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April 27 - June 16, 1969.

CASCO HOLDINGS LTD.

CHAL CLAIM GROUP

MENZIES BAY AREA,

NANAIMO MINING DIVISION

GEOCHIMICAL SURVEY

72K03W

Chal claim Group, 13 miles N W of Campbell River, 50, 125 S E

REPORT BY: David G. Mark B.Sc.

J. A. Mitchell, P.Eng.



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LIST of MAFS IN POCKET

CLAIMS LOCATION MAP

GEOCHEMISTRY MAPS: (i) Holman Test

(ii) Hot Acid Extraction

(iii) Rock Dust Samples

Department of Mines and Patroleum Resources

ASSESSMENT REPORT

NO. 2004 MAP

FIELD REPORT SUBMITTED TO CASCO HOLDINGS ON THE CHAL CLAIM GROUP. July, 1969.

A soil and rock geochemical program was carried out on

To accompany Report by J. A. Mitchell, P. Eng.

INTRODUCTION

the Chal group of claims from April 27 to May 16,1969. In addition, rock drilling and blasting was done from May 5 to 16 and May 29 to June 16, 1969 by a 2 man crew. The property is located about 13 miles north of Campbell River on the Island Highway (19) in the Nanaimo Mining District of British Columbia. (see location map at the end of the report.) The Chal group is composed of the Chal claims 1 - 7, Norm claims 1-7, Allen claims 1-6, B.B. claims 1-6, and the Star claims 1-6. Access to the property is excellent, since the Island Highway and three one-lane gravel roads pass through The elevation of the property varies from about 100 feet to 600 feet. Much of the property is rocky with numerous small cliffs (up to 25 feet high). A number of small creeks flow through it and one large one, Menzies Creek, flows southerly on the east end of the property. The object of the survey was to locate additional areas of copper mineralization through soil and rock geochemistry, similar to those already known. The plan was to test these samples by the Holman copper test, and then to test the samples in any anomalous areas by the hot acid extraction method. It was thought that this procedure would prove to be the most economically feasible way of achieving the objective. The area being quite rocky, it was thought

that a program of rock geochemistry would also be quite useful.

SURVEY METHOD

Two base lines (almost perpendicular to each other, as shown in figure 1b) were cut out, blazed, chained, compassed and marked every 100 feet with yellow flagging tape. A two man crew ran crosslines out from the base lines every 400 feet, and picked up soil samples every 100 feet on these crosslines.

The direction of the crosslines off of BL-1 is N 35 E and off of L-60 N(the second base line), N 65 W. Each soil sample location was marked with red flagging tape. The soil horizon sampled was the B, or the A horizon in spots where B did not exist. The samples were taken by a spade and dug down until the B horizon soil was obtained. Due to much rock and lack of soil, some stations were not sampled.

A series of holes were drilled approximately one foot deep, spaced 25 feet apart in areas of known copper mineralization. The drill used was a portable, gaspowered, Cobra percussion drill, and the rock dust produced by the drill was packaged for later analysis. Also, rock dust samples were taken at soil sample stations in areas of extensive bedrock. In addition, most of the claim posts were located.

These were mapped in fig. 1(a). Many of the claims overlap, and thus only that part of a claim covering new ground was shown.

TESTING METHODS

The Holman copper field test was used by the author to analyse all the soil samples. It is a simple test, and as long as proper lab methods are observed, reliable results can be obtained.

The Holman being a field test the samples do not need to be dried, and silt or soil found in the field is usually fine enough to test, without being screened. However some of the samples were quite rocky and were thus sifted by an 80-mesh screen. A small portion of a fine-grained soil sample is put into a test tube. A weak acid buffer solution is added and then a chemical indicator. It is then well shaken and a colour is obtained. If green, the reading is negative, if colourless (the end point), or red, the reading is Measured amounts of indicator are added positive. to a red solution until the end point is reached. The amount of indicator required for this deteemines the reading, and thus the units are millilitres of indicator. The results are shown in figure 1(b). There seemed to be a concentration of values running northerly through the Chal 1 - 4 claims. It was then decided. upon consultation with J. A. Mitchell, to analyse approximately 100 samples by the hot acid extraction method. These samples were sent to Chemex Labs in North Vancouver, who used for the acid, a mixture of perchloric and nitric. Because a hot, strong acid is used, all the copper ions are extracted, and thus a more accurate reading is obtained than in the Holman copper test. This uses a cold, weak acid solution that only extracts easily dissolved ions such as the oxides and corbonates. Results from the hot acid extraction method are in parts per million and are shown on figure 8. The rock dust collected was sent to Coast-Eldridge Labs where it was assayed in units of per cent copper. The results are shown on figures 2 to 7.

DISCUSSION OF SOIL GEOCHEMICAL RESULTS

The results of the soil samples tested by the Holman copper test are shown on figure 1b. The anomalous areas as marked out on the Chal and Allen claim groups, seem to be trending northwesterly. The anomalous area on the Allen claims is fairly large but no further work was recommended due to the dispute in ownership. Therefore approximately 100 samples were picked from the Chal claims on the anomalous area and sent in to Chemex Labs for hot acid extraction testing. The main object was to see how the results from the 2 types of testing correlated and thus if the money saved by using the Holman test was sufficient to warrant the use of it. The anomalies on the two maps correlate fairly well but many of the individual values do not. One of the main reasons is discussed under TESTING METHODS and the other is due to the excessive rain on the Island. This causes dissolving of the copper minerals that are easily dissolvable such as oxides and carbonates and thus their The less easily dissolved sulphides subsequent leaching. are not leached away as easily, It then can be seen that in drier areas, such as Highland Valley, the 2 testing method would agree with each other more.

