4748

104B/10W

104B/10W

MIN-EX SERVICES LTD.

4748

REPORT ON

GEOLOGICAL, GEOCHEMICAL, AND

GEOPHYSICAL SURVEYS

PINS 1-40 MINERAL CLAIMS

Snippaker Creek Area
Liard M.D.

56°33'N,130°45'W
NTS 104B

FOR

COBRE EXPLORATION LTD.

August 30-September 6, 1973

M. J. Fitzgerald, P.Eng.
North Vancouver, B. C.

December 7, 1973

TABLE OF CONTENTS

ILLUSTRATIONS

PLATES IN POCKET

INTRODUCTION

The following describes the results of work conducted during 1973 on the PINS 1-40 mineral claims located approximately 2-1/2 miles southwest of the Snippaker Creek airstrip and 55 air-miles north-northwest of Stewart. The claims are owned by Cobre Exploration Ltd. and the work was conducted by Min-Ex Services Ltd. and Nielsen Geophysics Ltd. between August 30 and September 6, 1973.

The 40 contiguous full-size mineral claims were staked on October 7, 1971. The staking followed discovery of low-grade disseminated copper mineralization on the central ridge and discovery of copper-bearing float in a gully draining the north side of the ridge. Geologic mapping, establishment of a picket-line grid, and geochemical sampling were conducted during 1972. Further geologic mapping and geochemical sampling were completed during 1973 and, in addition, electromagnetic and magnetic surveys were conducted in the base metal anomalous portions of the grid.

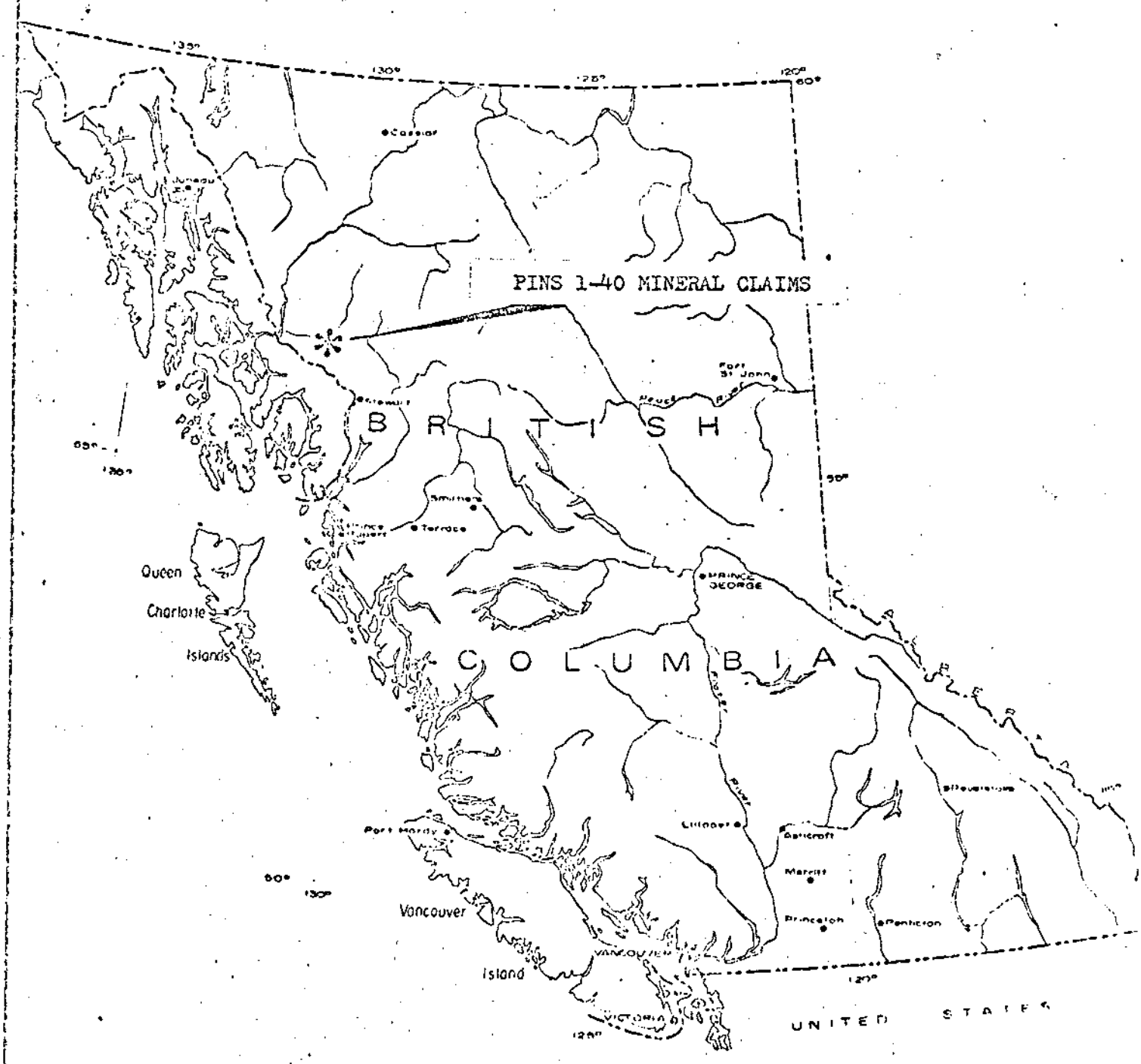
LOCATION AND ACCESS

The PINS 1-40 mineral claim group straddles a flat-topped ridge which lies between two forks of Snippaker Creek, a tributary of the Iskut River. Work to date has been conducted almost entirely on the ridge top and, although the region is one of generally rugged relief, the surveyed area is characterized by moderate, rolling topography. A glacier lies in the valley southeast of the ridge and a valley glacier ends midway along the claim group to the northwest. Slopes rise precipitously from the valley on the northwest and less steeply from the valley on the southeast. Elevations on the grid vary from approximately 4100 feet ASL in the central portion of the grid to 4300 feet on the east end (Line 44E) and to 4500 feet at the west end (Line 26W).

Rock exposures are good on the steep slopes but are only fair to poor on the central ridge top. Timber is abundant on the lower slopes but is generally sparse and stunted at higher elevations.

Access to the claims was by a chartered Otter aircraft from Terrace, B. C. to the Snippaker Creek airstrip and then by helicopter the remaining 2-1/2 miles.

The only topographic coverage of the area is on NTS sheet 104B (1:250,000); however, one inch equals one-half mile air photo coverage is available from the Provincial Government. Latitude and longitude of the claim group are 56°33'N and 130°45'W, respectively.



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4748 MAP #1

FIG.

COBRE EXPLORATION LIMITED

SNIPPAKER PROSPECT

SCALE 1" = 136 MI.

ALTAIR

CLAIMS

The PINS group consists of 40 contigous mineral claims owned by Cobre Exploration Ltd. The claims were staked on October 7, 1971 and were recorded on October 15, 1971. Additional pertinent data are as follows:

Claim Name	Record Number	Anniversary
PINS 1-40	57488-57527	October 15

Layout of the claims in relation to the grid is shown on Figure 3.

