COBRE EXPLORATION LTD.

REPORT ON 104B/10W

GEOLOGICAL AND GEOCHEMICAL SURVEYS

PINS 1-40 Mineral Claims

Atlin M. D. 56°33'N, 130°45'W

September 8-12, 1972

by: M.J. Fitzgerald, P. Eng.

3982

3982

MIN-EX SERVICES LTD.

# REPORT

# ON

# GEOLOGICAL AND GEOCHEMICAL

# SURVEYS

## PINS 1-40 MINERAL CLAIMS

SNIPPAKER CREEK AREA
LIARD M.D.

56°33'N, 130°45'W
NTS 104 B

FOR

COBRE EXPLORATION LTD.



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

November 13, 1972

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ILLUSTRATIONS



PLATES IN POCKET

## INTRODUCTION

This report describes the results of work conducted during 1972 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. from September 8 to September 12, 1972. The 40 contiguous full-sized M.C.'s were staked on October 7, 1971 and were recorded on October 15, 1971.

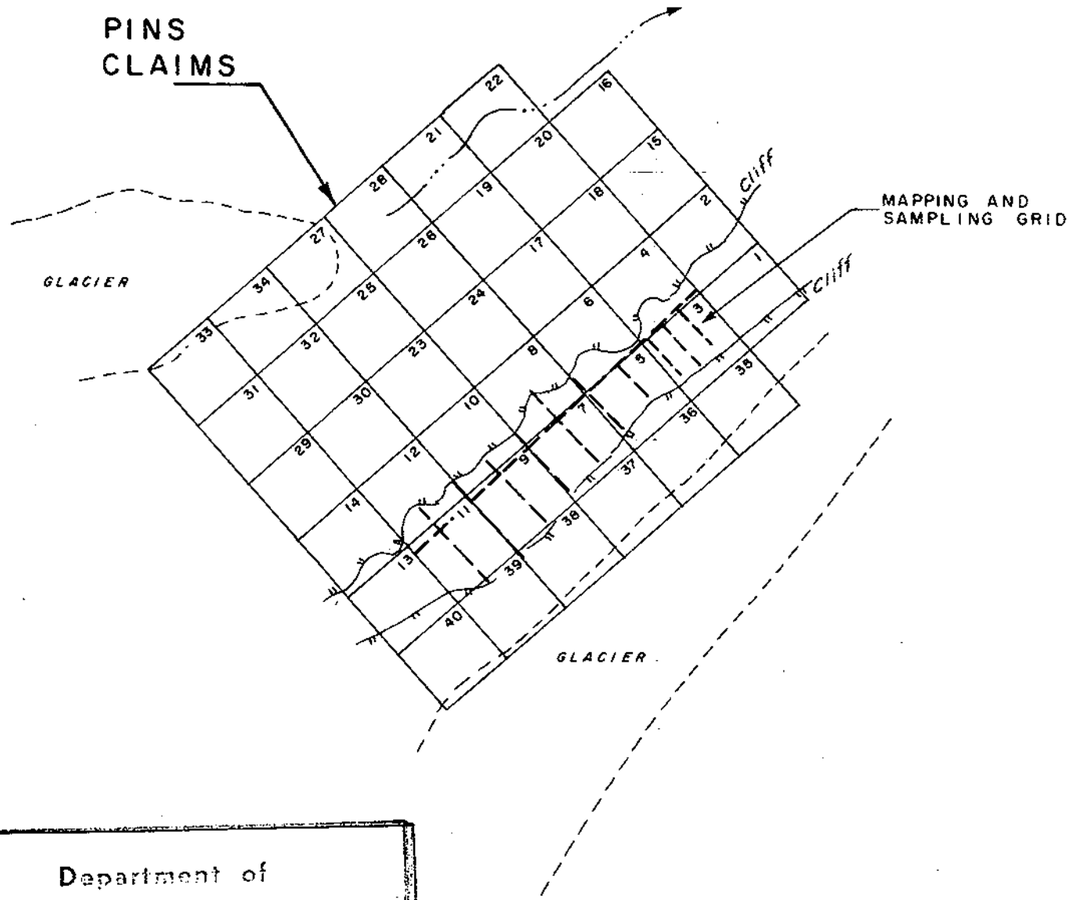
Examination during 1971 indicated the presence of a feldspar porphyry intrusive containing abundant pyrite and small amounts of chalcopyrite on the claims and also resulted in the discovery of an interesting low-grade copper showing south of the porphyry intrusive in an area largely covered by snow. Copper-bearing float was found in another area and silt samples from streams in the northern part of the claim group revealed the presence of anomalous amounts of copper and molybdenum. The 1972 work program was designed to follow up the 1971 work and result in a better understanding of the geologic environment. The program consisted of geologic mapping and geochemical sampling surveys which were conducted from September 8 to September 12.

## LOCATION AND ACCESS

Layout of the 40 PINS claims in relation to the mapping and sampling grid is shown on Figure 1. Record numbers of the claims are 57488-57527 inclusive. The claim group straddles a flat-topped ridge which lies between two forks of Snippaker Creek, a tributary of the Iskut River. The surveys were conducted 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.

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 scheduled fixed wing service from Terrace to the Snippaker Creek airstrip and then by helicopter the remaining 2-1/2 miles.





KEY MAP

BRITISH COLUMBIA


# COBRE EXPLORATION LTD.

## GRID LOCATION AND CLAIMS MAP

PINS CLAIM GROUP

LIARD M.D., BRITISH COLUMBIA

0 1500 3000

SCALE IN FEET

PREPARED BY
VERSATILE DRAFTING LTD.

FIGURE 2




COBRE EXPLORATION LIMITED

PINS 1-40 MINERAL CLAIMS
Liard M.D.
Figure 1 Scale: 1" = 136 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.

## HISTORY

The area covered by the PINS claims was previously staked by Silver Standard Mines Ltd. in the mid-1960's but no work was filed and results of any work done are not known to the writer.

## MAPPING AND SAMPLING GRID

A picket-line grid was established in the survey area to provide control for both the geologic mapping and the geochemical survey. The base line is 7,600 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 base line at 800-foot intervals roughly from the cliffs on the northwest side of the ridge to either the cliffs on the southeast 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.

## REGIONAL GEOLOGY

The only available map showing regional geology in the Iskut-Unuk Rivers-Snippaker Creek region is the Geological Survey of Canada Map 9-1957. This map indicates the presence of a northwest-trending belt of Triassic siltstone and argillite which is extensively intruded by rocks of the Coast Intrusions and also locally by younger felsite porphyry intrusions. Further to the southeast, the presence of pre-Upper Jurassic volcanics and sediments of Upper Jurassic to Lower Cretaceous age is indicated.

The map also shows a felsite porphyry stock intruding intermediate rocks of the Coast Range Batholith within the area of the "PINS" claim group. Observations on the claim group indicate, however, that the actual geology is quite different from that shown on Map 9-1957. Reconnaissance

examination in 1971 at the time the claims were staked indicated the presence of a pyritized feldspar porphyry intrusive on the north slopes of the central ridge. This work revealed, however, that the porphyry intruded volcanics of probable Triassic age rather than Coast Range intrusives. Work during 1972 further indicates that no substantial areas of Coast Intrusions are present on the claims and also that the main body of the feldspar porphyry intrusive is limited to an area on the lower slopes of the central ridge which is much smaller than that indicated on Map 9-1957.

## GEOLOGY OF THE PINS CLAIM GROUP

As mentioned earlier, approximately 31,000 feet of picket-line grid was established on the central ridge which bisects the claim group. Geologic mapping of the exposed rock outcrops was conducted contemporaneously with the geochemical sampling and also after the sampling was completed. Mapping was done at the scale of 1 inch equals 400 feet and 1 inch equals 200 feet; the final geologic map, shown as Plate I, was compiled at 1 inch equals 200 feet.

Five rock units were mapped; three of volcanic origin and two of apparent intrusive origin. The names shown on Plate I are field terms and might be changed when petrographic studies of hand specimens taken during the mapping are completed. The three volcanic units recognized were termed rhyolite (or latite), andesite, and chlorite-epidote-pyrite rock. The two intrusive units were termed diorite porphyry and andesite porphyry. Each rock unit will be described separately.

### Rhyolite or Latite

The rhyolite unit usually appears to consist of flows but locally may be present as sills. It is generally light colored, massive, and dense but locally is fractured, silicified, and contains cross-cutting quartz veinlets. Where present in the rhyolitic unit, visible mineralization usually consists of disseminated pyrite.