DISCUSSION OF ROCK GEOCHEMICAL RESULTS

The property has many areas where there is little soil and much rock outcrop making it difficult to soil sample. In addition, the surface of the rock would be leached and, therefore, copper mineralization would seem to be non-existent. It was thus thought that if a rock drill were to drill to shallow depths (approx. I foot.) at surveyed locations, and the resulting rock dust was to be tested for copper, an appraisal could be made as to how well mineralized the rock was. First rock dust

sampling was made around the known copper showings to find out if there is any extension to the known mineralization (Fig.2-6). Then in areas with little soil, rock dust sampling was also done(Fig. 7). The samples were then taken to Vancouver where they were assayed.

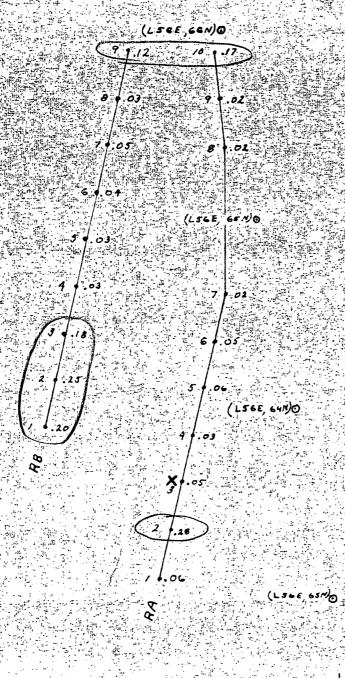
The values considered interesting are circled in red and as shown are those of 0.1% copper or more. Though this value is notably below that of mineable ore. it does show that there is some copper mineralization. In figure 2, the native copper mineralization seems to be sporadic as is shown by low copper values near the 2 showings. The anomalous area on line RE is the most interesting and could perhaps be explored further. The results in fig. 3 do not reveal much extension to what is already known. The more southern anomalous area, even though it is around the chalcocite showing has low assay results and it thus seems the chalcocite is quite limited in occurence. The more northern anomaly is well surrounded except on one side, by low values and it also seems limited. Fig. 4 is a little more promising. The 3 small anomalous areas, one of which is on the showing, could be further examined to see if they are connected. Little was found on the area shown on fig. 5. The more eastern, larger anomaly is directly around the known mineralization. The western anomaly is small, but a little encouraging, and could be further examined. The results shown on fig. 6 show no encouragement. The area around the one high value has little copper mineralization. The set of drill results shown on fig. 7 found nothing new and are worth no further examination.

The results, overall, are not encouraging. The rock dust sampling for all the areas sampled reveal that the mineralization occurs in small pockets which is uneconomical for mining purposes. However, some of the

anomalies, as noted above, could be further examined, though not much should be expected.

Respectfully submitted:

David Mark, B.Sc., Geophysicist.



.21.