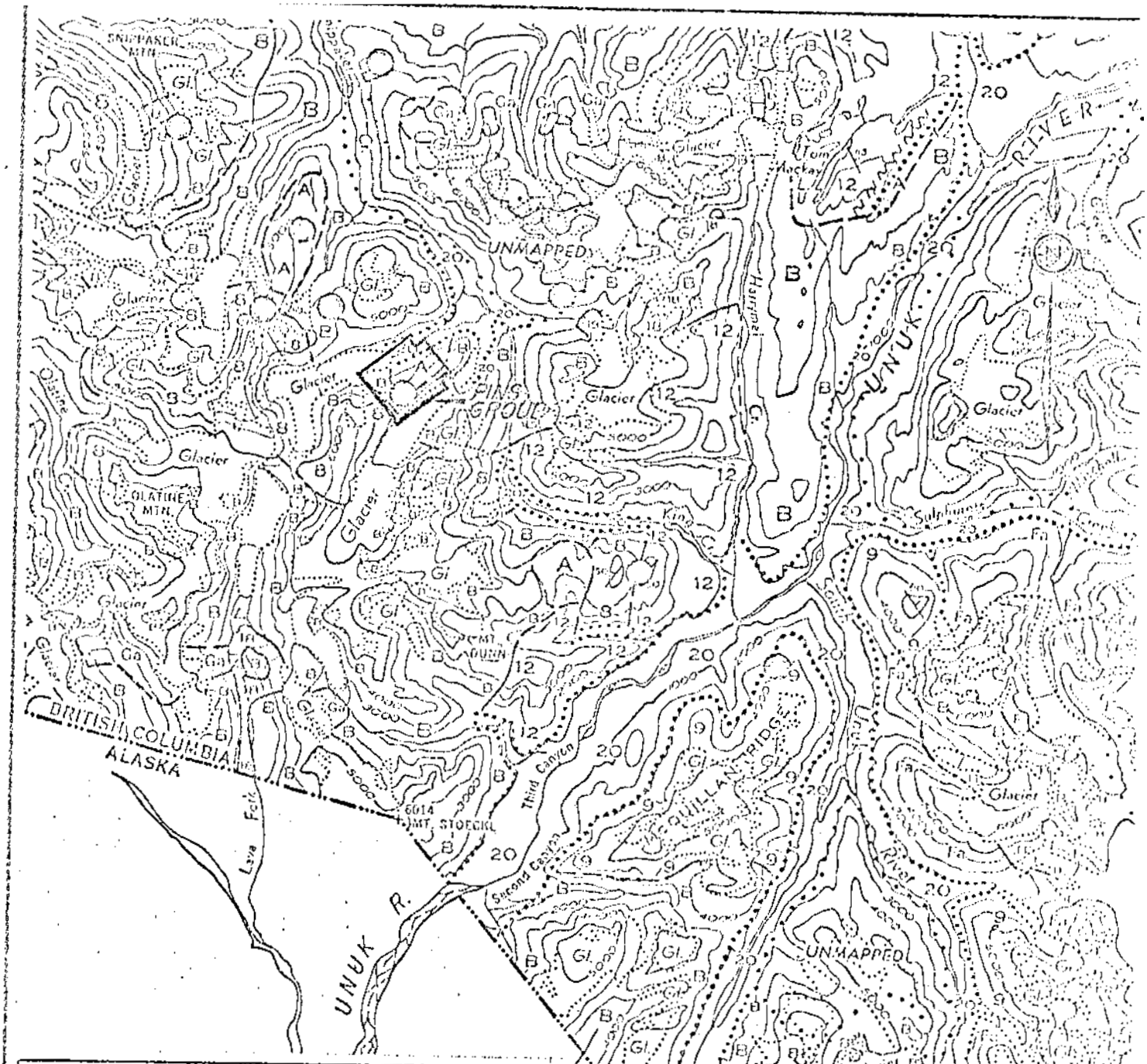
MAPPING AND SAMPLING GRID

During the 1972 work programme, a picket-line grid was established on the ridge top to provide control for geologic mapping and the geochemical survey. The baseline is 7600 feet long and is oriented S40W-N40E near the edge of the cliffs which border the northwest side of the ridge. Cross lines were extended normal to the baseline at 800-foot intervals roughly from the cliffs on the northwest side of the ridge to either the cliffs on the southwest side, where present, or to the major break-in-slope above the valley where cliffs were not present. In the portion of the grid between 20E and 50E, intermediate cross lines were run and sampled at 200-foot intervals. A total of 30,800 feet of line was established in 1972.

During 1973, cross lines were established at 400-foot intervals in the portion of the grid between 0+00 and 28W. 100-foot station spacing was established on all lines from L0+00 to the southwest end of the grid and from L28E to L44E on the eastern portion of the grid. A total of 7200 feet of new grid was established during 1973.

GEOLOGY

Preliminary geologic mapping of rock outcrops within the area of the PINS group grid was completed at the scale of 1 inch equals 200 feet during 1972. Five rock units were recognized; three of volcanic origin and two of apparent intrusive origin. When it became apparent during the 1973 work that several electromagnetic conductors were present in the northeast portion of the grid, re-mapping and re-evaluation of exposures in that area were undertaken.



COBRE EXPLORATION LTD.

UNUK RIVER REGION

REGIONAL GEOLOGY

LEGEND

- QUATERNARY — glacial drift, alluvium
- TERTIARY — basalt
- CRETACEOUS — argillite, greywacke
- JURASSIC — volcanics, argillite
- TRIASSIC — tuff, siltstone
- PRE-TRIASSIC — phyllite, schist
- PREMIAN — gneiss

INTRUSIVE ROCKS

- Feldspar porphyry
- Quartz monzonite

Outline of PINS CLAIM GROUP

Copper Prospect

FIG. 2 Scale: 1 inch = 4 miles

REF: G.S.C. MAP 9-1957

The rock units recognized during the 1972 mapping were 1) rhyolite or latite, 2) andesite, 3) chlorite-epidote-pyrite rock, 4) diorite porphyry, and 5) andesite porphyry. Two additional units, both of apparent sedimentary origin, were recognized during the 1973 mapping which are 6) a tuffaceous unit of apparent andesitic composition, and 7) an argillite unit. General chlorite-epidote-pyrite alteration of rocks in this portion of the grid and the resultant bleaching and development of secondary clays due to the oxidation of pyrite tends to mask the presence of the newly recognized units, making the separation of the rock units in the field rather difficult.

Results of the 1972 and 1973 mapping are shown on Plate I. The 1973 mapping, which covers the area between L28E and L44E, has been coloured on Plate I and the 1972 mapping has been left uncoloured. The intrusive units (diorite porphyry and andesite porphyry) were not found in the eastern portion of the grid and have been described in the 1972 assessment report. The volcanic and sedimentary units are described below.

Argillite

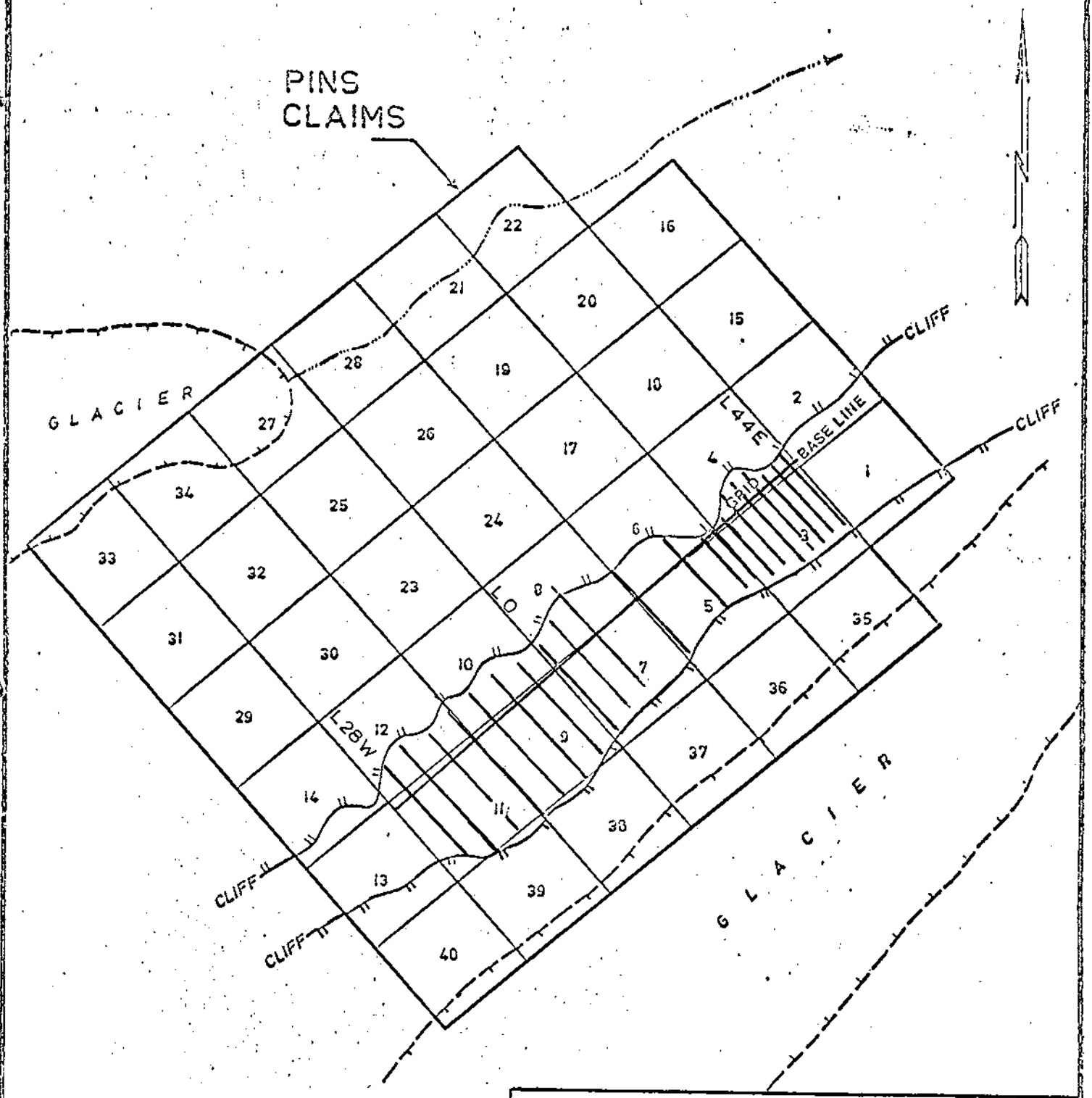
The argillite unit is generally dark gray, soft, and very fine grained. Where altered, the argillite is often blocky in outcrop although locally it is platy to slaty in appearance. Biotite and chlorite are usually prominent constituents of the rock. Exposures of this unit are usually well fractured and contain moderate to abundant pyrite and limonite in very fine grained disseminations, veinlets, and as coatings on rather open fractures. Where weathered, the argillite is bleached to a light gray colour and contains abundant clay. Local black streaks suggestive of graphitic material are present but only in one instance was this material found to be conductive when tested in the field with an ohmmeter.

Andesitic Tuff

The tuff unit is similar in appearance to the unit mapped as andesite but on close examination the rock is seen to be composed of fragments of amphibole, pyroxene, and feldspar. Locally rock fragments which appear to be of andesitic composition are present. This rock unit contains only very minor pyrite and is generally unmineralized. Alteration consists of weak development of chlorite.

Rhyolite or Latite

The rhyolite unit usually appears to consist of flows but locally may be present as sills. Exposures in the eastern portion of the grid are strongly fractured and contain moderate to abundant pyrite in disseminations and veinlets. The exposures are generally limonite stained



Department of Mines and Petroleum Resources

ASSESSMENT REPORT

NO. 4748 MAP #3

COBRE EXPLORATION LTD.

CLAIM & GRID LOCATION MAP

PINS CLAIM GROUP

LIARD M.D., BRITISH COLUMBIA

0 2000 4000 6000

Scale in feet

and rock fabric is difficult to examine but fabric that can be seen in several outcrops suggests that some of the rhyolite may be in fact a lithic tuff. The rock is hard and fresh feldspar faces are often apparent. Alteration consists of sericite development along pyrite veinlets; some of the sulfide veinlets contain quartz.