### Andesite

The unit mapped as andesite is generally dark greenish gray, fine grained and ranges from platy to massive in outcrop. Fragmental units (agglomeratic?) are present locally which are characteristic of thick andesitic sections mapped

elsewhere by the writer. It should also be noted that very fine grained bands were also observed which may originally have been tuffaceous and it is possible that a portion of the andesitic unit may be of sedimentary origin. Rocks of the andesite unit usually exhibit weak alteration to chlorite and in several portions of the area mapped are more intensely altered to chlorite, epidote, and pyrite. Carbonate-epidote-pyrite veinlets are usually present in the areas of stronger alteration.

Chlorite-Epidote-Pyrite Rock

The third volcanic unit mapped was simply termed chlorite-epidote-pyrite rock (c-e-p) after its main mineral constituents as the alteration to these minerals is so intense that it is impossible to megascopically determine original composition of the rocks in the unit. In most exposures, chlorite, epidote, and pyrite make up 70% to 90% of the rock even though the relative percentages of the three minerals vary somewhat.

Rocks of the unit generally are apple green to dark green in color and are medium fine to very fine grained. Pyrite is often very abundant and locally is massive; pyrite content probably averages 15% to 20% by volume and ranges between 7% and 80%. A general guide to the strength of pyritization is shown on Plate I for all rock units and the variation in pyrite content in the chlorite-epidote-pyrite rock unit can be readily seen. Much of the pyrite in this unit is distinctly crystalline. Fragmental texture very similar to that in some of the rocks mapped as andesite is present locally suggesting that the c-e-p unit may represent, at least in part, intensely altered portions of the andesite unit.

Diorite Porphyry

Of the two intrusive rock units, the diorite porphyry is far more abundant and a small stock may be present adjoining the extreme west-southwesterly portion of the grid. Within the grid-area the porphyry appears to be present mainly as dikes and irregular masses. No definite trend or orientation of diorite porphyry intrusion was noted. In appearance, it is somewhat similar to the felsite or feldspar porphyry mapped by the GSC in the general Snippaker Creek region but generally has a greater phenocryst to groundmass ratio, is darker in color and, although locally well pyritized, does not have the ubiquitous disseminated pyrite which characterizes the former. Where not bleached by the oxidation of contained pyrite, the rock is generally medium gray in color and blocky in outcrop. Plagioclase phenocrysts averaging 0.1 to 0.2 inches across are dominant but, in some areas, small phenocrysts of a ferro-

magnesian mineral now altered to chlorite are also evident. The groundmass is subordinate and quite fine grained. Alteration of the diorite porphyry ranges from slight to moderate; secondary minerals include chlorite, clay, and sericite.

All three volcanic units are perceptibly altered and pyritized near diorite porphyry intrusions but it is not clear whether or not the porphyry is responsible for the alteration. The widespread alteration reflected in the chlorite-epidote-pyrite rock unit and, to a lesser extent, pyritization of the rhyolite unit does not appear to be spatially related to the diorite porphyry. The intensity of chloritization and pyritization of the andesite unit, however, often appears to be directly related spatially to the porphyry and the intensity often perceptibly increases as a diorite porphyry mass is approached.

Andesite Porphyry

The intrusive unit termed andesite porphyry is generally dark gray, medium grained, and is usually only slightly altered and pyritized. Pyroxene phenocrysts up to 0.3 inches in length predominate although smaller plagioclase phenocrysts are present. The groundmass is medium fine grained and is of equal or greater volume than the phenocrysts. Contact relationships strongly suggest that the andesite porphyry is younger than the diorite porphyry and it often is intruded along the edges of diorite porphyry dikes.

As mentioned above, the andesite porphyry is usually unaltered and only rarely contains pyrite even when all nearby rocks contain abundant pyrite. Its spatial relationship to the diorite porphyry indicates that it was intruded along the same zones of weakness but the lack of alteration and pyritization of the andesite porphyry suggests rather strongly that it was intruded at a time significantly later than the diorite porphyry.

General

The mapping of the units shown on Plate I is believed to quite accurately indicate the abundance and extent of rock outcrop within the grid area on the top of the ridge although it is quite possible that some small, subtle outcrops may have been missed. In a general way, the rough extent of the units present below the cliffs on the northwest side of the ridge are also shown but it is emphasized that the position of these units is based on very limited examination of outcrops and the extent of the units parallel to the top of the cliff was estimated visually. Observations of the mapped

units below the cliffs are thus of limited accuracy but are useful as an aid in projection of rock distribution trends evident from the more detailed mapping.

The limited amount of time available did not allow mapping in sufficient detail to attempt correlation of the volcanic rock units through the grid area. For instance, it is not known if the rhyolite unit represents one or more flows or whether those mapped are lenticular and of local extent. Likewise, the andesite unit as observed ranged from a type which might be termed "platy" to a type which is quite massive and blocky. Additionally, it is not possible to say whether the chlorite-epidote-pyrite rock unit represents one flow unit which is exceptionally susceptible to alteration or whether the unit simply defines the lateral and vertical extent of pre-existing rocks which have been altered. If the latter is the case, it is obvious from Plate I that portion of the grid from 15W to 28E represents an alteration center.

Some tentative suggestions of rock unit correlation can be made, however. The distribution of outcrops mapped as rhyolite between 10E and 34E and southeast of the base-line suggest general continuity and may indicate a rhyolitic horizon is present throughout this portion of the area. The rhyolite outcrops shown in the southwestern portion of the grid and southwest of cross-line 20W do not appear to be part of the same horizon as that further northeast. This portion of the grid is several hundred feet higher than that to the northeast and, although only a few flow bedding attitudes are shown on Plate I due to the difficulty in discerning flow bedding in the altered rocks, a general flow bedding was observed in the rhyolite outcrop at 2+50S/24W of N60W,20°NE. This attitude does not appear to fit the distribution of rhyolite in the area to the north-east and it is postulated that two separate rhyolitic horizons are present.

The distribution of rocks mapped on the top of the ridge and observations of rock distribution at the base of the northwest slope coupled with helicopter traverses along the cliffs on the northwest slope suggest that the volcanic series consists of a thick section of andesitic rocks, largely flows, which near the top of the ridge are inter-calated with flows of rhyolitic composition. The volcanic pile is intruded locally by small stocks and numerous dikes of intermediate to basic composition. In general, the geologic environment appears to exhibit characteristics of one in which deposits of the massive sulfide type might be present.

## MINERALIZATION AND ALTERATION

The hydrothermal alteration characteristics of each rock unit were briefly described in the preceding section. Notes were kept during the mapping and the abundance of secondary chlorite, epidote, silica, pyrite, carbonate, and base metal sulfides was recorded. As 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 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 abundant.

Most of the quartz veins and veinlets observed contain chlorite and pyrite; a few also contain small amounts of chalcopyrite, galena, and sphalerite. An area of copper mineralization was noted in 1971 which could not be mapped during the 1972 program. This showing was located at approximately 28+50W/1N on the current grid and 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. During the 1972 work program, the showing was entirely covered by snow remaining from the previous winter and could not be mapped.

Copper-bearing float was also noted during the 1971 examination in the lower portions of the steep gulch heading in the northeastern portion of the grid between 40E and 48E. This material consisted of hornfelsed andesite 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 in the area near the head of the gulch in 1972. Consequently, it is assumed that the float originates somewhere in the middle reaches of the gulch.

A 6-inch wide, easterly trending quartz vein was noted during the mapping at 24+50W/1+80S which contains pyrite

and some chalcopyrite, galena, and sphalerite. A rock chip sample was taken of the vein material and the analytical results are shown on Plate II. Very small amounts of base metal sulfides were noted at a few other localities but, in general, the very fine grained sulfides observed in the remaining exposures mapped appeared to consist entirely of pyrite. The geochemical results described in the next section, however, suggest that more intensely mineralized zones may be present beneath overburden cover in several portions of the area covered by the mapping.

## GEOCHEMICAL SURVEY

As can be observed on Plate I, rock exposures on the ridge top amount to less than 10% of the area so a geochemical soil sampling survey was undertaken to better evaluate the extent and distribution of base metal values within the area mapped. The 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 thickness ranges from 0 to 4 inches and the leached "A" horizon thickness ranges from 0 to as much as 6 inches. The "B" zone material generally consists of tan to brown sandy loam but the color of the sampled material varies from tan through brown to red and locally the material is clayey or silty rather than sandy. In some areas the soil is quite gravelly and no samples were taken from areas where insufficient fine material was present. The average depth of sampling was about 11-12 inches.

The samples were taken in kraft paper bags and the grid location was marked on the exterior of the bag. In areas where rock exposures were 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 characteristics of the "B" horizon were kept for each soil sample. Similar notes recording rock type, apparent alteration, and abundance and type of sulfides were kept for each rock chip sample. A total of 146 soil and 27 rock chip samples were taken. Of these, 110 soil samples and all 27 rock chip samples were analyzed.