X Cu showing
/ drill hole
O soil sample location

ROCK DUST SAMPLES

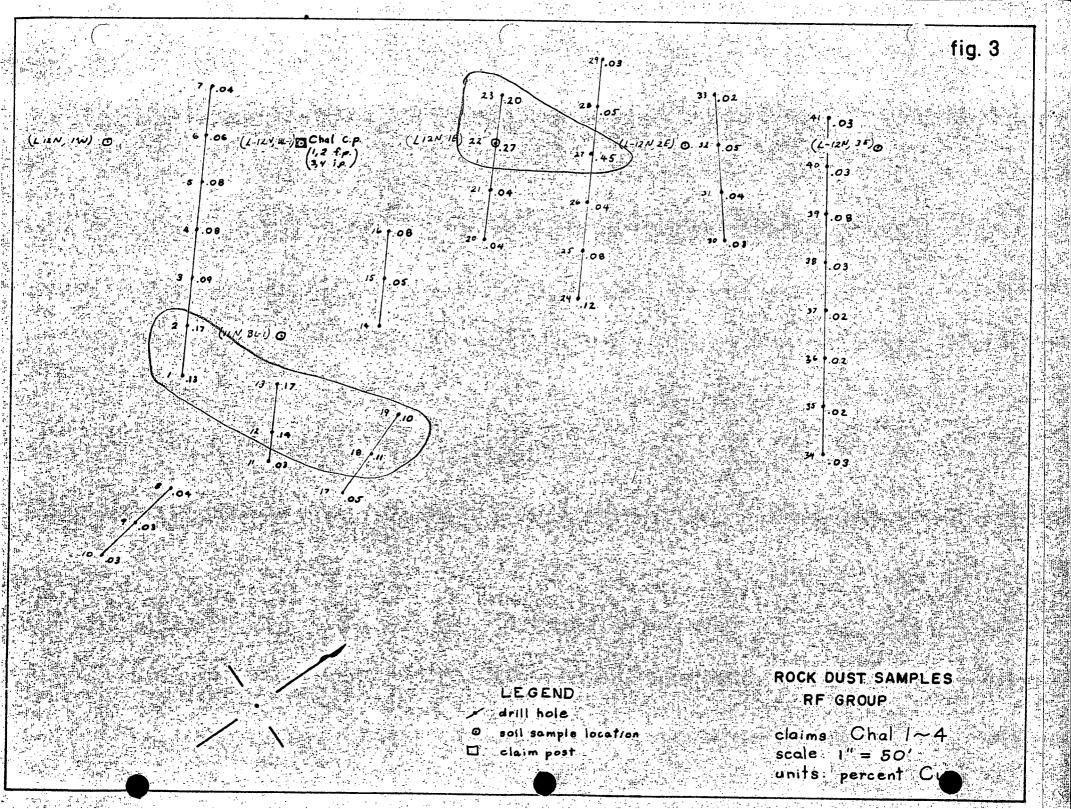
RA — RE GROUP

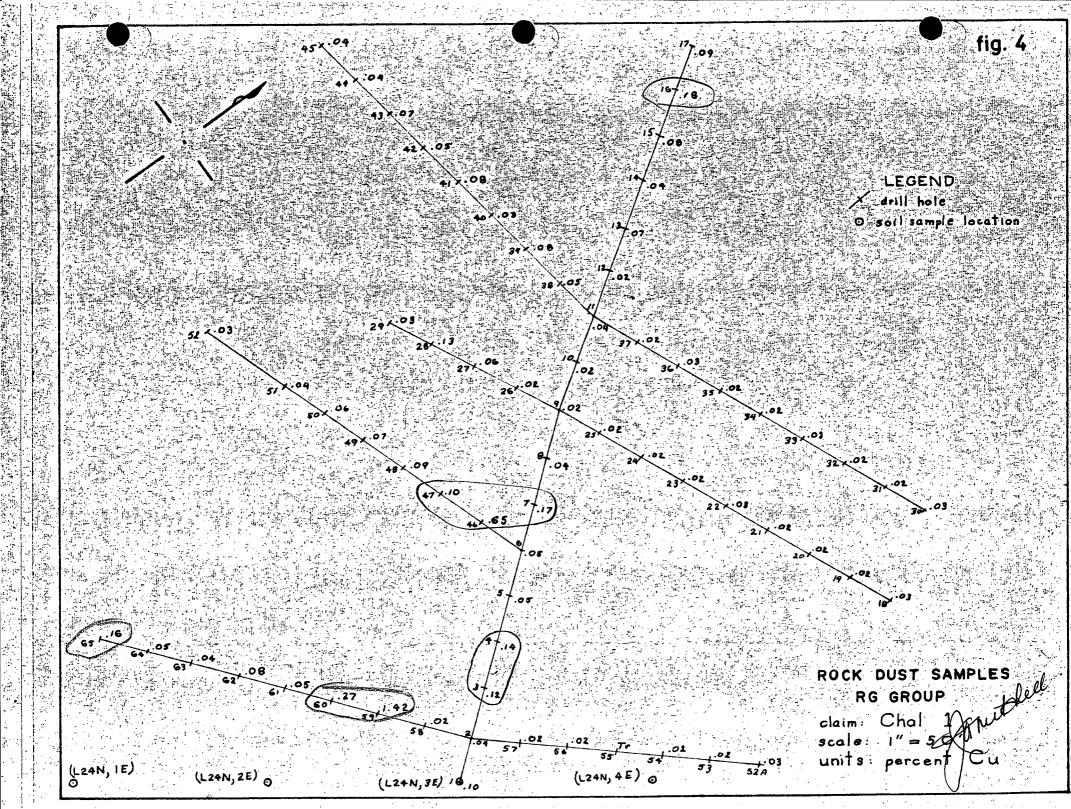
claim: Star 2

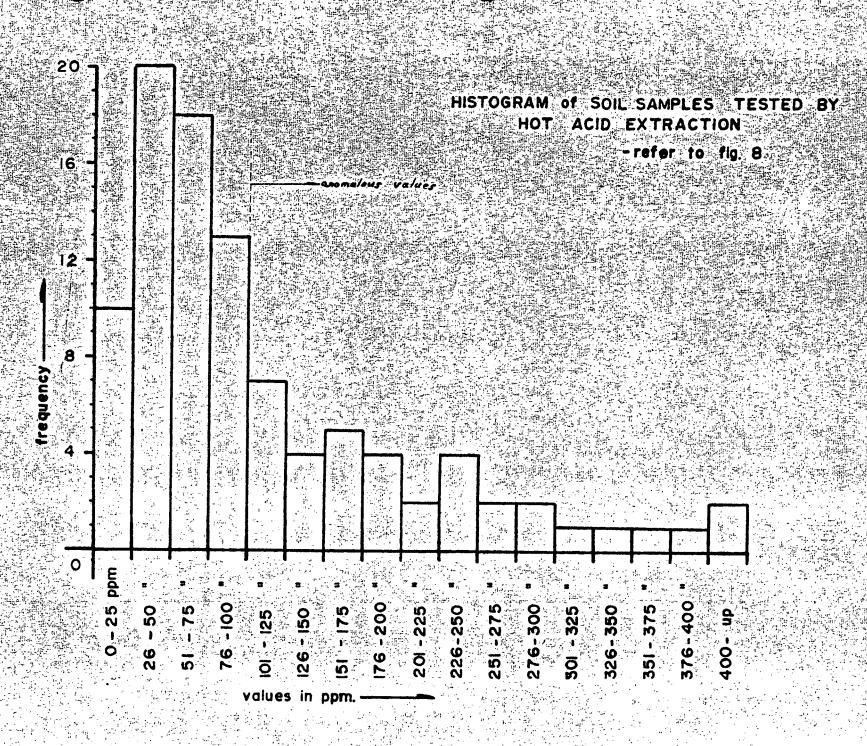
scale: 1" = 50'