Andesite

The unit mapped as andesite is generally dark greenish gray, fine grained, and ranges from platy to massive in outcrop. Fragmental units are present locally and very fine grained bands have been observed which may originally have been tuffaceous. The relation of the andesite to the tuff described above is unknown.

Rocks of this unit usually exhibit weak alteration to chlorite and in several areas within the grid are more intensely altered to chlorite, epidote, and pyrite. Carbonate-epidote-pyrite veinlets are usually present in the areas of stronger alteration. Most of the exposures mapped during 1973 are only weakly altered.

Chlorite-Epidote-Pyrite Rock

This unit was mapped as chlorite-epidote-pyrite rock after its main mineral constituents as the alteration to those minerals is so intense that it is impossible to megascopically determine original composition of the rock. In most exposures, chlorite, epidote, and pyrite make up 70 to 90% of the rock even though relative percentages of the three minerals vary somewhat.

Rocks of this unit are generally apple green to dark green in colour and are medium fine to very fine grained. Pyrite is often very abundant and locally is massive; pyrite content probably averages between 10 and 20% by volume and ranges from 5 to 80% on the PINS group. Much of the pyrite is distinctly crystalline. Only two exposures of the unit were mapped in the portion of the grid between L28E and L44E although it is quite extensively exposed in the western portions of the grid.

Fragmental texture very similar to that in some of the rocks mapped as andesite and andesitic tuff is present locally suggesting that the chlorite-epidote-pyrite unit may represent, at least in part, intensely altered portions of these units.

General

Mapping within the area of the PINS group grid has not been of sufficient detail to outline a stratigraphic succession or to definitely correlate similar units from one portion of the grid to another. The geologic succession shown on the legend on Plate I is tentative at best.

Most of the quartz veins and veinlets observed contain chlorite and pyrite; a few also contain small amounts of chaloopyrite, galena, and sphalerite. Quartz veins and veinlets are most abundant west of L12E but general silicification is most abundant in the eastern portion of the grid east of L28E.

An area of copper mineralization was noted in 1971 which could not be mapped during 1972 and 1973 due to snow cover which persisted throughout the summer of both years. This showing, which is located at approximately 28+50W/1N on the current grid, consisted of chalcopyrite, malachite, and limonite occurring as fine disseminated specks, coarser blebs, and veinlets in andesite altered to clay, sericite, and chlorite. The exposure, which was about 15 feet wide and 50 to 75 feet long, trended southerly and was surrounded at the time by snow.

Copper-bearing float was also noted during the 1971 examination in the lower portions of the steep gully heading in the northeastern portion of the grid between 40E and 48E. This material consisted of hornfelsed andesite or andesitic tuff strongly altered to chlorite which contained disseminated pyrite, some chalcopyrite and an abundant mixture of malachite and limonite. This material was not found in place in 1971 nor was any similar material found near the head of the gully in 1972 or 1973. Consequently, it is assumed that the float originates somewhere in the middle reaches of the gully which has not been prospected to date.

No base metal mineralization has been found in the eastern portion of the grid re-mapped during 1973 other than a few isolated specks of galena and sphalerite. The local geochemical response coupled with the presence of strong electromagnetic conductors does suggest, however, that potential for volcanogenic massive sulfide deposits may be present under overburden cover in this portion of the grid. As noted earlier, pyrite in disseminations is extensively present in this and other portions of the grid but the concentration of pyrite in this portion of the grid does not account for the presence of the EM conductors and the pyrite may be in part a fringe effect bordering concentrations of base metals.

GEOCHEMICAL SURVEY

As shown on Plate I, rock exposures on the ridge top amount to less than 10% of the area and consequently a geochemical survey was undertaken during 1972 to better evaluate the extent and distribution of base metal values within the area mapped.

During the 1972 sampling, 146 soil and 27 rock chip samples were collected; of these, 110 soil and all 27 rock chip samples were analyzed. During 1973, 14 soil samples were re-taken from lines L22E, L24E, and L26E (not analyzed during 1972); 6 rock chip samples were taken from the

Mapping during 1972 indicates that rocks in the central and western portions of the grid consist largely of chlorite-epidote-pyrite rock and lesser andesite. Some rhyolite is present southwest of L20W and all rocks are intruded by diorite porphyry and andesite porphyry dikes. Rhyolite, however, is increasingly abundant northeast of L12E and northeast of L20E is the most abundant volcanic unit. Argillite and andesitic tuff are present northeast of L36E and are the dominant rock units in the extreme eastern portion of the grid. Two northeast-trending faults are tentatively shown on Plate I between L36E and L44E. Presence of the faults is inferred from strong linear topographic trends and one exposure of fault breccia.

Mapping during 1972 coupled with helicopter traverses along the cliffs on the northwest slopes of the ridge suggested that the volcanic series consists of a thick sequence of andesitic rocks, largely flows, which near the top of the ridge are intercalated with flows of rhyolitic composition. The distribution of rocks mapped during 1973 in the northeastern portion of the grid tends to confirm the 1972 impression and, in addition, suggests that a shift in deposition from predominately volcanic to predominately sedimentary is present in this portion of the grid. The tentative northeast-trending faults shown on Plate I between L36E and L44E, if actually present, may confuse the picture somewhat but the general impression given by the rock distribution is that the area northeast of L28E represents the top of a volcanic pile. The volcanic pile is intruded locally by small stocks and numerous dikes of intermediate composition and, in general, the geologic environment exhibits characteristics suggestive of one on which volcanogenic massive sulfide deposits may be present.

MINERALIZATION AND ALTERATION

Hydrothermal alteration characteristics of each rock unit were briefly described in the preceding section of the report. Notes were kept during the 1972 and 1973 mapping on the abundance of secondary chlorite, epidote, silica, pyrite, carbonate, and base metal sulfides. As the 1972 mapping progressed and the chlorite-epidote-pyrite rock unit became evident, this unit was mapped separately.

Plate I shows the abundance of pyrite in each of the various rock units and the presence of silicification and quartz veins and veinlets are shown by symbols. No attempt has been made to directly show the relative abundances of chlorite, epidote, or carbonate, but in a general way, the abundance of all three is directly related to the abundance of pyrite. Chlorite, epidote, and to some extent, carbonate are strongest where pyritization is strongest except in areas of diorite porphyry where epidote is rare but chlorite and sericite are present and often abundant.

eastern portion of the grid, and 5 large samples were taken from quartz vein exposures in the western portion of the grid. All soil and rock chip samples taken and 23 soil samples taken during 1972 (not previously analyzed) were analyzed for lead and zinc content. The five large samples were assayed for gold and silver content.

The soil samples were taken from the "B" soil horizon at depths ranging from 9 to 14 inches. In the area of the survey, the humic zone ranges from 0 to 4 inches and the leached "A" horizon ranges from 0 to as much as 6 inches. In much of the survey area, a layer of black volcanic ash is present just below the humic zone which is as much as 3 inches thick. The ash layer is probably related to recent volcanic eruptions in an area 8 to 10 miles to the southwest of the claim group.

The "B" soil zone generally consists of brown sandy loam but the colour of the sampled material varies from tan through brown to red and locally the material is silty or clayey rather than sandy. Much of the sandy material contains only a small proportion of fines. Where the soil is quite gravelly with little fine material, no samples were taken. The average depth of sampling was about 11-12 inches.

The soil samples were taken in kraft paper bags and the grid location was marked on the exterior of the bag. In areas where rock exposures are present, rock chip samples were taken to supplement the soil samples. These consisted of 5 to 10 rock chips collected from a radius of 10 to 15 feet. The average weight of the rock chip samples was 1/2 to 3/4 lb. and the chips were stored in kraft bags and marked in a similar manner to that of the soil samples.

Descriptive notes recording sample depth, thickness of the humic zone, "A" horizon and "B" horizon and the characteristics of the "B" horizon were kept for each soil sample. Similar notes were kept for each rock chip sample.

The samples were taken to Crest Laboratories (B.C.) Ltd. in Vancouver and each was analyzed for lead and zinc. Due to certain discrepancies with 1972 results, duplicate analyses were made by Chemex Labs Ltd. in North Vancouver. Good correspondence between analysts was achieved. Each soil sample was screened to -80 mesh and digested with a mixture of nitric and perchloric acids. Metal contents were determined with a Tectron AA5 atomic absorption spectrophotometer. The rock chip samples were pulverized to -100 mesh and were similarly digested by atomic absorption.

Results of the survey are shown on Plate II (Lead) and Plate III (Zinc). Histograms were updated and threshold anomalous, anomalous, and strongly anomalous levels were re-determined for each metal. Contours of anomalous metal content are also shown on Plates II and III.

Discussion of Results

Although line spacing was very wide (800 feet), the 1972 geochemical survey results tentatively indicated the presence of three metal-anomalous zones. One large zone with coincident anomalous copper, lead and zinc values is present in the western portion of the grid roughly centred at L24W/Baseline. A second zone containing somewhat weaker metal values was indicated in the central portion of the grid roughly centred at L4E/8S. A third zone with anomalous lead content was indicated between L36E/4S and L40E/8S which is flanked on the south by anomalous zinc values.

Geologic indications of the presence of a massive sulfide-type environment coupled with the large amount of overburden on the ridge top led to the decision to further investigate the geochemically anomalous areas with magnetic and electromagnetic surveys. Geochemical follow-up was planned if EM conductors were found.