The samples were taken to Crest Laboratories in Vancouver and each was analyzed for copper, lead and zinc content. In addition, 74 soil and 10 rock chip samples were analyzed for silver and gold. Each soil sample was screened to -80 mesh and digested with a mixture of nitric and perchloric acids. Metal contents were then determined with a Tectron AA5 atomic adsorption spectrophotometer. The rock chip samples were pulverized to -100 mesh and similarly digested with nitric and perchloric acids; metal contents were also determined by atomic adsorption. The gold determinations were similar to those for the other four metals with the exception that the samples were digested with aqua regia and the gold was stripped organically with methylisobutylketone. All metal contents were reported in parts-per-million.

Results of the survey are shown on Plate II (Composite Metal), Plate III (Copper), Plate IV (Lead), and Plate V (Zinc). Histograms were compiled for copper, lead, and zinc in soil and threshold anomalous, anomalous, and strongly anomalous levels were determined for each metal. The sampled lines are too widely spaced to allow firm contouring of the values for each metal shown on Plates III, IV, and V but tentative contours are shown on each Plate to better define anomalous trends.

Copper

Histograms of copper content in soil indicate background in the surveyed area is 50 ppm; threshold anomalous values were selected at 100-149 ppm, anomalous at 150-299 ppm, and strongly anomalous at 300 ppm and above. Plate III indicates that copper content in the southwestern portion of the grid is above threshold values in a zone approximately 4,000 feet long and 300 to 1,600 feet wide. Within this area, a portion 2,200 feet long and 300 to 1,500 feet wide contains in excess of 150 ppm copper. In both instances, the anomalous zones are open to the southwest and northwest. The highest value in the area described is 520 ppm. Four scattered rock chip samples were taken from the anomalous zone but only one had values comparable to the soil values, possibly indicating that the source of copper is one or a series of relatively high grade occurrences within the anomalous area.

The presence of anomalous copper content in soil does not appear to be related to the presence of the chlorite-epidote-pyrite rock unit. There is, however, a spatial relationship to the presence of the rhyolite unit and also to diorite porphyry intrusives.

No other significant copper anomalous areas were noted within the surveyed area.

Lead

Histograms of lead content in soil indicate background in the surveyed area is 35 ppm; threshold anomalous values were selected at 60-79 ppm, anomalous at 80-109 ppm, and strongly anomalous at 110 ppm and above. Plate IV indicates that anomalous lead content is present in three principal portions of the surveyed area; 1) the southwest end of the grid within the area of anomalous copper content, 2) in the south-central portion of the grid on lines 4E and 12E roughly within and fringing the long "tail" of threshold anomalous copper content which extends eastward into this area, and 3) in the northeast portion of the grid on lines 36E, 40E, and 44E in an area where no anomalous copper content was noted.

The area of anomalous lead content in the southwestern portion of the grid (#1 above) is 900 feet long by 500 feet wide and is open to the west. The anomaly is of moderate intensity with a maximum value of 124 ppm.

The anomalous area in the south-central portion of the grid (#2 above) was not contoured due to the presence of a number of low rock chip samples which were taken between the grid lines. The maximum lead value in this area is only 88 ppm but the anomaly may be of significance as it is largely coincident with areas of anomalous or threshold anomalous copper and zinc content.

The lead anomaly in the northeast portion of the grid (#3 above) is approximately 950 feet long and 300 to 600 feet wide. The anomaly is open to the south and its actual extent is unknown. The highest value is 165 ppm and the anomaly also may be significant as it is partially coincident with a zinc anomaly.

As is the case with areas of anomalous copper content, the areas anomalous in lead do not appear to be related to the distribution of the chlorite-epidote-pyrite rock unit but do appear to be spatially related to either the rhyolite unit or to intrusions of diorite porphyry. The #1 anomalous area appears to be most closely associated with the rhyolite unit, the #2 possibly with porphyry and rhyolite, and the #3 with the trend of rhyolite distribution in the area and also, possibly, with the presence of altered pyritized andesite.

Zinc

Histograms of zinc content in soil indicate background in the surveyed area is 75 ppm; threshold anomalous values were selected at 125-174 ppm, anomalous at 175-249 ppm, and strongly anomalous at 250 ppm and above. As in the case with lead, Plate V indicates anomalous zinc content is present in three principal areas; 1) the southwest portion of the grid centered on Line 20W and the base line, 2) in the south-central part of the grid centered on 4E/8S, and 3) in the northeast portion of the grid on Lines 36E and 40E.

The anomaly in the southwestern portion of the grid (#1 above) is coincident with but larger than the lead anomaly in this area and coincident with but smaller than the copper anomaly. The area of anomalous zinc content is 1,400 feet long by 1,100 feet wide and is open to the west. The highest value is 330 ppm.

The anomaly in the south-central part of the grid (#2 above) is coincident with the "tail" of threshold anomalous copper content in the area and is largely coincident with the zone of anomalous lead content. The area of threshold anomalous zinc content is 1,400 feet long by 100 to 600 feet wide and is contained on all sides by samples of lower zinc content.

The anomaly in the northeast portion of the grid (#3 above) is partially coincident with the lead anomaly present in the area. The area of threshold anomalous zinc content is 700 feet long by 200 to 400 feet wide and, as is the case with lead, the anomaly is open to the south.

The areas of anomalous zinc content also appear to be most closely associated with the distribution of the rhyolite unit and/or the presence of diorite porphyry intrusions. As is the case with copper and lead, the #1 anomalous area appears to be most closely associated with the presence of the rhyolite unit. The #2 anomalous area appears to be related, spatially at least, to the presence of both diorite porphyry and rhyolite. The #3 anomaly does not, however, fit the trend of rhyolite distribution and appears to be related to the presence of altered, pyritized andesite.

Silver and Gold

As only a portion of the samples taken were analyzed for silver and gold, separate Plates showing their distribution were not prepared and instead reference is made to the composite metal results shown on Plate II. No strong anomalies

for either silver or gold were revealed by the survey but both metals are present in unusual amounts in a background sense throughout the surveyed areas.

Silver content in excess of 2.0 ppm is present at a number of sample sites in the area of the coincident Cu-Pb-Zn anomaly in the southwestern part of the grid area. Silver content in this range is also present to the northeast of this anomaly along the base line. One anomalous gold sample (0.22 ppm) was also taken at 20W/base line within the area of this coincident anomaly.

One other anomalous gold sample (0.30 ppm) was taken at 28E/4S but no correlation with other anomalous metal content is evident. The sample at 12E/12S returned a 2.0 ppm silver value associated with 100 ppm lead content.

## SUMMARY AND CONCLUSIONS

The overall geologic environment appears to be characterized by the presence of a thick series of andesitic flows and, possibly, sediments which become more acidic or rhyolitic upward. The volcanic series is intruded by two or possibly three types of porphyritic rocks in a pattern which does not reveal any particular intrusive trend.

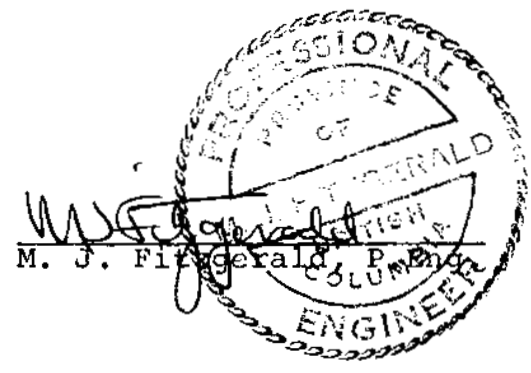
Rocks which are intensely altered to chlorite, epidote, and pyrite form an integral part of the volcanic series and may represent either a volcanic horizon which is very susceptible to alteration or may instead reveal the presence of an alteration center within which most of the pre-existing rocks have been extensively altered.

Two previously known leads to possible economic sulfide mineralization could not be followed up during the 1972 program and no areas strongly mineralized with base metal sulfides were found within the limits of the survey. However, the soil geochemical program did reveal the presence of one large and two medium sized areas which contain anomalous amounts of copper, lead, and zinc. In addition, silver and gold content in the area of the survey was of an abnormally high background although no significant, distinctly anomalous areas were detected. The large ratio of cover to rock exposure coupled with the presence of the geochemical anomalies suggests that significant areas of mineralization may be present within the areas covered with overburden.

In general, the geologic environment appears to exhibit the characteristics of one in which relatively high grade massive sulfide deposits may be present.

Further work, including expanded and more detailed geologic mapping and geophysical surveys, is justified.

M. J. Fitzgerald, P. Eng.



INVOICES

MIN - EX SERVICES LTD.

GEOLOGICAL CONSULTING
AND
MINERAL EXPLORATION MANAGEMENT

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

2467 KILMARNOCK CRESCENT
NORTH VANCOUVER, B.C.
TEL: 980-4312

November 13, 1972

Cobre Exploration Ltd.,
705 Fort Worth National Bank Building,
Fort Worth, Texas 76102,
U.S.A.