units: percent Cu

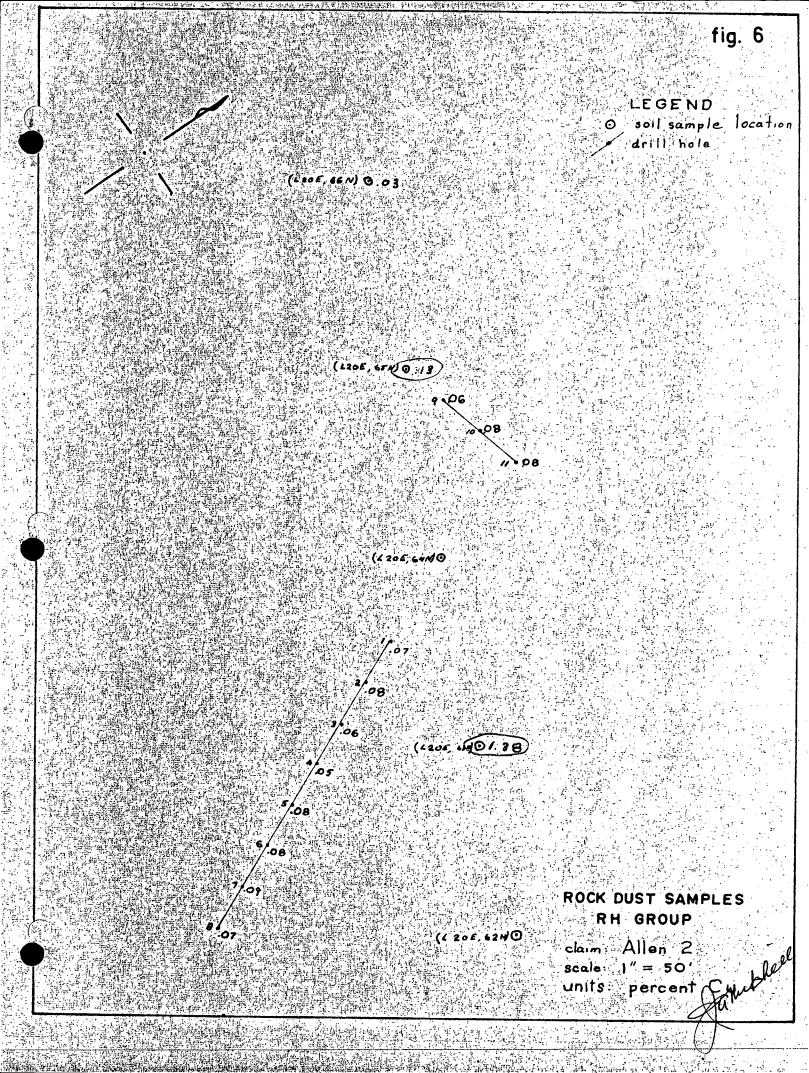
(LGOE, 61N)2 0.02

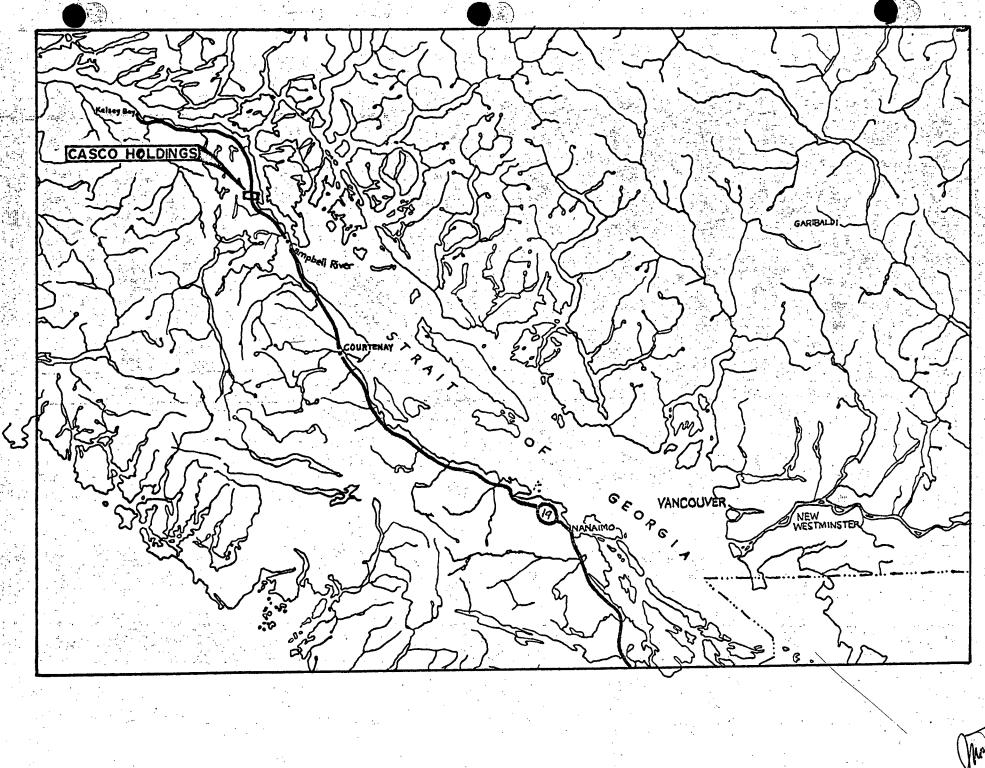






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SURVEYS 5107 VICTORY STREET, SOUTH BURNABY, B.C., PHONE 434-0137

Geophysical Surveys, Ground & Airborne

RESUME OF TECHNICAL AND FIELD EXPERIENCE OF DAVID MARK, B.SC.

EDUCATION.

Graduate of University of British Columbia in Science (B.Sc.) in geophysics.

EXPERIENCE IN INDUSTRY:

- (1) Prospecting and geological evaluation for New Taku Mines Ltd., during exploration season of 1965.
- (11) Field supervisor for geophysical and geochemical work and prospecting for Mastodon-Highland Bell Mines Ltd., during exploration season of 1966.
- (iii) Field supervisor in geochemical work and geological mapping for Anaconda (Canada) Company during exploration season of 1967.
- (iv) Field geophysicist for Geo-X Surveys Ltd. during exploration season of
- (v) Presently geophysicist for Geotronics Surveys Ltd.
- (vi) Experience in various geophysical instrument surveys; magnetometer, electro-magnetic, self potential, gravity, induced polarization, resistivity, seismic methods.





Detailed breakdown of costs:

D. Mark, supervisor, April 27 to May 16, May 31 to June 9, 1969	\$1,500.00
Soil sampling crew, P. Skinner and B. Brown, April 27 to May 16, 1969	1,600.00
Drill crew, M.McIntyre and G. Baron, May 5 to 16, May 29 to June 13, 1969	2,800.00
Soil sample analyses, 944 samples at \$1.00 per sample	944.00
277 rock assays	872.55
Drilling expenses (drill rods & equipment rental, etc.)	1,510.01
Drill rental, May 5 to 16, May 29 to June 13, 1969	420,00
Vehicle rental, April 27 to May 16, May 31 to June 9, 1969	480.00
Survey materials	275.00
Mapping, reports and engineering fees	1,000.00

\$11,401.56

Tam Rahter

Declared before me at the

of

day of

U amanuer, in the

Province of British Columbia, this

29

august 1969, A.D.