As described by P. P. Nielsen in the accompanying report (Geophysical Report on Ground Electromagnetic and Magnetometer Surveys), initial results of the surveys revealed only weak conductors in the southwestern portion of the grid and the likelihood of the occurrence of a massive sulfide lens within 150 feet of the surface was considered to be somewhat remote. As a result, attention was shifted to the northeastern portion of the grid where a strong but complex conductive zone was found between L28E and L44E which is partially coincident with the lead-zinc anomalous zone indicated by the 1972 geochemical results. As a result, fill-in geochemical sampling was concentrated in the northeastern grid area. Additional soil samples were taken between lines L20E and L28E and these along with unanalyzed samples taken in 1972 between lines L28E and L44E were analyzed for lead and zinc content.

The 1972 geochemical results suggested the presence of a lead soil anomaly extending from 44E/2S to 36E/6S and open to the southwest. Flanking zinc values of lower order intensity were indicated between 40E/8S and 36E/10S. The 1973 fill-in results were rather disappointing in that anomalous lead and zinc results on L36E and L40E were not reflected on L38E and, in addition, lead and zinc values on L34E were all of background level. Checks of the 1972 analyses showed them to be accurate, however, and the resulting anomalous patterns are shown on Plates II and III. The lead anomaly on L36E is 600 feet long, 250 feet wide, and is open to the southeast. A spot lead anomaly is also present on L40E at 2S. The zinc anomalies include a 300- x 200-foot anomaly of threshold to anomalous order on L40E/8S and L42E/8S and a spot anomaly at 36E/10S of anomalous order which is not closed off.

The final geochemical results are not very impressive by themselves but the largely coincident position of the lead-anomalous results with electromagnetic conductors coupled with the partially-coincident, partially flanking position of anomalous zinc values with respect to

conductors suggests that massive sulfide lenses of commercial interest may be present in the area which are only poorly reflected in soil. Rock chip samples of the few rock exposures in the area are of the same general geochemical level as the soil results but the relatively small areal extent of significant massive sulfide lenses with respect to the large amount of area covered by overburden on the ridge top leaves large areas open for further exploration.

GROUND MAGNETOMETER SURVEY

A total of 3.16 line miles of magnetometer survey was conducted by the writer on lines spaced 400 feet apart using a station interval of 100 feet. The instrumentation used, method of survey, and method of compilation have been very adequately described by P. P. Nielsen, Geophysicist, in the accompanying report and will not be repeated here.

The magnetic results are also discussed by Mr. Nielsen in his report but several additional comments on the relation between magnetic results and observed geology can be made.

As mentioned by Mr. Nielsen, the dipolar anomaly extending from L24W/1+50N to L28W/1N (and open to the west) may correlate with the disseminated copper showing seen in 1971 and covered by snow during field seasons since. If so, the magnetic pattern suggests that the showing may continue into the snow-and talus-covered area further to the west.

The magnetic low at L28W/7S appears to correlate with an exposure of moderately pyritized andesite. The chlorite-epidote-pyrite rock unit does not appear to have much, if any, magnetic expression anywhere on the grid.

The linear magnetic high between L20W/8S and 14W/8+50S may reflect a magnetite-containing dike but, if so, the dike is not reflected in exposures mapped between L20W/6S and L20W/8+50S. An alternative explanation may be that the linear high reflects magnetite introduced along a fault or possibly that it reflects a magnetite-containing layer in the flow succession in this area.

The magnetic highs centred at L16W/1N and L8W/Baseline as well as the linear high between L16W/2S and L8W/4S all occur in overburden-covered areas and Mr. Nielsen's attributing them to dike or vein-type features may well be justified.

As mentioned by Mr. Nielsen, the eastern portion of the grid is magnetically uninteresting with values ranging from 360 to 490 gammas.

The subtle low trending northerly roughly between L30E/10S and L42E/2N seems to correlate best with the presence of the strongly pyritized rhyolite unit shown on Plate I.

ELECTROMAGNETIC SURVEY

The instrumentation, survey procedure, and treatment of data used in the electromagnetic survey are fully described in Mr. Nielsen's accompanying report. Results of the survey, which was conducted with a Crone C.E.M. "shoot back" unit, have been displayed by Mr. Nielsen in profile form. The writer's comments on the survey will be restricted to possible geologic correlations with the C.E.M. results.

Results

Mr. Nielsen's description of results on the southwestern portion of the grid are as follows: "the electromagnetic coverage of the west end of the grid indicated a number of positive, low-amplitude dip-angles suggestive of near-surface, steeply dipping, weak conductors which are generally striking northeast.

"Many profile segments are quite broad or bi-modal and are thought to be caused by two or more sub-parallel weak conductors which are near enough to each other so as to cause the respective conductor dip angles to overlap, or partially merge. These conductors could be primarily due to magnetite."

The weakly conductive zones in the southwestern portion of the grid may represent only magnetite concentrations but it should be noted that a massive sulfide deposit with a high zinc and low copper-lead content might also respond electromagnetically in a manner similar to that noted. The weak conductor extending from L24W/2N to L28W/1N and open to the west is largely coincident with a bipolar magnetic anomaly described previously and underlies the approximate area of the disseminated copper showing seen in 1971. If the nearby zinc soil anomaly, centred at L24W/Baseline, should be reflecting substantial zinc content in a buried sulfide deposit, the weak C.E.M. anomaly could be of considerable importance.

The weak conductor lying between L28W/7S and L12W/7S is coincident for approximately two-thirds of its length with a linear, bipolar magnetic anomaly. This conductor extends through an area which is largely underlain by the chlorite-epidote-pyrite rock unit. This strongly altered rock unit normally does not contain substantial amounts of magnetite and the coincidence of anomalous copper, zinc, and lead soil geochemical values over a portion of the length of the C.E.M.-magnetic anomaly suggests that further investigation of this area is warranted.

The weak conductors noted at L16W/4S to L12W/5S and at L8W/3S occur in an overburden-covered area and do not appear to be of immediate importance.

C.E.M. survey results in the northeastern portion of the grid reveal the presence of a strong, complex conductive zone between L28E and L44E. Mr. Nielsen notes that three sub-parallel, closely spaced, vertical, near surface, narrow conductors are present within the conductive zone which strike northeasterly. The proximity of the conductors makes dip, width, and depth to top estimations difficult and detailed follow-up using another frequency and coil separation was only partially successful in enhancing interpretation. The conductive pattern in the L42E-L44E area is particularly complex and Mr. Nielsen suggests that the complexity may be due to the superposition of two or three conductors on one another.

No anomalous base metal geochemical values are present in soil in the western portion of the conductive zone between L28E and L34E. A lead soil anomaly is present which trends northwesterly along L36E which is in part coincident with two of the three conductors which cross L36E. The local lead anomaly at L40E/4S overlies the complex conductive zone in that area. No anomalous copper values are present in this portion of the grid and the weak zinc anomalies previously described on lines L36E, L40E, and L42E, lie along the southern borders of the conductive zone and are only in part coincident with anomalous lead values.

Although soil geochemical response in the area of the conductive zone is not great, the zone does correlate well with moderately to strongly pyritized rock units in this portion of the grid. The conductors are related to chlorite-epidote-pyrite rock, rhyolite, and argillite and are present in areas underlying all three rock units. Rock specimens from exposures in the conductive zone were tested for conductivity with an ohmmeter and only one specimen of argillite was found to be conductive. Five other specimens of argillite were tested with negative results. As a consequence, the conductors are believed to reflect massive sulfide concentrations rather than conductive rock horizons.

The presence of several, strong conductors within a broad conductive zone coupled with local anomalous lead and zinc content in soil suggests that massive sulfide deposits with appreciable base metal content may be present at shallow depth in the northeastern portion of the grid. The spotty pattern of anomalous lead and zinc content in soil may be due to poor soil development or a deeper, impermeable soil horizon although there is no evidence at present that such is the case.

CONCLUSIONS AND RECOMMENDATIONS

Geochemical, magnetic, and electromagnetic surveys on the PINS group coupled with geologic mapping indicate the presence of three general target zones which are worthy of further investigation, including drilling.

Geophysically, the area which appears to present the best potential for economic massive sulfide deposits lies in the northeastern portion of the grid between L28E and L44E. The presence of partially coincident lead-zinc soil anomalies with strong conductors on lines L36E and L40E suggests that initial investigation by drilling should be concentrated on those lines. Mr. Nielsen suggests that an initial 2000 feet of drilling should be planned to investigate this portion of the grid.

In the southwestern portion of the grid, initial attention should be focused on the weak conductor lying between L28E/1N and L24E/2N. The presence of disseminated copper mineralization in this area coupled with anomalous lead and zinc values in soil suggest that the weakness of the conductor might be due to a preponderance of zinc. If it is decided to drill the conductors in the eastern portion of the grid, one or two short holes should be planned to test this zone.

The third zone of interest is the area of coincident and partially coincident C.E.M., magnetic, and geochemical anomalies lying between L12W/7S and L28W/7S. Drilling of this area would be dependent on the results of the two above-mentioned areas and, if conducted, should be initially located near L20W.

M. J. Fitzgerald, P.Eng.

References:

Fitzgerald, M. J. Report on geological and geochemical surveys; PINS 1-40 Mineral Claims; Report to Cobre Exploration Ltd. submitted to B.C. Dept. of Mines in satisfaction of assessment requirements November 13, 1972.

Nielsen, P. P. Geophysical report on ground electromagnetic and magnetometer surveys, PINS 1-40 Mineral Claims; Report to Cobre Exploration Ltd., September, 1973.