## Invoice For Snippaker Prospect Work

## PINS 1-40 CLAIMS

Geologic Mapping, Geochemical Survey,
Report and Map Preparation - September to November, 1972.

### Professional Services

| | | |
|---|---|---|
| M. J. Fitzgerald<br>Field Work<br>September 8-12 - 4-1/2 days @ $175.00 | $787.50 | |
| Preparation for field work and travel<br>(Literature review, gathering field gear, hiring personnel, scheduling arrangements)<br>3 days @ $100.00 | 300.00 | |
| Report and Map Preparation<br>6 days @ $150.00 | 900.00 | |
| Total: | | $1,987.50 |

### Expenses

| | |
|---|---|
| Transportation to and from Terrace<br>(Personal car)<br>1,920 miles @ 11¢ = $211.20<br>Project shore = 1/2 | $105.60 |
| Motel<br>4 days (5 man days) | 40.83 |

. . . cont'd

MIN - EX SERVICES LTD.

GEOLOGICAL CONSULTING
AND
MINERAL EXPLORATION MANAGEMENT

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

2467 KILMARNOCK CRESCENT
NORTH VANCOUVER, B.C.
TEL: 980-4312



| | | |
|---|---|---|
| Food | | |
| Travelling - 4 days (6 man days) | $ 44.75 | |
| Camp - 10 man days @ $10.00 | 100.00 | |
| Camp Gear Rental | | |
| 5 days @ $10.00 | 50.00 | |
| Supplies | | |
| September 6 - 2 shovels | 5.93 | |
| September 7 - Laths for picket line | 2.04 | |
| - Canvass gear bag | 7.46 | |
| Phone calls | 67.48 | |
| Total: | | $ 424.09 |
| Total Billing | | $2,411.58 |

Items charged directly to Cobre Exploration Ltd. are listed on the attached page

| | |
|---|---|
| Total of said items | $1,779.21 |
| Total Expenditure on PINS 1-40 claims | $4,190.80 |

M. J. Fitzgerald, P.Eng.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
M. J. FITZGERALD

MIN - EX SERVICES LTD.

GEOLOGICAL CONSULTING
AND
MINERAL EXPLORATION MANAGEMENT

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

2467 KILMARNOCK CRESCENT
NORTH VANCOUVER, B.C.
TEL: 980-4312

## Items Charged Directly To

## Cobre Exploration Ltd.

| | |
|---|---|
| Trans-Provincial Airlines Ltd. | |
| Invoice 12403 | $ 268.80 |
| Vancouver Island Helicopters Ltd. | |
| Invoices 510 & 518 | 645.80 |
| Durack Contracting (contract personnel) | |
| Statement September 18, 1972 | 177.00 |
| B.C. Map Production Division | |
| (Photo Blowups) | |
| Invoice 1730 | 37.80 |
| BDC Ltd. | |
| (Delivery of Photo Blowups) | |
| Invoice 35119 | 3.00 |
| Crest Laboratories (B.C.) Ltd. | |
| Invoice 928G | 379.00 |
| Invoice 936G | 114.30 |
| Versatile Drafting Ltd. | |
| Ver 586 | 130.00 |
| Versatile Reproductions & Supply Co. | |
| Invoice P. 1347 | 6.23 |
| Invoice P. 1300 | 17.28 |
| Total: | $1,779.21 |

# GEOCHEMICAL ANALYSES

STATEMENT OF EXPENDITURE

| | |
|---|---|
| Trans-Provincial Airlines Ltd. | |
| Invoice 12403 | $ 268.80 |
| Vancouver Island Helicopters Ltd. | |
| Invoices 510 & 518 | 645.80 |
| Durack Contracting | |
| Contract sampling services (A. Mundle) | |
| Statement September 18, 1972 | 177.00 |
| B.C. Map Production Division | |
| Photo enlargement | |
| Invoice 1730 | 37.80 |
| BDC Ltd. | |
| Delivery of above | |
| Invoice 35119 | 3.00 |
| Crest Laboratories (B.C.) Ltd. | |
| Invoice 928G | 379.00 |
| Invoice 936G | 114.30 |
| Versatile Drafting Ltd. | |
| Ver 586 | 130.00 |
| Versatile Reproductions & Supply Co. | |
| Invoice P. 1347 | 6.23 |
| Invoice P. 1300 | 17.28 |
| Min-Ex Services Ltd. | |
| Professional Services | 1,987.50 |
| Expenses | 424.09 |
| Total: | $4,190.80 |

Personnel

| | |
|---|---|
| M. J. Fitzgerald, P.Eng. | |
| September 8-12, 1972 | 4-1/2 Field Days |
| A. Mundle | |
| September 8-12, 1972 | 4-1/2 Field Days |
| Total: | 9 Field Days |

M. J. Fitzgerald

M. J. Fitzgerald, P.Eng.

PHONE 688-8586

# CREST LABORATORIES (B.C.) LTD.

B.C. REGISTERED ASSAYERS
GEOCHEMISTS

1068 HOMER STREET,
VANCOUVER 3, B.C.

September 26, 1972

Mr. Michael J. Fitzgerald,
2467 Kilmarnock Crescent,
North Vancouver, B.C.

Lab 928G — Geochemical analysis for copper, lead, zinc, silver and gold

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

| Sample Marked: | | Copper ppm | Lead ppm | Zinc ppm | Silver ppm | Gold ppm |
|---|---|---|---|---|---|---|
| BL | 0 W | 50 | 30 | 60 | 2.0 | .11 |
| | 2 | 65 | 46 | 85 | 3.0 | .11 |
| | 4 | 106 | 38 | 135 | 1.3 | .11 |
| | 6 | 68 | 36 | 75 | 1.8 | .14 |
| | 8 | 69 | 32 | 60 | 2.0 | .12 |
| | 10 | 62 | 28 | 50 | 1.5 | .14 |
| | 12 | 350 | 48 | 165 | 2.0 | .09 |
| | 14 | 180 | 48 | 113 | 2.0 | .12 |
| | 16 | 210 | 54 | 150 | 1.5 | .10 |
| | 18 | 275 | 100 | 330 | 2.8 | .22 |
| | 20 | 175 | 68 | 210 | 2.3 | .09 |
| | 22 | 330 | 78 | 255 | 3.0 | .12 |
| | 24 | 370 | 124 | 265 | 2.3 | .10 |
| BL | 26 W | 250 | 36 | 125 | 1.3 | .12 |
| BL | 2 E | 44 | 26 | 60 | 1.8 | .14 |
| | 4 | 115 | 50 | 145 | 1.3 | .12 |
| | 6 | 92 | 30 | 120 | 1.8 | .12 |
| | 8 | 40 | 40 | 60 | 1.3 | .18 |
| | 10 | 32 | 20 | 65 | 1.3 | .14 |
| | 12 | 117 | 36 | 135 | 1.9 | .12 |
| | 14 | 22 | 22 | 70 | 1.8 | .12 |
| | 16 | 100 | 54 | 150 | 1.8 | .10 |
| | 18 | 34 | 30 | 63 | 1.9 | .12 |
| | 20 | 33 | 32 | 68 | 1.8 | .12 |
| | 22 | 42 | 34 | 60 | 1.4 | .13 |
| | 24 | 46 | 30 | 68 | 1.6 | .17 |
| BL | 26 E | 36 | 34 | 65 | 2.0 | .14 |

