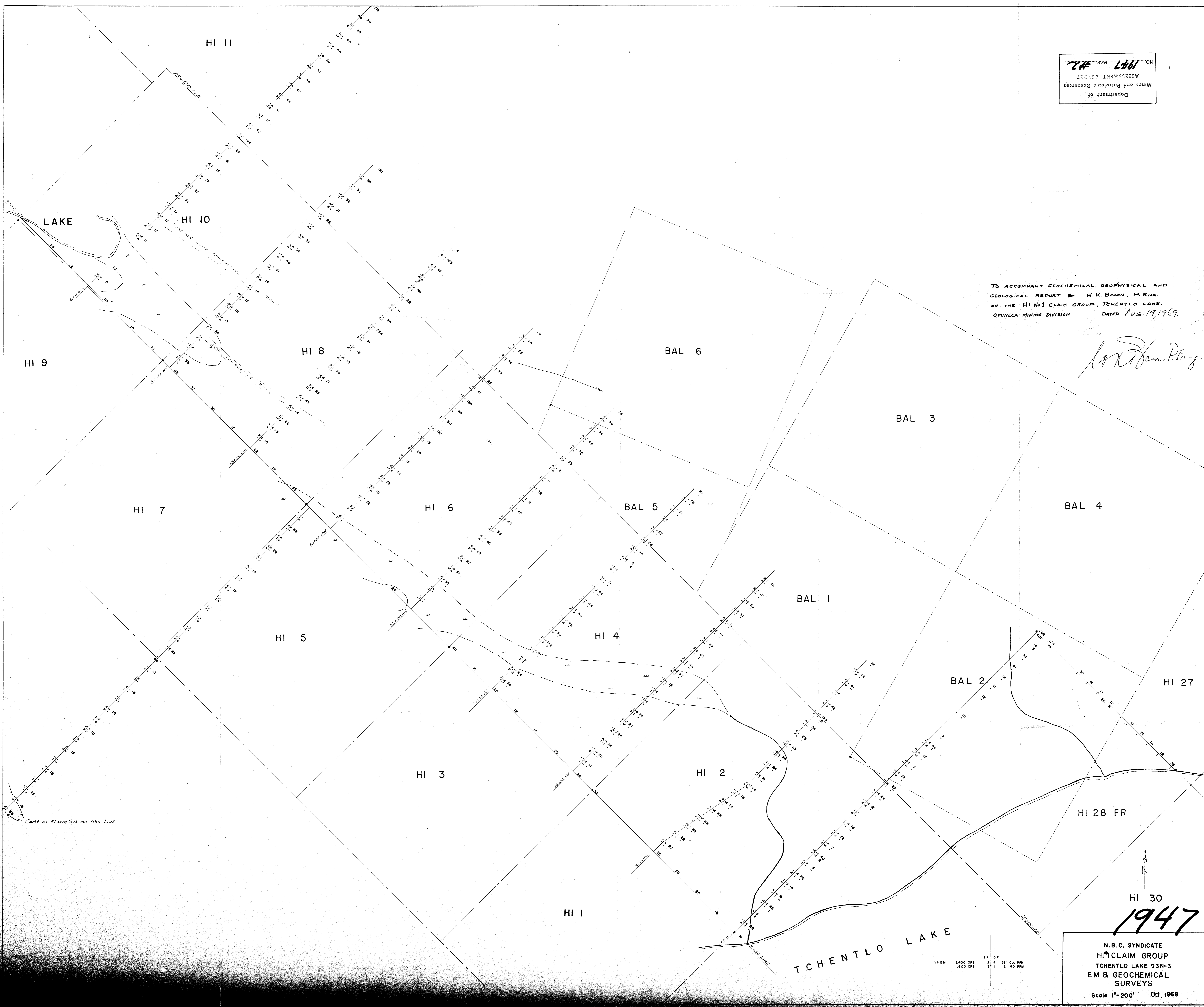
W.R. Bacon

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A Notary Public and for the Province of British Columbia
SUB-MINING RECORDER

Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 1947 MAP #2

TO ACCOMPANY GEOCHEMICAL, GEOPHYSICAL AND
 GEOLOGICAL REPORT BY W.R. BACON, P. ENG.
 ON THE HI No1 CLAIM GROUP, TCHENTLO LAKE,
 OMINICA MINING DIVISION DATED AUG. 19, 1969.