A Notary Public in and for the Province of Braisn Co. Sub-mining Recorder

F OCRESS THROPM ON MENZIES BAY PROPERTY OF CASCO HOLDINGS ICD.

the rove company a As required by the principles ling and drilling and consisting of soil s modest progra move romerties. en undertaken on the blasting has blasting was calayed by Forestry remaintains because of hot dry weather but it has now been cor eted. The work was administered by Geotronics Ltd. Mr . Mark f that company supervised the soil sampling, some ack sampling, and survey Mr. Matt "cIntvre did e drilling and blasting. The writer has made a total of the visits to the property and has attempted to determine the status of the claims. Mr. Mark has also done invest gations on the claims and searched the ground for posts. He has been unable to find the posts of the two Summer Moon claims as recorded by Mr. Smith who has a shack on the ground but has apparently done no work on the claims. On the Margaret 8 and 9 claims he has built up a large stack of posts at the post site as a result of alternately staking as agent and owner.

PROPERTY SURVEYS:

Surveys conducted by D. Mark in the course of the soil sampling program has resulted in the location of most of the posts of claim locations in the area, and have revealed that claims are not as shown on the government claim map, that they have been staked in a very erratic manner leaving fractions and are in fact in conflict with other claims. In some cases the validity of the other claims remains in doubt. All are shown on claim map, figure la which will accompany the report by Mr. D. Mark. It will be noted that, on the ground, the BDM group of claims is in conflict with the BB and Allen groups. As they were staked the same day as the BB claims priority of title would be difficult to establish even though the Allen claims were staked early in the day.

See Appendix 1 - which shows recorded data on claims staked in area.

Mr. Polst a states that he taked the Allen claims commencing about 8 a.m. then staked the Star and then came back to stake the BB when he encountered Mr. To the staker the BDM. In other words he had staked 12 claims in the time the other party had staked 4. It is true that he id not have to cut tresh lines as he put his posts where the lo posts are but inastruch as he first staked the Allen claim is is presty corrain that if he made an affidavit regarding the time of staking and the time he met the other party staking that it hould be abvious that he had staked the Allen group before the PBm were staked. As the Allen group covers the showing where trenching was done the BB group is of little or no importance and could be ignored, but the BDM claims cannot be ignored.

SOIL SURVEY:

This survey including those samples taken of rock dust from

shallow dr ll holes in rock where soil was absent suggest that the best mineralization is to be found at those points marked "X" on figure 2B where trenching had been done previously and erratically along northwest-southeast extensions of these areas on the Chal and Allen Groups. Native copper on the Star group appears to be restricted to areas of small limension and is not now considered important. These zones are slown on map 2B.

Because there is some doubt regarding title to the Allen ground, follow-up work in the form of blasting has been confined to the zone of the Chal group at the face of a small bluff where a good exposure of rock could be obtained with relative ease both because it was close to the road and because there are two free faces that can be utilized to good advantage to obtain a good blast. Drilling has been completed some weeks ago but there were forest restrictions which prohibited blasting. This was done on July 15 and 16 and examined by the writer on July 17. The results were disappointing.

RESULTS OF BLAST

Despite the fact that the blast was in the vicinity of the highest geochemical readings, the percentage of mineralized rock in the blast was well below ore percent. To fully evaluate the blast it would be necessary to bulldoze some of the blasted rock away from the faces but it is evident from the material broken that it would not pay to attempt to sort out the highgrade.

COSTS:

The writer does not have a detailed breakdown of cost-ununderstands that invoices totalling \$7400.00 have been submitted by Geotronics for work done to date and that another \$800.00 advance was given to Mr. McIntyre to buy powder and pay himself and one helper. The writer has received \$450.00 for professional services and expenses. It thus appears that \$9000.00 will be about the total cost which is about \$2000.00 more than estimated from the work done. The discrepancy is mostly in the cost of drilling and blasting when unexpected delays and expense were incurred, and in the high cost of board and lodging. The cost however is well under the totals allowed for this type of work in the qualifying report of May 1, 1969.

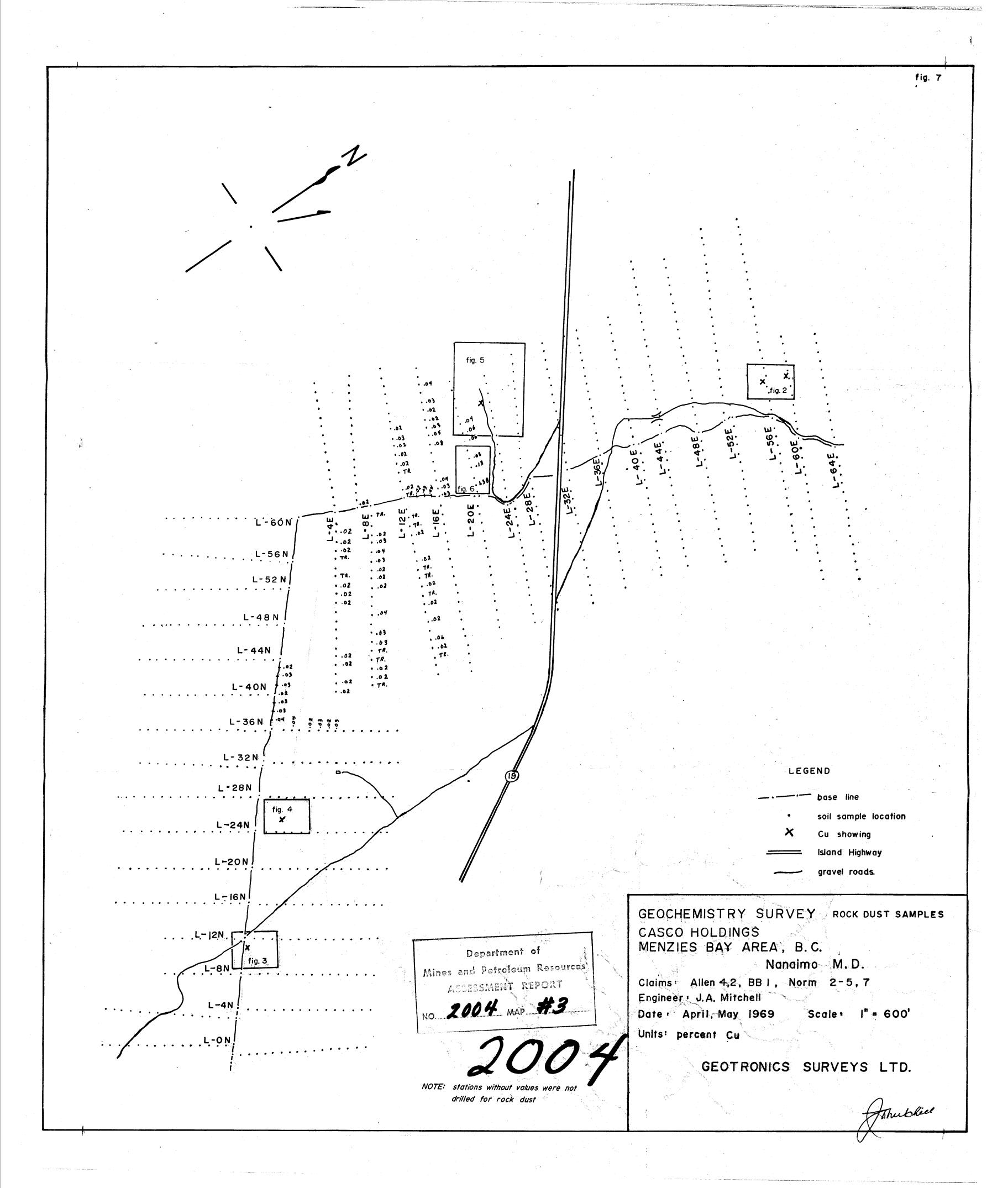
PECOMMENDATIONS .