Mr. Michael J. Fitzgerald,
Lab 928G

| Sample Marked: | | Copper ppm | Lead ppm | Zinc ppm | Silver ppm | Gold ppm |
|---|---|---|---|---|---|---|
| 28E | 0+50 S | 56 | 30 | 70 | 1.3 | .15 |
| 2S | 26 E | 28 | 24 | 53 | 1.9 | .11 |
| | 28 | 58 | 54 | 115 | 1.9 | .18 |
| | 30 | 34 | 32 | 68 | 1.5 | .13 |
| | 32 | 31 | 28 | 60 | 1.6 | .13 |
| | 34 | 39 | 36 | 75 | 1.5 | .12 |
| | 36 | 24 | 27 | 70 | 1.4 | .12 |
| | 38 | 21 | 28 | 60 | 1.6 | .13 |
| 2S | 40 E | 29 | 30 | 70 | 1.5 | .08 |
| BL | 40 E | 28 | 32 | 75 | 1.5 | .08 |
| | 42 | 25 | 34 | 80 | 1.6 | .10 |
| | 44 | 36 | 40 | 78 | 1.6 | .10 |
| | 46 | 24 | 26 | 70 | 2.1 | .10 |
| BL | 48 E | 31 | 28 | 85 | 1.5 | .11 |
| BL | 49+60 E | 51 | 22 | 90 | 1.5 | .13 |
| 20W | 2 N | 305 | 136 | 330 | 1.9 | .11 |
| | 4 N | 190 | 62 | 118 | 2.1 | .07 |
| | 6 N | 345 | 42 | 145 | 2.0 | .09 |
| | 6 S | 184 | 42 | 180 | 1.8 | .09 |
| | 8 S | 375 | 104 | 190 | 2.0 | .09 |
| | 10 S | 56 | 26 | 105 | 1.6 | .04 |
| | 12 S | 114 | 32 | 150 | 1.8 | .12 |
| 20W | 14 S | 106 | 40 | 143 | 1.8 | .14 |
| 4 W | 2 N | 355 | 54 | 165 | 1.5 | .12 |
| | 4 S | 150 | 36 | 93 | 1.3 | .13 |
| | 6 S | 93 | 36 | 125 | 1.4 | .11 |
| | 8 S | 64 | 40 | 85 | 1.6 | .12 |
| | 10 S | 54 | 28 | 70 | 2.1 | .13 |
| | 12 S | 55 | 24 | 98 | 1.5 | .13 |
| 4W | 14 S | 50 | 30 | 115 | 1.4 | .08 |
| 12E | 6 N | 48 | 28 | 60 | 1.5 | .08 |
| | 8 N | 126 | 40 | 105 | 1.1 | .04 |
| 12E | 2 S | 148 | 56 | 200 | 1.6 | .11 |
| | 4 S | 72 | 38 | 115 | 1.8 | .11 |
| | 6 S | 38 | 36 | 75 | 1.3 | .10 |
| | 8 S | 72 | 80 | 110 | 1.5 | .11 |
| | 10 S | 100 | 38 | 130 | 1.8 | .08 |
| 12E | 12 S | 58 | 94 | 100 | 2.0 | .10 |

Mr. Michael J. Fitzgerald,
Lab 928G

| Sample Marked: | Copper ppm | Lead ppm | Zinc ppm | Silver ppm | Gold ppm |
|---|---|---|---|---|---|
| 26N 2+50 | 295 | 42 | 190 | 1.6 | .08 |
| 28E 4 S | 30 | 30 | 55 | 1.0 | .30 |
| 6 S | 21 | 28 | 40 | 0.9 | .14 |
| 28E 8 S | 29 | 36 | 68 | 1.3 | .13 |
| 40E 4 S | 61 | 144 | 78 | 1.6 | .12 |
| 6 S | 18 | 34 | 73 | 1.6 | .11 |
| 8 S | 62 | 38 | 163 | 1.8 | I.S. * |
| 10 S | 75 | 30 | 93 | 1.5 | .10 |
| 40E 12 S | 18 | 18 | 60 | 1.0 | .16 |
| Rock Geochem | | | | | |
| RC J | 130 | 365 | 930 | 2.9 | .07 |
| M-N 270 | 68 | 30 | 28 | 2.4 | .19 |
| 0+150 | 7 | 10 | 6 | 0.2 | .07 |
| U | 12 | 34 | 15 | 1.4 | .06 |
| W-X | 33 | 22 | 55 | 1.0 | .07 |
| 30W - 1S | 80 | 30 | 83 | 1.0 | .07 |
| 20E -4N | 18 | 38 | 215 | 2.0 | .08 |
| 32E -BL | 22 | 12 | 30 | 1.3 | .07 |
| 36E -BL | 12 | 22 | 65 | 1.4 | .09 |
| RC 12E -4N | 10 | 14 | 40 | 1.5 | .09 |

* Insufficient sample

Yours truly,
CREST LABORATORIES (B.C.) LTD.,

F.C. Burgess

F.C. Burgess
Chief Assayer

PHONE 688-8586

# CREST LABORATORIES (B.C.) LTD.

B.C. REGISTERED ASSAYERS
GEOCHEMISTS

1068 HOMER STREET,
VANCOUVER 3, B.C.

October 6, 1972

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

Lab 936G — 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 ppm | Zinc ppm |
|---|---|---|---|---|
| 4 E | 2 N | 110 | 88 | 145 |
| | 4 N | 50 | 68 | 83 |
| | 2 S | 44 | 68 | 75 |
| | 4 S | 54 | 52 | 88 |
| | 6 S | 89 | 80 | 135 |
| | 8 S | 132 | 74 | 230 |
| | 10 S | 105 | 88 | 195 |
| | 12 S | 70 | 58 | 83 |
| 4 E | 13 S | 68 | 53 | 80 |
| 20E | 2 N | 32 | 64 | 68 |
| | 4 N | 60 | 66 | 95 |
| | 2 S | 130 | 90 | 100 |
| | 4 S | 30 | 50 | 50 |
| | 6 S | 28 | 56 | 65 |
| | 8 S | 44 | 52 | 83 |
| 20E | 10 S | 33 | 56 | 55 |
| 36E | 4 S | 25 | 54 | 70 |
| | 6 S | 66 | 165 | 125 |
| | 8 S | 44 | 84 | 83 |
| 36E | 10 S | 84 | 88 | 220 |
| 44E | 2 S | 30 | 62 | 80 |
| | 4 S | 54 | 60 | 110 |
| | 6 S | 30 | 58 | 75 |
| | 8 S | 43 | 56 | 90 |
| 44E | 10 S | 54 | 58 | 80 |
| 46E | 2 N | 24 | 54 | 58 |
| 48E | 4 N | 42 | 64 | 70 |
| 12W | 2+20N | 520 | 98 | 180 |
| | 2 S | 170 | 70 | 125 |
| | 4 S | 160 | 59 | 115 |
| | 6 S | no sample | | |
| | 8 S | 88 | 56 | 70 |
| | 10 S | 51 | 50 | 85 |
| | 12 S | 160 | 105 | 165 |
| | 14 S | 75 | 60 | 100 |
| 12W | 16 S | 78 | 64 | 100 |
| Rocks | | | | |
| "O" | | 14 | 42 | 48 |
| P | | 30 | 70 | 35 |
| Q | | 78 | 40 | 38 |
| R | | 30 | 72 | 93 |
| S | | 53 | 64 | 140 |
| Z | | 18 | 38 | 48 |
| AA | | 13 | 48 | 100 |
| BB | | 10 | 30 | 60 |
| GG | | 120 | 40 | 155 |
| JJ | | 29 | 52 | 63 |
| 12E | 2 S | 22 | 155 | 340 |
| | 10 S | 22 | 30 | 35 |
| 24E | 4 S | 12 | 40 | 80 |
| 26E | 4 S | 10 | 57 | 90 |
| 30E | 6 S | 23 | 44 | 85 |
| 42E | 4 S | 42 | 44 | 180 |
| 4W | 4 S | 115 | 95 | 195 |

CREST LABORATORIES (B.C.) LTD

F.C. Burgess

F.C. Burgess, Chief Assayer

TRANS-PROVINCIAL

[illegible] PRINCE, BRITISH COLUMBIA

CABRE EXPLORATION
12467 KILN ANNOCK
NORTH VANCOUVER BC

| REFERENCE | DESCRIPTION | DATE | AMOUNT | TOTAL |
|---|---|---|---|---|
| 3 | SEP 72 5.597 | 28.80 | | |
| 5 | SEP 72 5.394 | 48.00 | Swippaker 126.80 | |
| 5 | SEP 72 47.108 | 90.00 | | |
| 5 | SEP 72 47.109 | 96.00 | | |
| 3 | SEP 72 47.163 | 14.00 | Grizzly 14.00 | 282.80 |

INTEREST OF 1% PER MONTH CHARGED ON OVERDUE ACCOUNTS

# VANCOUVER ISLAND HELICOPTERS LTD.

BOX 2088 — TELEPHONE 656-3987 — SIDNEY, B.C.

S9

DATE SEPTEMBER 21, 1972

*In Account With*

COBRE EXPLORATION LIMITED

2467 KILMARNOCK CRESCENT

NORTH VANCOUVER, B.C.

REFERENCE INVOICES 510 & 518

FLYING SERVICE FOR MONTH OF SEPTEMBER 8 & 12 19 72
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. | $ |
| _____ HOURS | @ $_____ PER HR. | |
| 4:10 HOURS V.I.H. FUEL | @ $ 155.00 PER HR. | |
| MINIMUM CHARGES (IF APPLICABLE) | | |
| CREW EXPENSES | SNIPpaker | |
| ADDITIONAL CHARGES | | |
| Paid 9/28/72 Cobre #71 | | |
| **TOTAL CHARGES** | | $ 645.80 |

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.