STATEMENT OF EXPENDITURE

Trans-Provincial Airlines Ltd. Invoice #1650	Fixed Wing Charter	$ 990.00
Vancouver Island Helicopters Ltd. Invoices 2119, 2124, 2125	Helicopter Charter	1,106.75
Nielsen Geophysics Ltd. Invoice 102	Electromagnetic Survey Project #GE 73-21	1,450.48
Min-Ex Services Ltd. Invoice 19A	Professional Services, Geochemical Survey, Labour	1,929.75
Invoice 19B	Rental, Expense, and Mileage charges	947.85
Invoice 19C	Report on Geological, Geochemical, and Geophysical Surveys	780.00
Crest Laboratories (B.C.) Ltd. Invoices 5191, 997G	Geochemical Analyses, Assays	99.90
Chemex Labs Ltd. Invoice 10899	Geochemical Analyses	53.20
B.C. Telephone Co.	Long Distance calls	45.74
Smithers Hardware Invoices 7584, 8041	Camp Supplies	26.69
Lakeside Motel	Radio standby and expediting	17.50
Canadian Marconi Co.	Radio antenna adapter	21.34
Total Electronics Ltd.	Radio and Magnetometer Batteries	25.49
Standard Oil Co. of B.C.	Radio Battery	38.33
	Total:	$7,533.02

Personnel	Dates Worked
M. J. Fitzgerald, P.Eng.	August 28-September 9, 1973
P. P. Nielsen, Geophysicist	August 29-September 7, 1973
Matthew Fitzgerald, Field Assistant	August 28-September 9, 1973

M. J. Fitzgerald, P.Eng.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
M. J. FITZGERALD

GEOCHEMICAL ANALYSES

PHONE 688-8580

CREST LABORATORIES (B.C.) LTD.

B.C. REGISTERED ASSAYERS
GEOCHEMISTS

1068 HOMER STREET,
VANCOUVER 3, B.C.

October 5, 1973

Cobre Explorations Ltd.,
1289 Emery Place,
North Vancouver, B.C.

Attn: Mr. M.J. Fitzgerald

Lab 997G — Geochemical analysis for copper, lead and zinc

Mesh Size: - 80 and - 100
Analytical Method: Atomic Absorption
Digestion Method: $HClO_4 + HNO_3$

Sample Marked:	Copper ppm	Lead (1) ppm	Lead (2) ppm	Zinc ppm
22 E - 2 S	48	40	45	90
4	48	40	45	90
6	20	38	40	30
8	40	34	50	110
22 E 10 S	48	60	60	115
24 E 2 S	72	40	35	120
4	60	58	60	140
6	40	46	45	80
8	76	46	45	90
24 E 10 S	28	34	30	60
26 E 4 S	36	32	35	70
6	24	44	45	60
8	48	36	35	100
26 E 10 S	56	48	50	120
30 E 6 S	48	40	40	100
8	28	42	40	80
10 S	64	72	70	100
20 +50	44	32	30	80
30 E 24 S	48	40	40	90
32 E 2+40 S	44	38	35	90
4	60	42	45	100
32 E 6 S	48	50	50	110
8	20	32	30	120
32 E 10 S	32	42	35	70
34 E 4 S	20	38	30	70

Sample Marked:	Copper ppm	Lead (1) ppm	Lead (2) ppm	Zinc ppm
34 E 6 S	28	40	30	70
8	24	36	30	80
34 E 10 S	32	30	20	60
38 E 4 S	24	34	30	100
6	32	44	35	80
8	36	40	35	90
10	28	30	25	110
38 E 11 S	52	64	60	70
42 E 2 S	36	42	40	90
6	36	40	40	110
8	52	38	45	140
42 E 10 S	48	36	30	110
Rock Chips				
33+ 50 E 5+50 S	34	52	55	100
35+ 50E 9+75 S	16	34	40	55
40+ 90E-2+70 S	44	28	25	95
41E - 10+ 75S	44	48	45	35
42+ 50E - 4+50 S	24	30	30	135
44+ 30E - 2+ 80S	54	32	35	100

Yours truly,

CREST LABORATORIES (B.C.) LTD.,

R. A. Williams

Ron A. Williams

Chief Assayer

RAW: jg

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA
TELEPHONE: 985-0648
AREA CODE: 604

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 26518

INVOICE NO. 10899

RECEIVED Nov. 16/73

ANALYSED Nov. 20/73

TO: Cobre Exploration
254 E. 4th St.,
North Vancouver, B. C.

ATTN: Mr. Fitzgerald

SAMPLE NO. :	PPM Lead	PPM Zinc
32E 0+40S	466	98
2S	31	62
4S	40	95
6S	48	95
8S	30	98
32E 10S	20	25
34E 2S	46	83
4S	31	65
6S	33	65
8S	28	65
34E 10S	24	52
36E 2S	35	83
4S	31	67
6S	125	115
8S	50	80
36E 10S	48	211
38E 2S	Not sufficient sample	
4S	28	86
6S	39	70
8S	37	80
10S	26	102
38E 11S	62	72
4 BL 40E	37	77
40E 2S	35	70
4S	Not sufficient sample	
6S	35	70
8S	44	164
10S	37	92
40E 12S	39	62
BL 42E	35	77
42E 2S	39	75
6S	35	89
8S	39	131
42E 10S	35	105
BL 44E	48	75
44E 2S	31	75
4S	42	105
6S	33	70
8S	35	92
44E 10S	31	75
Std.	50	131

CTA MEMBER

CERTIFIED BY: P. Y. [illegible]

INVOICES

STATEMENT
OF YOUR ACCOUNT WITH

TRANS-PROVINCIAL
AIRLINES LTD.
BOX 310
TERRACE B.C.

98

TELEPHONE 635-6516

98

PLEASE DETACH THIS STUB
AND RETURN WITH
YOUR REMITTANCE.

TO: COBRE EXPLORATIONS
1289 EMERY PL
NORTH VANCOUVER BC

CUSTOMER NO.
1650
DATE: 15 (DAY) 09 (MO.) 73 (YR.)
CHARGES AND CREDITS AFTER THIS DATE WILL APPEAR ON NEXT STATEMENT.

100.401

CUSTOMER NO.
1650
DATE: 15 (DAY) 09 (MO.) 73 (YR.)

DATE (DAY / MO. / YR.)	REFERENCE	DESCRIPTION	AMOUNT
		BALANCE FORWARD	$495.00
15 / 09 / 73	79	32582	495.00

Pd Cobra #204
10/14/73
Snipaker

REFERENCE	AMOUNT
BL/FWD	$495.00
79	495.00

PLEASE PAY THIS AMOUNT ▶ $990.00

$990.00

THIS IS THE "AGE" OF YOUR ACCOUNT

CURRENT	30 DAYS	60 DAYS	90 DAYS & OVER
$495.00	$495.00	$.00	$.00

5 .....

6 ..... 12 .....

COBRE EXPLORATIONS

№ 32582

VANCOUVER ISLAND HELICOPTERS LTD.

P.O. BOX 2098 TELEPHONE 656-3987 SIDNEY, B.C.

S 9

DATE OCTOBER 5, 1973

In Account With

COBRE EXPLORATION LTD.,

1289 EMERY PLACE,

NORTH VANCOUVER, B.C. ATTENTION: M.J.FITZGERALD

REFERENCE INV. # 2119,2124,2125

FLYING SERVICE FOR MONTH OF AUG.30 & SEPT.4&5 1973
AS PER ATTACHED FLIGHT INVOICES.

HELICOPTER TYPE BELL 47G-3B-1 REG. No. C.F. WMQ

BASE OF OPERATION STEWART, B.C.

BALANCE FORWARD		
_____ HOURS	@ $_____ PER HR.	$
6:55 HOURS	@ $ 150.00 PER HR.	
6:55 HOURS V.I.H. FUEL	@ $ 10.00 PER HR.	
MINIMUM CHARGES (IF APPLICABLE)		
CREW EXPENSES		
ADDITIONAL CHARGES		
TOTAL CHARGES		$ 1,106.75

Pd Cobre # 205 Oct 14/73

ISLAND BUSINESS FORMS

TERMS: 30 DAYS NET

Interest at 1½% per month (18 per cent per annum) charged on overdue accounts.

This company complies with the CODE OF ETHICS of the Helicopter Association of America.

NIELSEN GEOPHYSICS LTD.
420-475 Howe Street
Vancouver 1, B.C.
Telephone No. 688-0471

September 17, 1973

Cobre Exploration Ltd.
2467 Kilmarnock Crescent
North Vancouver, B. C.

Attention: Mr. M. Fitzgerald

I N V O I C E #102

Re: Electromagnetic Survey Project #GE 73-21
Pins Claims, Snippaker Creek Area, B. C.

To Services Rendered

1.	Professional Services	
	a. 5 days @ $120.00	$ 600.00
	b. 5 days @ $60.00 (standby and travelling time)	300.00
2.	C.E.M. Instrument Rental 10 days @ $15.00	150.00
3.	Report	250.00
4.	Disbursements (plus 15%)	150.48
	TOTAL OF INVOICE	$ 1,450.48

Paid = Full
30 Oct/73
Cobre #216

P. H. Nielsen

MIN - EX SERVICES LTD.

GEOLOGICAL CONSULTING
AND
MINERAL EXPLORATION MANAGEMENT

M. J. FITZGERALD, P. Eng.
GEOLOGICAL ENGINEER

1289 EMERY PLACE
NORTH VANCOUVER, B. C.
TEL. 980-4312

October 2, 1973

INVOICE # 19 A

Partial billing - Snippaker Project
EM, Magnetometer, and Geochemical Surveys
PINS # 1 - 26 Mineral Claims

August 17 - September 9, 1973

Professional Services - M.J. Fitzgerald, P.Eng.

Contacts with geophysical consultant, assembly of camp supplies and gear, reservations, purchase of camp supplies, travel to property.