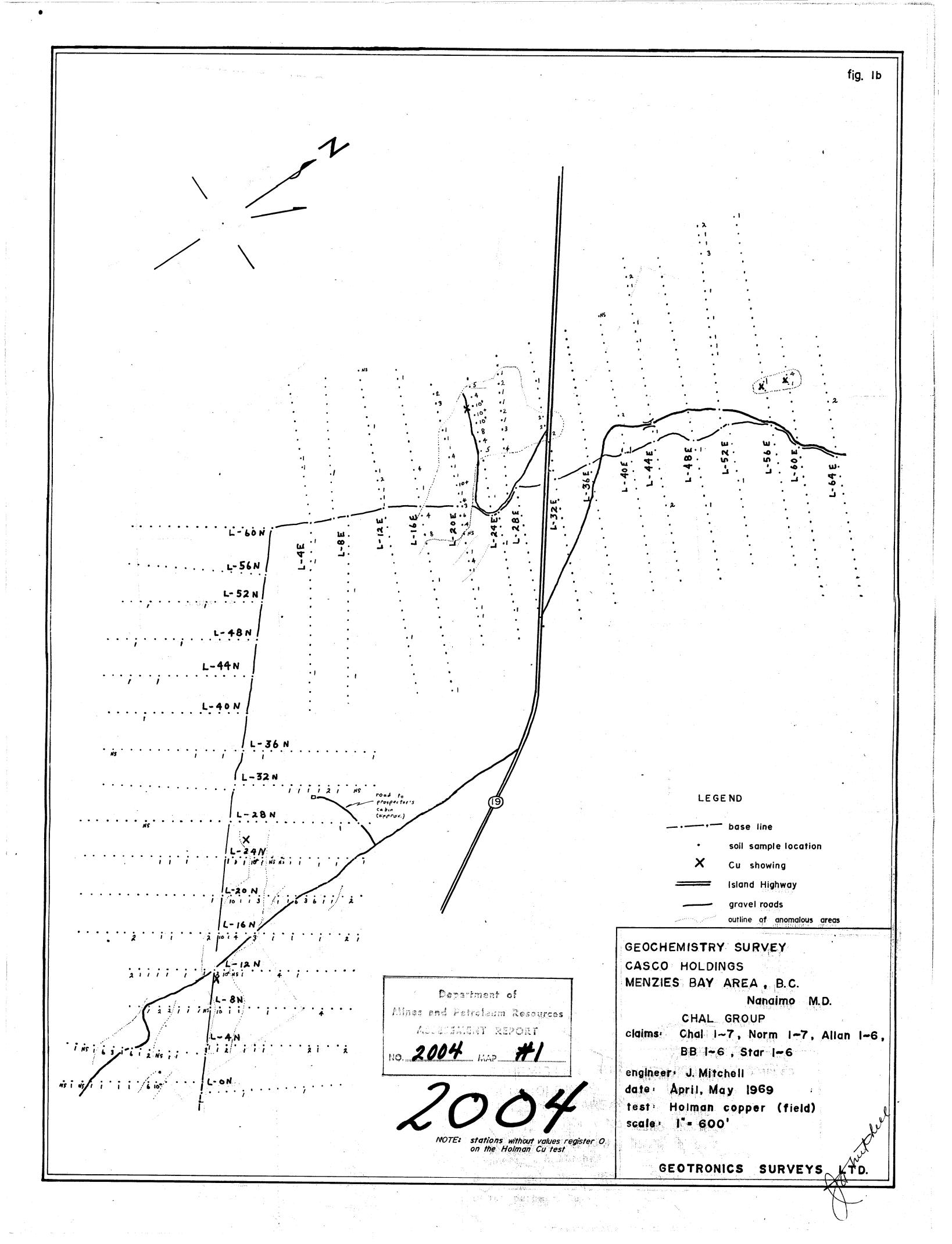
It is recommended hat no further expenditure be made on this property. A senarate report together with maps is being tubered by Geotronics Ltd. which should serve to support this profession.