# STATEMENT

SEPT. 13 1972

Mr M. FITZGERLD

In a/c With DURACK CONTRACTING

BOX 2908 SMITHERS, BC

TERMS PAYMENT UPON RECIEPT OF STATEMENT

| | | |
|---|---|---|
| CONTRACK SERVICES | | 177 00 |
| TOTAL OWING | | 177 00 |
| THANK YOU | | |
| M Durack | | |

PROVINCE OF BRITISH COLUMBIA

# MAP PRODUCTION DIVISION

SURVEYS AND MAPPING BRANCH
B.C. LANDS SERVICE
VICTORIA, BRITISH COLUMBIA

| DATE | YOUR ORDER NO | | OUR REQUISITION NO |
|---|---|---|---|
| July 27 1972 | | | L. 37885 |
| LETTER INWARDS NO. 3693740 | MAIL | PHONE | INVOICE NUMBER Y 1730 |

TO . Can Am Exploration Inc.
2467 Kilmarnock Crescent.
. NORTH VANCOUVER. B. C.

. Mr. M.J.Fitzgerald.

| MATERIAL SUPPLIED | AMOUNT |
|---|---|
| BC. 5157 216,237 2 @ $18 | 36. 00 |
| FILM POSITIVES. | |
| 27" x 27" | |
| SS TAX | 1. 80 |
| TOTAL | 37. 80 |
| LESS CASH RECEIVED WITH ORDER | 37. 80 |
| SIGNED BY | |
| BALANCE DUE | — |
| BALANCE OVERPAID | — |

CONSIGNEE'S COPY

FORWARD VIA: AIR SHIPMENTS ONLY — EXPRESS ☐ FREIGHT ☐

EXTRA INSURANCE: YES ☐ NO ☐ VALUE

DESCRIPTION | WEIGHT

PREPAID ☐ COLLECT ☐ CONNECTING CARRIER

TOTAL | CONNECTING CARRIER CHARGES | CUSTOMS INSURANCE | AIR CHARGES | DELIVERY CHARGE

B.C. Ltd.

In Account With

PHONE 688-8568

# CREST LABORATORIES (B.C.) LTD.

B.C. REGISTERED ASSAYERS
INDUSTRIAL and RESEARCH CHEMISTS

1088 HOMER STREET
VANCOUVER 3, B.C.

Mr. Michael J. Fitzgerald,
2467 Kilmarnock Crescent,
North Vancouver, B.C.

DATE September 26, 1972
LAB. No. 9286
ORDER No.

SWIPPACKER

For Services Rendered:

| | |
|---|---|
| 84 geochemical determinations - 4 elements @ 2.30 | 193.20 |
| 83 geochemical determinations for gold @ 2.00 | 166.00 |
| 74 soil sample preparations @ 0.20 | 14.80 |
| 10 rock sample preparations @ 0.50 | 5.00 |
| | $379.00 |

SWIPPACKER pd 10/20/72 Cobre 482

In Account With

PHONE 688-8568

# CREST LABORATORIES (B.C.) LTD.

B.C. REGISTERED ASSAYERS
INDUSTRIAL and RESEARCH CHEMISTS

1088 HOMER STREET
VANCOUVER 3, B.C.

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

DATE October 6, 1972
LAB. No. 9360
ORDER No.

For Services Rendered:

| | |
|---|---|
| 52 geochemical determinations - 3/7 elements @ 1.90 | 98.80 |
| 35 soil sample preparations @ 0.20 | 7.00 |
| 17 rock sample preparations @ 0.50 | 8.50 |
| | $114.30 |

NOVEMBER 1 1977

COBRE EXPLORATION LTD,
2467 KILMARNOCK CRES
NORTH VANCOUVER, B.C,
ATTEN:
M. J. FITZGERALD

VERSATILE DRAFTING LTD.
950 McDermot Rd.
R.R. 2
Abbotsford, B.C.

INVOICE FOR _____

| HRS | JOB NO | DESCRIPTION | RATE | |
|---|---|---|---|---|
| 26 | VER 517 | PINS CLAIM GROUP | 5 00 | 130 |
| | | | | |
| | | | | |
| | | Total | | 130 |
| | | | | |
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| | | | | |

INVOICE PREPARED BY W.P. Wadman

TERMS: 30 DAYS NET

INVOICE NO VER - 586

NOVEMBER 10 19 72

COBRE EXPLORATION LTD.
2467 KILMARNOCK CRES,
NORTH VANCOUVER, B.C.

ATTEN:
M.J. FITZGERALD

VERSATILE DRAFTING LTD.
950 McDermot Rd.
R.R. 2
Abbotsford, B.C.

INVOICE FOR INVOICE FOR MONTH OF NOVEMBER, 1972

| HRS | JOB NO | DESCRIPTION | RATE | | |
|---|---|---|---|---|---|
| 4 1/2 | VER 517 | PILLS CLAIM GROUP | 5 00 | | 22 50 |
| | | Total | | | 22 50 |

INVOICE PREPARED BY W.F. Woodman

TERMS: 30 DAYS NET

INVOICE NO VER -589

31st. Oct, 1972.

KOBRE EXPLORATION LTD.
2967 KILMARNOCK CRESC
NORTH VANCOUVER

IN ACCOUNT WITH:

VERSATILE REPRODUCTIONS & SUPPLY CO. LTD.
33771 CYPRUS ST., ABBOTSFORD, B.C.
PHONE: 853-0914

PINS CHAIMS

| Nº TRACINGS | Nº REQ. | TYPE PRINTS | SIZE | SQ. FT. | RATE | | |
|---|---|---|---|---|---|---|---|
| 5 | 1 EA | BLACKLINE | 3.5x3.0 | 5.3D | | | 5.30 |
| | | | | | | | |
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| | | | | | | | |
| | | | | | | | |
| | | | FEDERAL | SALES TAX | 12% | | 0.63 |
| | | | | TOTAL | | | 5.93 |
| | | | PROVINCIAL | SALES TAX | 5% | | 0.30 |
| | | | | TOTAL | | | 6.23 |

ORDERED BY: _____

INVOICE Nº P1347

Oct. 21, 1972

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

IN ACCOUNT WITH:

VERSATILE REPRODUCTIONS & SUPPLY CO. LTD.
33771 CYPRUS ST., ABBOTSFORD, B.C.
PHONE: 853-0914

Pins Claim Group

| Nº TRACINGS | Nº REQ. | TYPE PRINTS | SIZE | SQ. FT. | RATE | | |
|---|---|---|---|---|---|---|---|
| 1 | 4 | Sepias | 3' x 3.5' | 42 | 0 | 35 | 14 70 |
| | | | | | | | |
| | | | | | | | |
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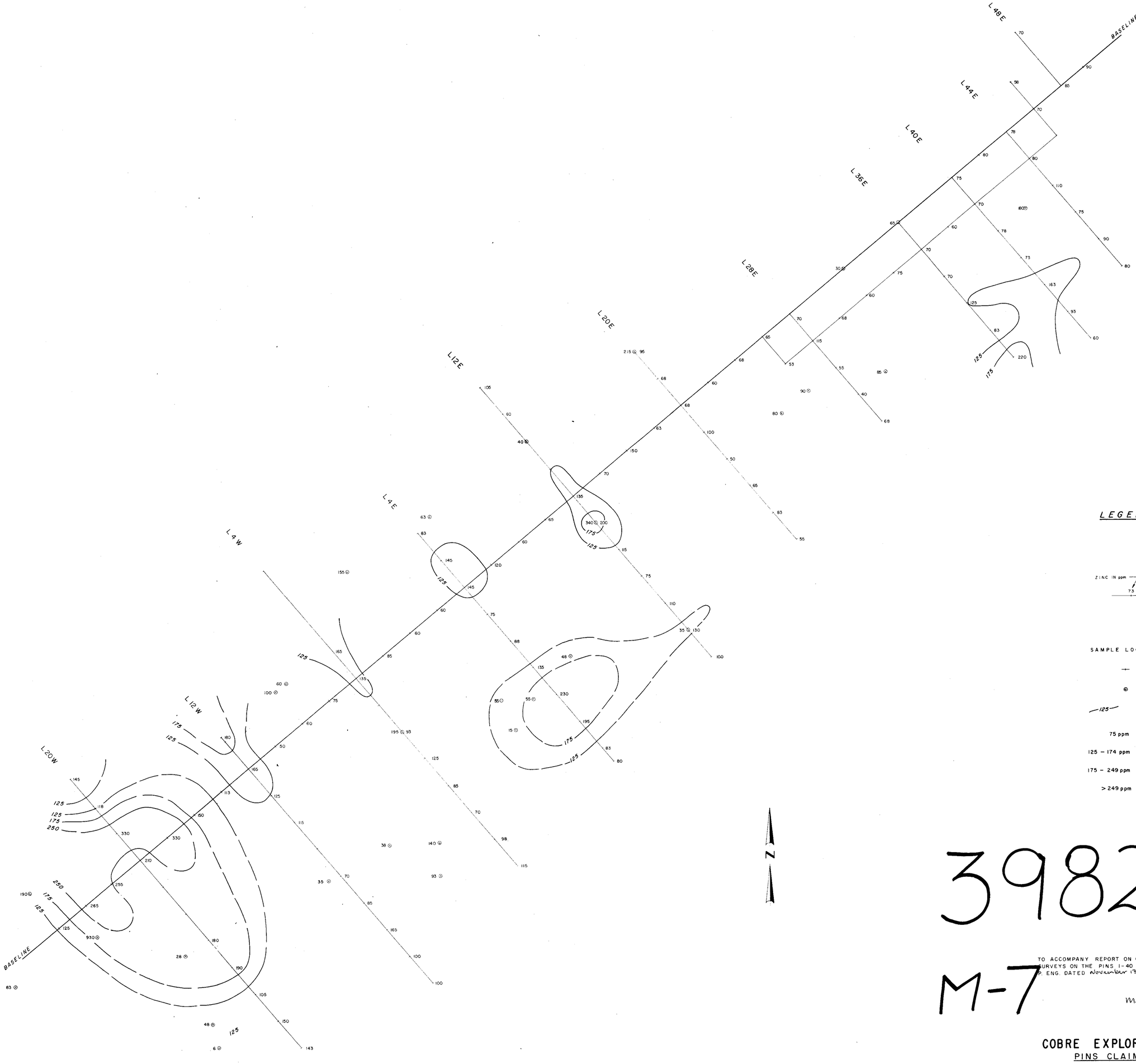
| | | | | | | | |
| | | | FEDERAL | SALES TAX | 12% | | 1 76 |
| | | | | TOTAL | | | 16 46 |
| | | | PROVINCIAL | SALES TAX | 5% | | 0 82 |
| | | | | TOTAL | | | 17 28 |