W.R. Bacon

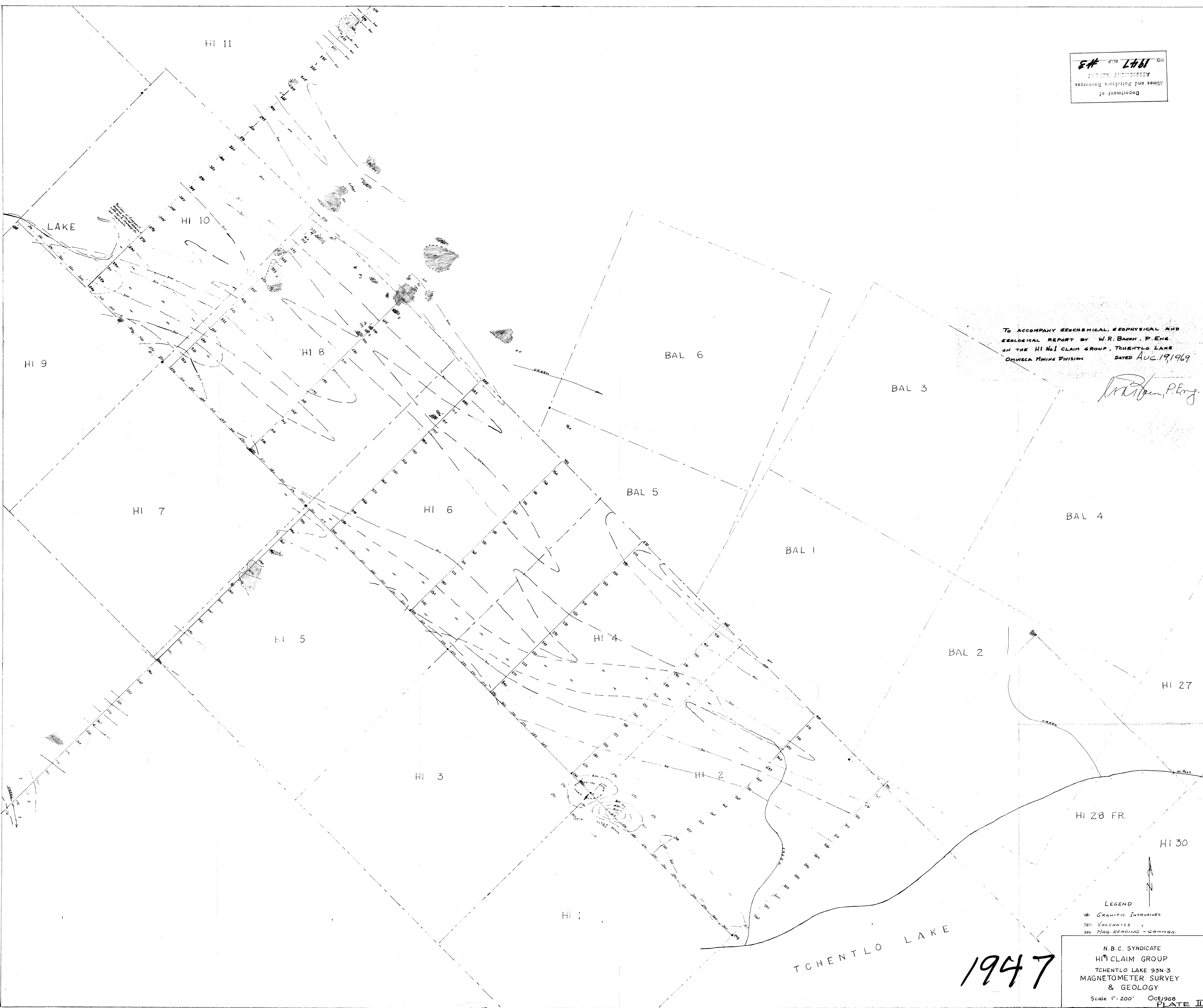


HI 30
 1947
 N.B.C. SYNDICATE
 HI¹ CLAIM GROUP
 TCHENTLO LAKE 93N-3
 EM & GEOCHEMICAL
 SURVEYS
 Scale 1"=200' Oct. 1968

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1947
#3

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OMEGA MINING DIVISION DATED AUG. 19, 1969

W.R. Bacon, P. Eng.



LEGEND
* GRANITIC INTRUSIVES
VOLCANICS
200 MAG. READING - GAMMAS.

N.B.C. SYNDICATE
HI¹ CLAIM GROUP
TCHENTLO LAKE 93N-3
MAGNETOMETER SURVEY
& GEOLOGY
Scale 1" = 200' Oct 1968
PLATE II

1947

TCHENTLO LAKE

LAKE

CREEK

CREEK

HI 27

HI 28 FR.

HI 30

HI 1

HI 3

HI 5

HI 4

HI 6

BAL 5

HI 7

BAL 1

BAL 4

BAL 2

BAL 6

BAL 3

HI 11

HI 10

HI 8

HI 9