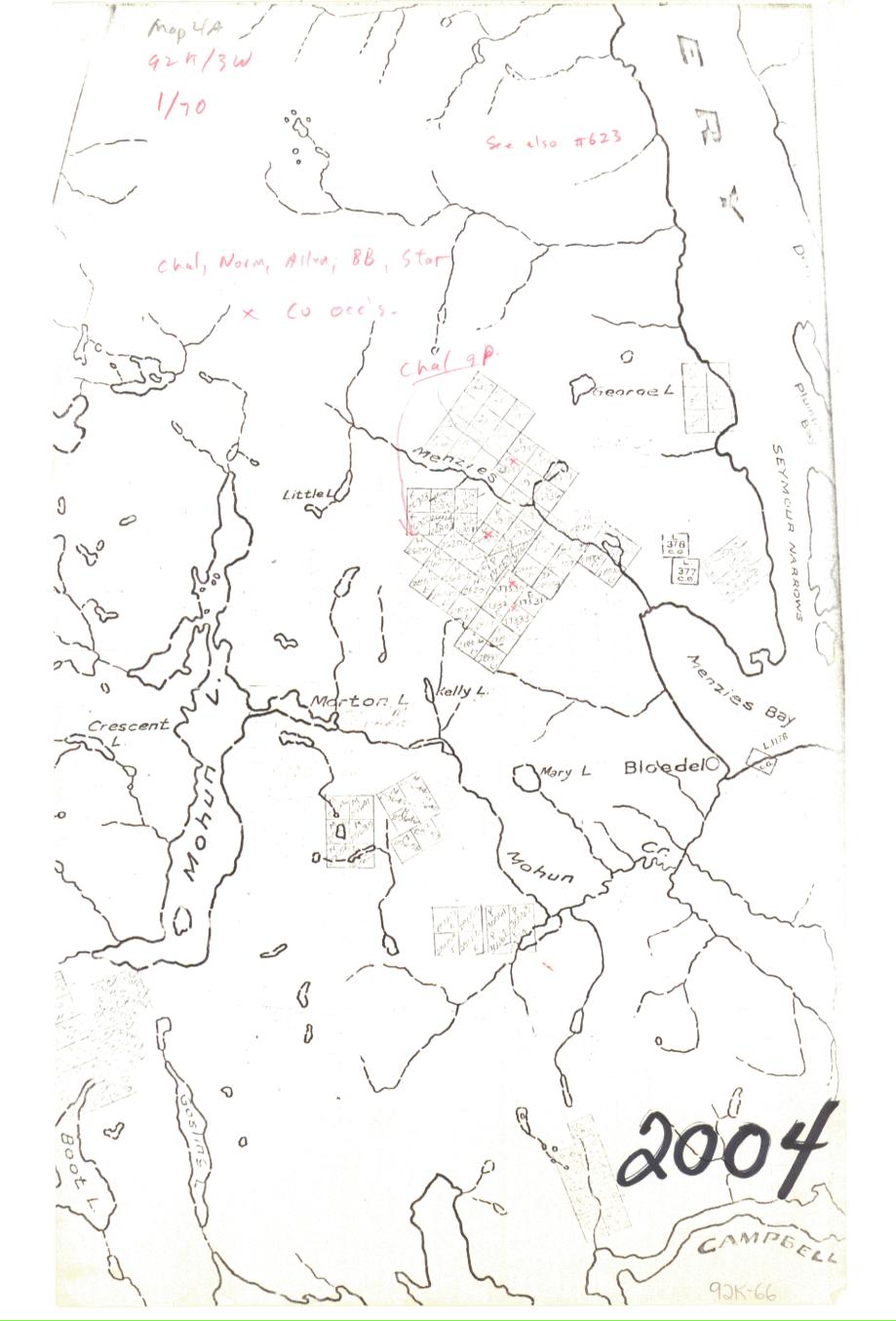
J. A. Mitchell,

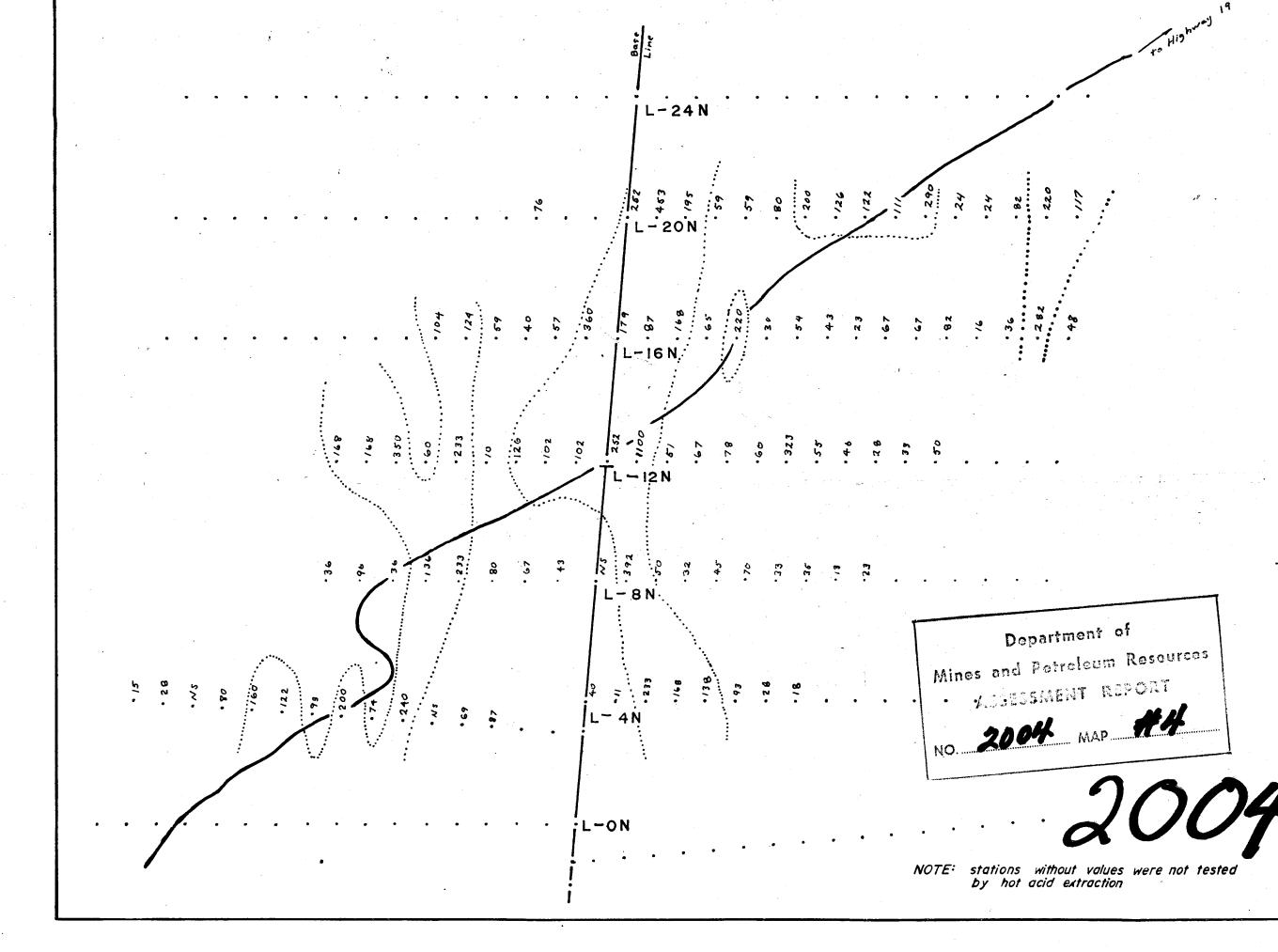
Pespectfully submitted

P. Eng.









LEGEND

base line

soil sample station

gravet road

outline of anomalous areas

GEOCHEMISTRY SURVEY

CHAL GROUP