ORDERED BY: _____

INVOICE Nº P1300




## LEGEND

ZINC IN ppm
7.3

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 |

N

3982

M-7

TO ACCOMPANY REPORT ON GEOLOGICAL AND GEOCHEMICAL SURVEYS ON THE PINS 1-40 CLAIMS BY M.J.FITZGERALD, P. ENG. DATED November 13, 1972

M.J. Fitzgerald

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M.J. FITZGERALD

# COBRE EXPLORATION LTD.

PINS CLAIM GROUP

SNIPPAKER CREEK AREA

## GEOCHEMICAL SURVEY

ZINC IN ppm

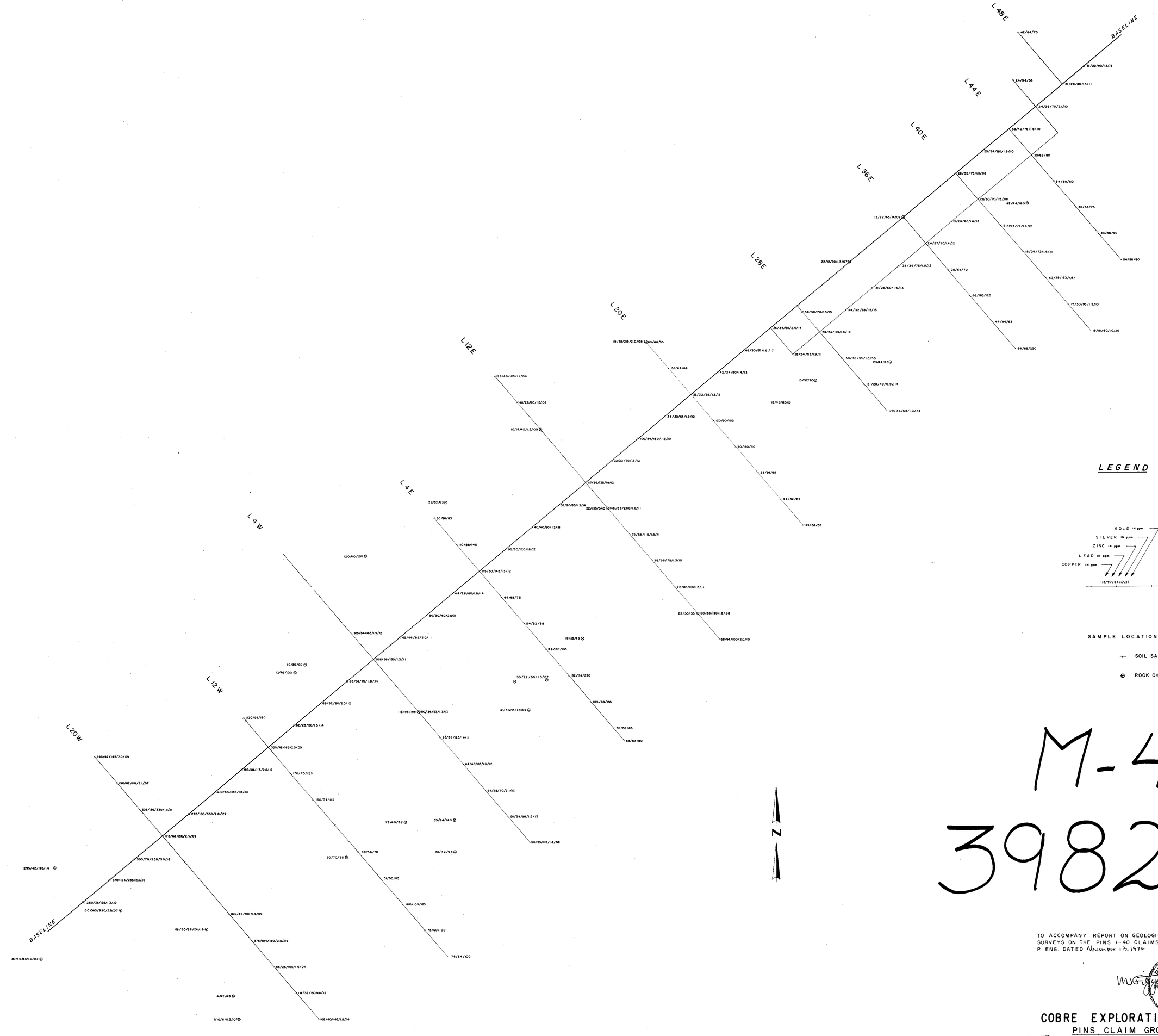
LIARD M. D., BRITISH COLUMBIA

200 100 0 200 400
SCALE IN FEET

OCTOBER, 1972



PLATE V




## LEGEND

GOLD IN ppm
SILVER IN ppm
ZINC IN ppm
LEAD IN ppm
COPPER IN ppm

105/97/84/1.7/.17

SAMPLE LOCATION

+ SOIL SAMPLE

⊖ ROCK CHIP

M-4

3982

TO ACCOMPANY REPORT ON GEOLOGICAL AND GEOCHEMICAL SURVEYS ON THE PINS 1-40 CLAIMS BY M.J.FITZGERALD, P. ENG. DATED November 13, 1972