3 5/8 days @ $85/day $308.13

On - site work including:

EM Survey
1 ½ days @ $135/day 202.50

Magnetometer Survey
2 7/8 days @ $135/day 388.13

Geochemical Survey and geological mapping
2 5/8 days @ $135/day 354.37

Standby (weather); compilation of results and comparison EM results with magnetometer data and geology; travel Terrace to Vancouver; visits to assayer, compile analyses.
6 1/8 days @ $85/day 520.62

Field Assistant, EM Survey Helper
Matthew Fitzgerald
13 days @ $12/day 156.00

Total Services $1929.75

Paid 31/08/73 Cheque #1221

M.J. Fitzgerald, P.Eng.

MIN - EX SERVICES LTD.

GEOLOGICAL CONSULTING
AND
MINERAL EXPLORATION MANAGEMENT

M. J. FITZGERALD, P. Eng.
GEOLOGICAL ENGINEER

1289 EMERY PLACE
NORTH VANCOUVER, B. C.
TEL. 980-4312

October 2, 1973

INVOICE # 19B

Snippaker Prospect Work
Rental, Expense and Mileage Charges
August 17 - September 9, 1973

Camp Gear Rental	8 days @ $10/day	$ 80.00
Camp Meals	3 men @ 8 days @ $10/man-day	240.00
Radio Rental	8 days @ $8.50/day	68.00
Auto Mileage Includes travel Smithers, Terrace, return; Smithers-Vancouver, expediting of supplies.	1035 miles @ 15¢	155.25
Air Travel Pacific Western Airlines Vancouver - Smithers		90.00
Taxi, Limo.		5.50
Supplies		114.25
Motel August 28, 29; September 7 - 9		83.85
Meals - Traveling Geologist, Geophysicist, Assistant		111.00

...../2

MIN - EX SERVICES LTD.

GEOLOGICAL CONSULTING
AND
MINERAL EXPLORATION MANAGEMENT

M. J. FITZGERALD, P. Eng.
GEOLOGICAL ENGINEER

1289 EMERY PLACE
NORTH VANCOUVER, B. C.
TEL. 980-4312

October 2, 1973

Total Rentals and Expenses	$947.85
Less Expense Advance	404.60
Total Due	$543.25

M.J. Fitzgerald, P.Eng.

MIN - EX SERVICES LTD.

GEOLOGICAL CONSULTING
AND
MINERAL EXPLORATION MANAGEMENT

M. J. FITZGERALD, P. Eng.
GEOLOGICAL ENGINEER

1289 EMERY PLACE
NORTH VANCOUVER, B. C.
TEL. 980-4312

October 31, 1973

INVOICE # 19 C

Report on Geological, Geochemical,
Magnetometer and Electromagnetic Surveys
SNIPPAKER PROSPECT
PINS 1 - 40 Mineral claims

M.J. Fitzgerald, P.Eng.

Report 4 days @ $85/day	$340.00
Compilation, reduction of data, Plotting of results 3 days @ $85/day	255.00
Drafting of maps (estimated)	150.00
Typing	35.00
Total	$780.00

M.J. Fitzgerald, P.Eng.

In Account With

PHONE 688-8586

CREST LABORATORIES (B.C.) LTD.

B.C. REGISTERED ASSAYERS
INDUSTRIAL and RESEARCH CHEMISTS

1068 HOMER STREET
VANCOUVER 3, B.C.

Cobre Explorations Ltd.,
1289 Emery Place,
North Vancouver, B.C.

DATE October 9, 1973
LAB. No. 997G
ORDER No.

For Services Rendered:

43 geochemical determinations - 2 elements @ 1.50	64.50
37 soil sample preparations @ 0.20	7.40
6 rock sample preparations @ 0.50	3.00
	$74.90

In Account With

PHONE 688-8586

CREST LABORATORIES (B.C.) LTD.

B.C. REGISTERED ASSAYERS
INDUSTRIAL and RESEARCH CHEMISTS

1068 HOMER STREET
VANCOUVER 3, B.C.

Cobre Explorations Ltd.,
1289 Emery Place,
North Vancouver, B. C.

DATE September 17, 1973
LAB. No. 5191
ORDER No.

For Services Rendered:

5 Gold and silver determinations @ 5.00	$ 25.00

Pd Cobre #203
14 OCT/73

[illegible] Sn. Packer

INVOICE

CHEMEX LABS LTD. 212 BROOKSBANK AVE., NORTH VANCOUVER, B.C. TELEPHONE 985-0648

Cobre Exploration

254 E 4th St.,

North Vancouver, B. C.

DATE Nov. 20/73

INVOICE NO. 10899

CERTIFICATE NO. 26518

ATTN: Mr. Fitzgerald

ITEM	DESCRIPTION	SUB-TOTAL	TOTAL
38	Analyzed for Lead & Zinc @ $1.40	$53.20	
			$53.20

B.C. TEL
BRITISH COLUMBIA TELEPHONE COMPANY

FIND IT FAST IN THE YELLOW PAGES

PAGE 2

YOUR TELEPHONE NUMBER 980 4312

DATE OF BILL SEP 21, 1973

	CALLS TO		NUMBER	TY	MIN	CALLS FROM		AMOUNT	
SEP 7	VANCVER	BC	299 6998	3S	9	SMITHER	BC	4.97 -	Jul
SEP 7	VANCVER	BC	684 6588	3K	2	SMITHER	BC	2.00 -	Sunkwa
SEP 7	FORT WORTH	TEX	336 4881	3L	19	SMITHER	BC	17.00 -	General - Primary
SEP 7	VANCVER	BC	299 6998	3K	3	SMITHER	BC	2.00 -	Jul
SEP 7	VANCVER	BC	684 6588	3K	3	TERRACE	BC	2.00 -	Sunkwa
SEP 7	VANCVER	BC	666 0424	3L	4	TERRACE	BC	3.66 -	General - Primary
SEP 8	NTH VAN	BC	980 4312	3K	2	SMITHER	BC	2.00 -	General - "
SEP 9	DENVER SW	COLO	988 9521	05	73			33.00 -	General - "
SEP 10	ARMSTRG	BC	546 6716	T	13			6.43 -	Grizzly
SEP 11	SMITHER	BC	847 2601	L	5			4.32 -	Sunkwa
SEP 11	SMITHER	BC	847 3523	3S	1	NTH VAN	BC	2.00 -	Sunkwa
SEP 12	SMITHER	BC	847 3523	3T	3	NTH VAN	BC	3.00 -	"
SEP 14	VANCVER	BC	687 6242	3L	5	SMITHER	BC	4.32 -	Grizzly
SEP 14	NTH VAN	BC	980 4312	3S	14	SMITHER	BC	7.45 -	Sunkwa
SEP 14	WATSON LK	YT	536 7411	3T	24	SMITHER	BC	11.85 -	Grizzly
SEP 14	WATSON LK	YT	536 7411	3S	2	SMITHER	BC	1.55 -	"
SEP 14	VANCVER	BC	684 9211	3K	2	SMITHER	BC	2.00 -	General - Primary
SEP 14	VANCVER	BC	666 0424	3L	8	SMITHER	BC	6.30 -	" "
SEP 16	NTH VAN	BC	980 4312	3S	36	SMITHER	BC	18.34 -	" "
SEP 17	VANCVER	BC	684 9211	3L	4	SMITHER	BC	3.66 -	" "
SEP 17	VANCVER	BC	666 0424	3L	8	SMITHER	BC	6.30 -	" "
SEP 17	VANCVER	BC	688 8886	3K	8	SMITHER	BC	8.00 -	General - "
SEP 17	VANCVER	BC	685 5361	3L	1	SMITHER	BC	3.00 -	Mid-Ex

PLEASE SEE REVERSE SIDE FOR EXPLANATION OF TYPES OF LONG DISTANCE CALLS.

tear stub here

CASHIER STUB

If any part of this bill has been paid or is being adjusted, please deduct and pay balance. Payment may be made at any of our business offices or payment agencies.

IMPORTANT

WHEN REMITTING BY MAIL please detach cashier stub, showing telephone number and Amount and mail with your payment.

FOR INQUIRIES CALL BUSINESS OFFICE TELEPHONE NUMBER

B.C. TELEPHONE COMPANY

Travels 5N 1P 4.5.74 General Cobre Primary 116-52

Box 218 STATEMENT Phone 847-2545

SMITHERS HARDWARE LTD.

SMITHERS, B.C.

Snippaker

Cobre Explorations
2467 Kilmarnock cres.
North Vancouver B.C.

DATE	REFERENCE	DEBIT	CREDIT	BALANCE
July 24	7121	46.57		46.57
25	R026	57.00		103.57
Aug 3	7588	13.27		117.84
11	7688		103.57	14.27
29	8071	12.42		26.69

Paid 7/73
Ck # 190

Standard Oil Compa
of British Columbia
Limited

SOLD TO

REC'D BY

CHEV

SMITHERS BC 653-6

DAY YR.

	QUANTITY	PRICE	AMOUNT
PREMIUM ☐ CHEVRON ☐			
MOTOR OIL BRAND			
LUBRICATION			
327 E BATTERY			36 50
1852380		PROV. SALES TAX	1 93
		TOTAL	38 43

VEHICLE LICENSE NUMBER

ORIGINAL

SHOW BRAND AND SERIAL NUMBER OF TIRES SOLD ON THIS INVOICE

RETAIN THIS INVOICE IF USE OF PRODUCT PERMITS TAX REFUND

S-26-10-72

Radio
Equipment
Batteries

Cash

Folio ________ Statement

Oct. 26 1973

Mr. Mike Fitzgerald.
254 E 4th St. N. Van.

In Acc't With Lakeside Motel

Terms Box 816 Smithers BC.

To Expedite Radio Standby Etc.	475.00

Paid in Full 31 Oct/73 Cheque # 216

With Thanks [illegible]

Mike Enclosing Receipt For Cone.
Regards.
W.W.