Menzies Bay Area, B.C. ~ Naniamo M.D.

CASCO HOLDINGS

consulting engineer: J. A. Mitchell

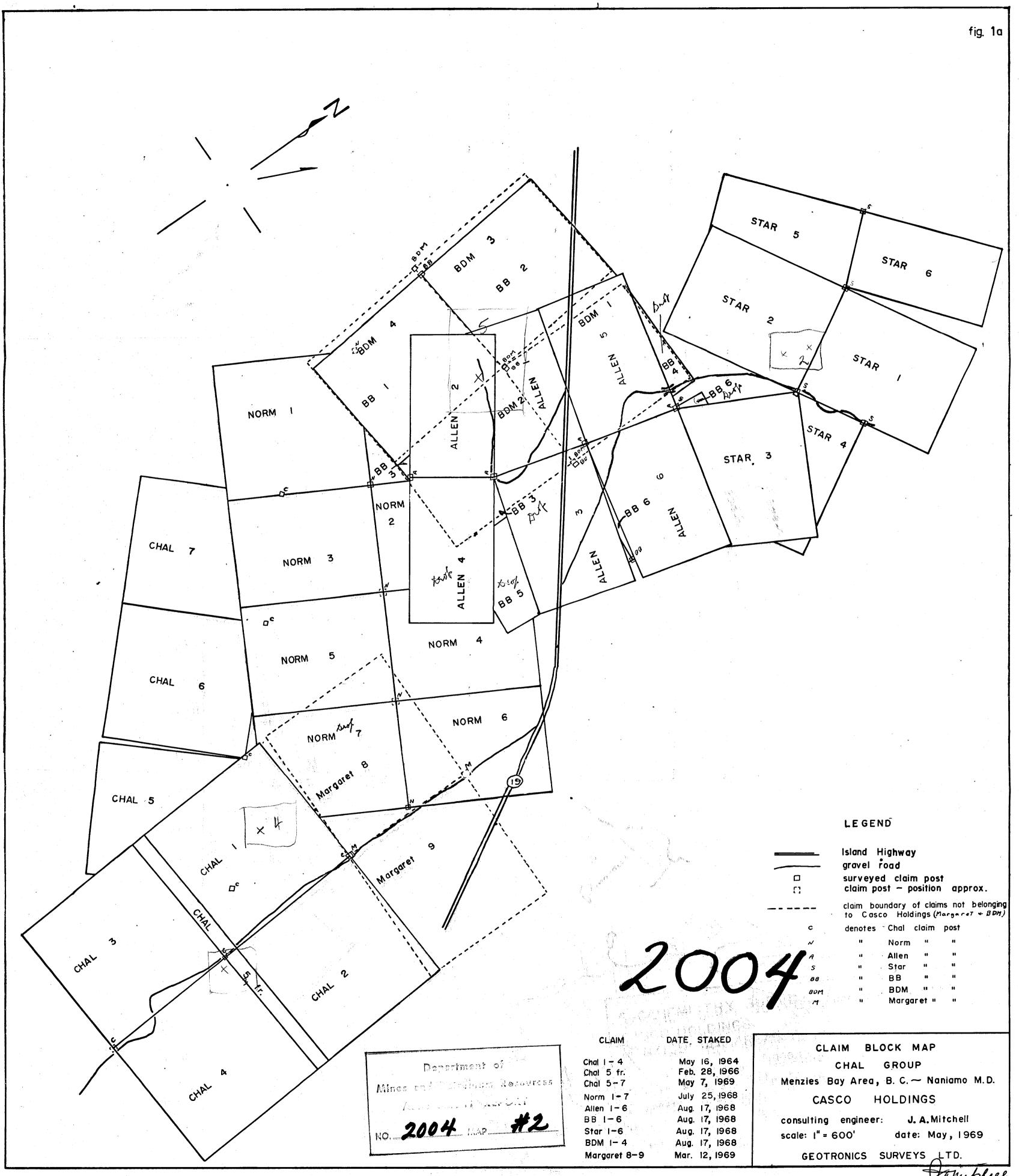
date: May, 1969

test: hot acid extraction

scale: |" = 300'

units: ppm. Cu

GEOTRONICS SURVEYS LTD.



Jahublee