PL REMIT TO:

CANADIAN MARCONI COMPANY

2442 TRENTON AVE., MONTREAL 301, QUEBEC, CANADA

SERVICE WORK ORDER INVOICE

MARINE & LAND COMMUNICATIONS DIVISION

CUSTOMER'S NAME: MINEX SERVICES
1289 EMERY PL.
N. VAN.

NUMBER OF INVOICE COPIES REQUIRED:

CUSTOMER ORDER NO.

ORDER DATE (D M)

REQUESTED COMPLETION

INVOICE TO

SHIP'S NAME/SITE/VEHICLE

MIXED | NON-SHIP | PAPER | CODE

RAMAC CO. NAME

FED. SALES TAX APPLICABLE ☐ | LICENSE / EXEMPTION CERT.

PROV. SALES TAX APPLICABLE ☐ | LICENSE / EXEMPTION CERT.

5 COST CENTRE NO. 8|9: 5732 | SWO NO.: 212471 | 14|15 DATE CHARGED 20|21 (D M Y) | CUSTOMER/ACCOUNT NO. 27

28 SALES ORDER/CONTRACT NO. 33 | TERMS (X - INTERNAL, 0 - NET 30, 2 - CASH) | 34 ☐ | 35 WORK | 36 EQUIP. CODE 38|39 | FAIL CODE 40 | 41 SER. A

INSTRUCTIONS

MAKE UP - RR24 CONNECTOR
TO - PL 259 CONNECTOR

WORK PERFORMED

MADE UP ADAPTOR FOR SSB
ANTENNA.

PARTS & MATERIALS USED	QTY.	UNIT PRICE	AMOUNT
CONNECTOR 97-3106A14S-6S	1	5 26	5 2
CONNECTOR CAP MS3057-6A	1	2 60	2 6
CONNECTOR PL 259	1	1 74	1 7
ADAPTOR UG 175	1	[illegible] 46	4
UNION PL 258	1	3 12	3 1
BROUGHT FORWARD FROM PAGE 2			
TOTAL PARTS & MATERIALS USED		43 TAX CODE 0 7 44|45	13 1

LABOUR	HOURS	RATE PER HOUR	EXTENSION
REGULAR HOURS	0.5	15.00	7 50
OVERTIME HOURS			
TRAVEL TIME			
WAITING TIME			
TOTAL LABOUR		52 TAX CODE 53|54	7 5

MILEAGE _____ @ _____ ¢ PER MI.

SUB CONTRACT WORK

OTHER EXPENSES

TOTAL EXPENSES — 65 TAX CODE 66|67

PROVINCIAL SALES TAX (PROVINCE) @ BC 5% | 73 2 1 1 | TAX ACCOUNT 2 0 0 0 | 79|80 6

DATE WORK STARTED (D M Y): 24 8 73 | DATE WORK FINISHED (D M Y): 24 8 73

EQUIPMENT TYPE | MODEL NO. | SERIAL NO.

SERVICE CENTRE NAME | WORK SITE | NEXT SERVICE CENTRE PORT

TYPE OF SERVICE | AUTHORIZATION FOR WORK

SIGNATURE OF TECHNICIAN OR SUPERVISOR

X _____ CUSTOMER'S SIGNATURE

TOTAL AMOUNT DUE ▶ 86 $ 21 3

CUSTOMER INVOICE COPY

CREST LABORATORIES (B.C.) LTD.

1068 HOMER STREET
VANCOUVER 3, B.C.
PHONE 688-8586

CERTIFICATE OF ASSAY

TO Cobre Explorations Ltd.,
1289 Emery Place,
North Vancouver, B. C.

September 17, 1973
Lab 5191

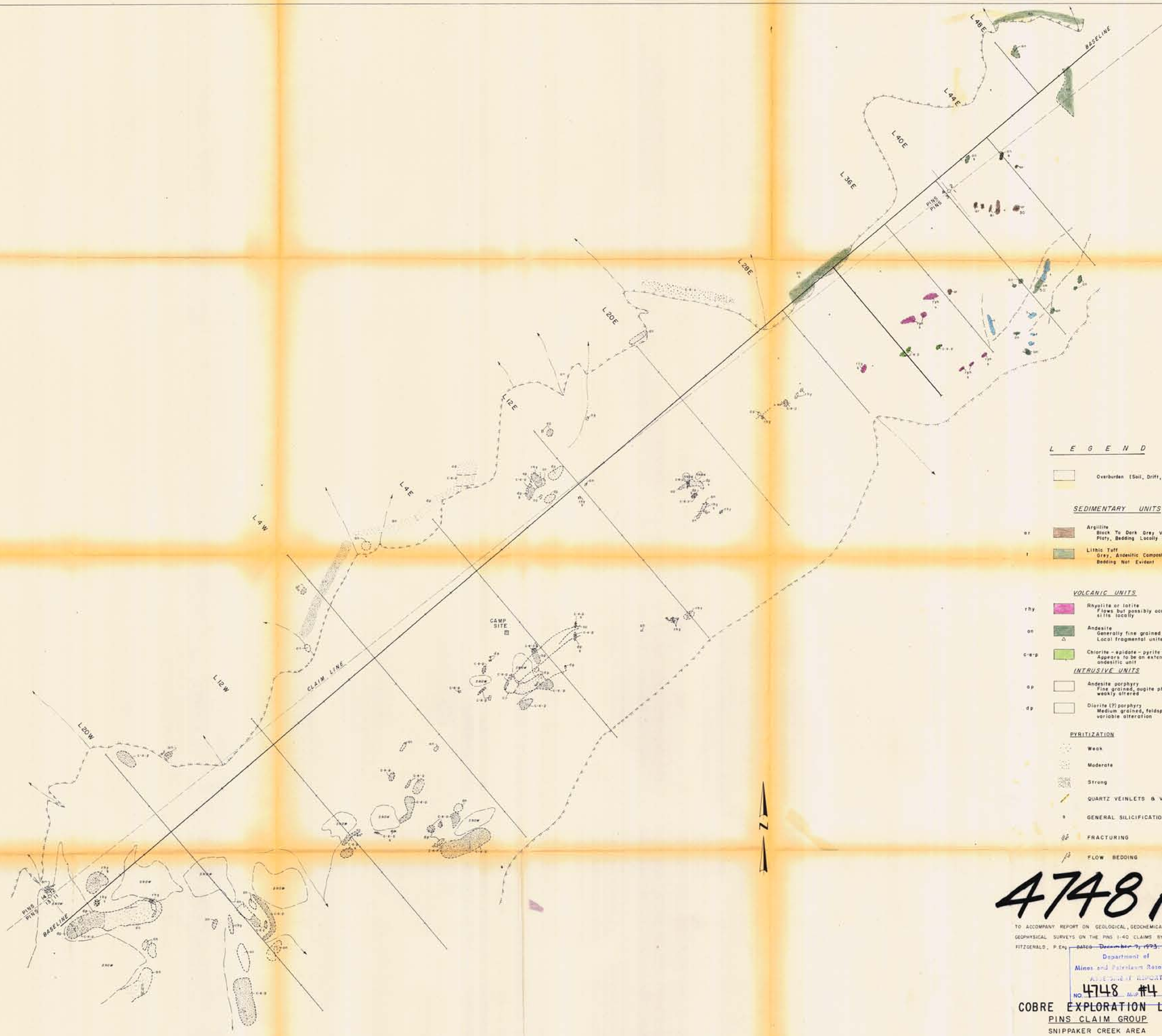
I hereby certify THAT THE FOLLOWING ARE THE RESULTS OF ASSAYS MADE BY US UPON THE HEREIN DESCRIBED SAMPLES.

MARKED	GOLD		SILVER									
	Ounces per Ton	Value per Ton	Ounces per Ton	Percent	Percent	Percent GRID LOCATION	Percent	Percent	Percent	Percent	Percent	Percent
33929 C	trace		trace	18+95W/8+10S								
33930 C	trace		trace	18+50W/6+70S								
33931 C	trace		0.3	17+25W/3+60N								
33932 C	trace		0.1	19+15W/4+80N								
33933 C	trace		trace	11+50N/7+25S								

NOTE:
Rejects Retained One Month
Pulps Retained Three Months
Unless Otherwise Arranged.

Gold calculated at $ ..... per ounce

R. A. Williams
Registered Assayer; Province of British Columbia



L E G E N D

Overburden (Soil, Drift, Etc.)

SEDIMENTARY UNITS

ar — Argillite
Black To Dark Grey Very Fine Grained Platy, Bedding Locally Evident

l — Lithic Tuff
Grey, Andesitic Composition, Bedding Not Evident

VOLCANIC UNITS

rhy — Rhyolite or latite
Flows but possibly occur as sills locally

an — Andesite
Generally fine grained flows
Local fragmental units

c-e-p — Chlorite – epidote – pyrite rock
Appears to be an extensively andesitic unit

INTRUSIVE UNITS

ap — Andesite porphyry
Fine grained, augite phenocrysts, weakly altered

dp — Diorite (?) porphyry
Medium grained, feldspar phenocrysts variable alteration

PYRITIZATION

Weak

Moderate

Strong

QUARTZ VEINLETS & VEINS

GENERAL SILICIFICATION

FRACTURING

FLOW BEDDING

4748 M4

TO ACCOMPANY REPORT ON GEOLOGICAL, GEOCHEMICAL, AND GEOPHYSICAL SURVEYS ON THE PINS 1-40 CLAIMS BY M.J FITZGERALD, P.Eng. DATED December 7, 1973.

COBRE EXPLORATION LTD.

PINS CLAIM GROUP

SNIPPAKER CREEK AREA

OUTCROP GEOLOGY

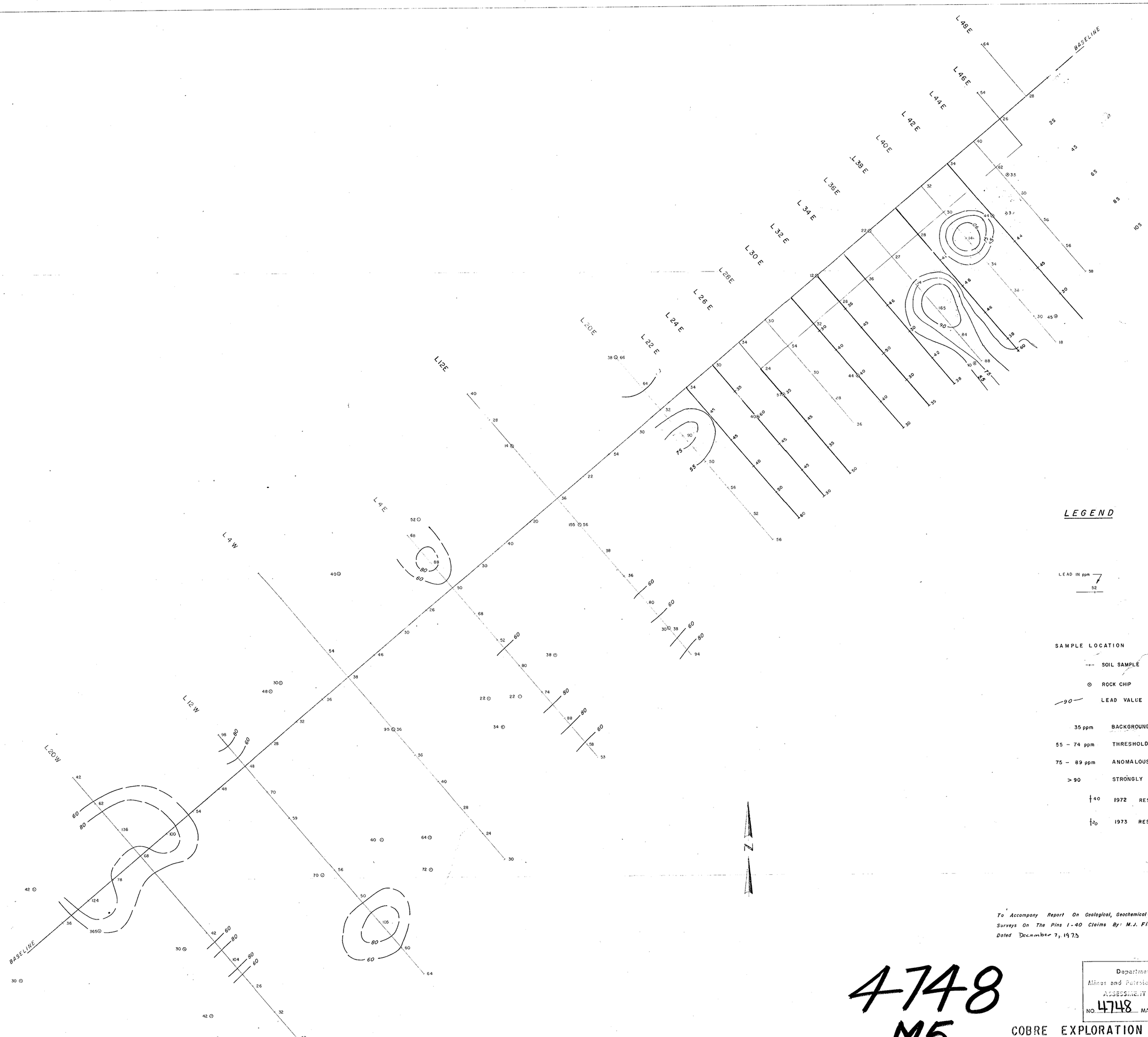
LIARD M.D., BRITISH COLUMBIA

200 100 0 200 400
SCALE IN FEET

DECEMBER 1973

PLATE I

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — M. J. FITZGERALD



LEGEND

LEAD IN ppm
52

SAMPLE LOCATION

- SOIL SAMPLE
- ROCK CHIP
- 90 — LEAD VALUE CONTOURS

35 ppm	BACKGROUND
55 – 74 ppm	THRESHOLD ANOMALOUS
75 – 89 ppm	ANOMALOUS
> 90	STRONGLY ANOMALOUS
†40	1972 RESULTS
†30	1973 RESULTS

To Accompany Report On Geological, Geochemical And Geophysical Surveys On The Pins 1-40 Claims By: M.J. Fitzgerald, P.Eng. Dated December 7, 1973

4748
M5

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4748 MAP #5

COBRE EXPLORATION LTD.

PINS CLAIM GROUP

SNIPPAKER CREEK AREA

GEOCHEMICAL SURVEY

LEAD IN ppm

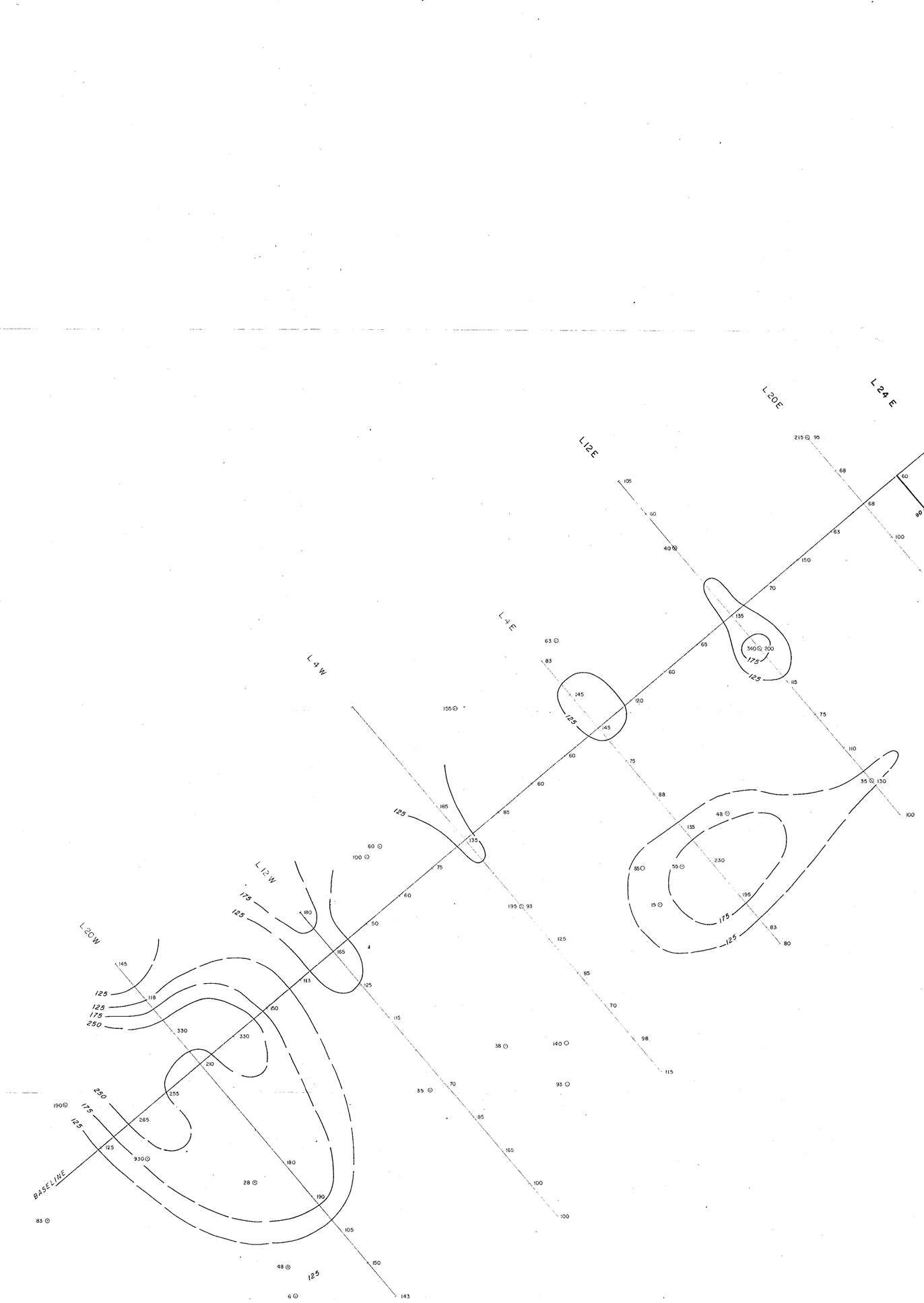
LIARD M.D., BRITISH COLUMBIA

200 100 0 200 400
SCALE IN FEET

DECEMBER 1973

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

PLATE 2



LEGEND

ZINC IN ppm
7.5

SAMPLE LOCATION

- SOIL SAMPLE
- ⊙ ROCK CHIP
- 125 TENTATIVE CONTOURS (SOIL SAMPLES ONLY)

75 ppm	BACKGROUND
125 – 174 ppm	THRESHOLD ANOMALOUS
175 – 249 ppm	ANOMALOUS
> 249 ppm	STRONGLY ANOMALOUS
40	1972 RESULTS
100	1973 RESULTS

N

To Accompany Report On Geological, Geochemical And Geophysical Surveys On The Pins 1-40 Claims By: M.J. Fitzgerald P.Eng. Dated December 7, 1973

4748 M6

COBRE EXPLORATION LTD.

PINS CLAIM GROUP

SNIPPAKER CREEK AREA

GEOCHEMICAL SURVEY

ZINC IN ppm

LIARD M.D., BRITISH COLUMBIA

200 100 0 200 400
SCALE IN FEET

DECEMBER - 1973

PLATE 3