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. J. FITZGERALD

# COBRE EXPLORATION LTD.

## PINS CLAIM GROUP

SNIPPAKER CREEK AREA

## GEOCHEMICAL SURVEY

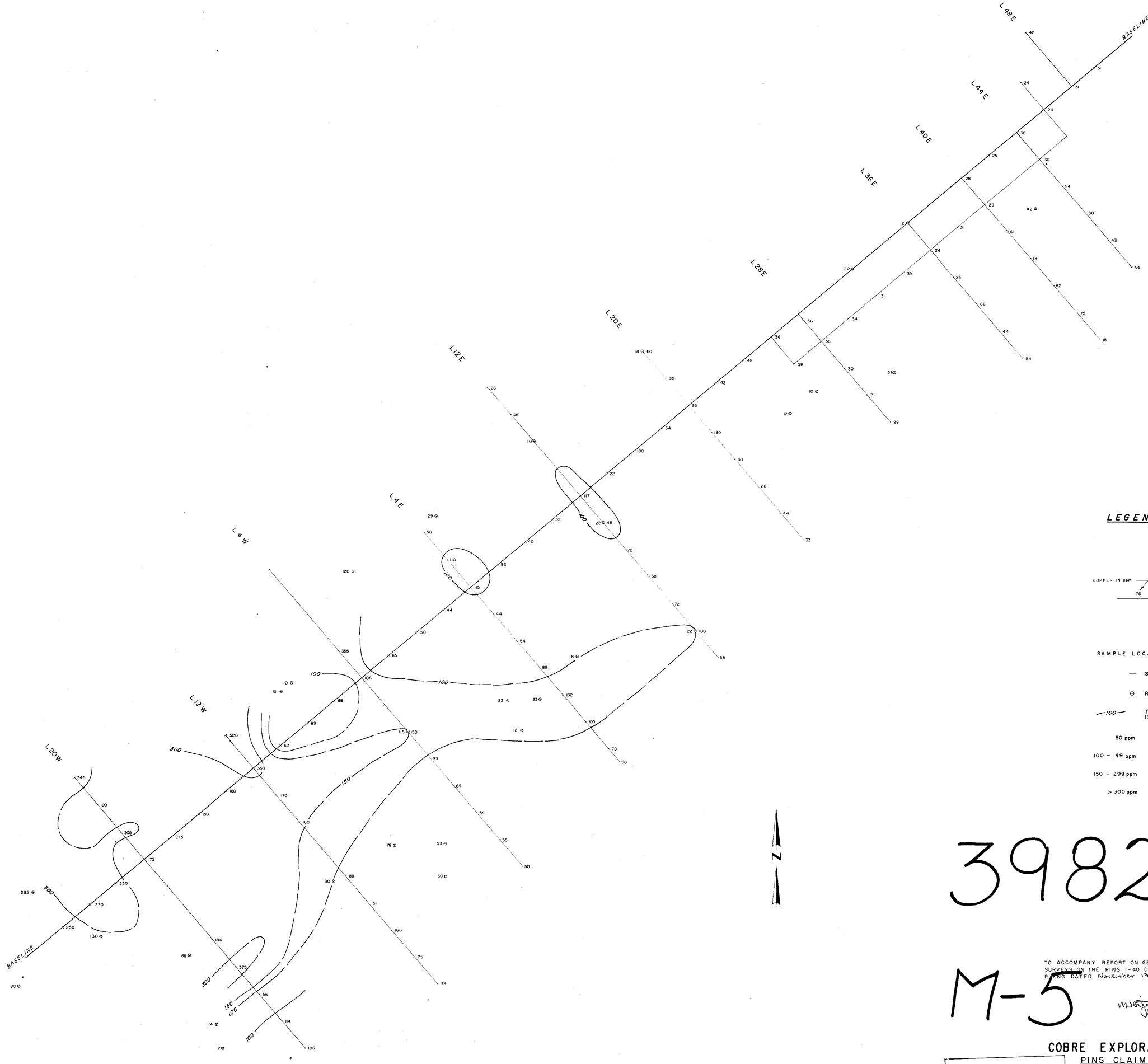
## COMPOSITE METAL

LIARD M.D., BRITISH COLUMBIA

200 100 0 200 400
SCALE IN FEET

OCTOBER, 1972

PLATE II




## LEGEND

COPPER IN ppm
76

SAMPLE LOCATION

- SOIL SAMPLE
- ROCK CHIP
- —100— TENTATIVE CONTOURS (SOIL SAMPLES ONLY)

| | |
|---|---|
| 50 ppm | BACKGROUND |
| 100 – 149 ppm | THRESHOLD ANOMALOUS |
| 150 – 299 ppm | ANOMALOUS |
| > 300 ppm | STRONGLY ANOMALOUS |

3982

M-5

TO ACCOMPANY REPORT ON GEOLOGICAL AND GEOCHEMICAL SURVEYS ON THE PINS 1-40 CLAIMS BY M.J.FITZGERALD, P.ENG DATED November 13, 1972

M.J. Fitzgerald

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

# COBRE EXPLORATION LTD.

PINS CLAIM GROUP

SNIPPAKER CREEK AREA

## GEOCHEMICAL SURVEY

COPPER IN ppm

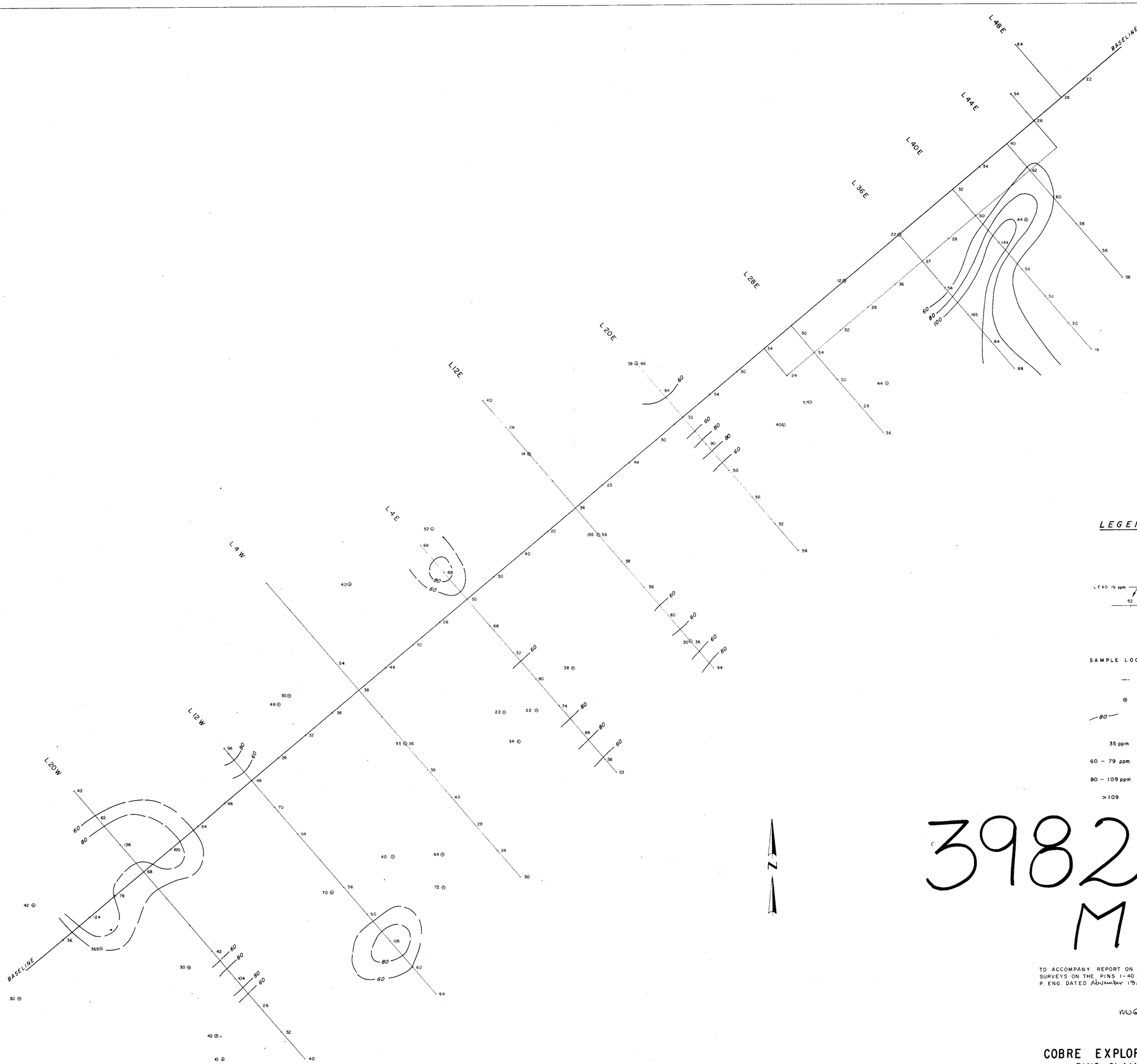
LIARD M.D., BRITISH COLUMBIA



200 100 0 200 400
SCALE IN FEET

OCTOBER, 1972

PLATE III




## LEGEND

LEAD IN ppm
52

SAMPLE LOCATION

—·— SOIL SAMPLE

⊙ ROCK CHIP

—80— TENTATIVE CONTOURS (SOIL SAMPLES ONLY)

| | |
|---|---|
| 35 ppm | BACKGROUND |
| 60 – 79 ppm | THRESHOLD ANOMALOUS |
| 80 – 109 ppm | ANOMALOUS |
| >109 | STRONGLY ANOMALOUS |

N

3982
M-6

TO ACCOMPANY REPORT ON GEOLOGICAL AND GEOCHEMICAL SURVEYS ON THE PINS 1-40 CLAIMS BY M.J. FITZGERALD, P. ENG. DATED November 13, 1972

M.J. FITZGERALD

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M.J. FITZGERALD

# 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

OCTOBER, 1972



PLATE IV


LEGEND

Overburden (Soil, Drift, etc.)

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

TO ACCOMPANY REPORT ON GEOLOGICAL AND GEOCHEMICAL SURVEYS ON THE PINS 1-40 CLAIMS BY M.J. FITZGERALD, P. ENG. DATED November 15, 1972.

M.J. FITZGERALD

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# COBRE EXPLORATION LTD.

PINS CLAIM GROUP

SNIPPAKER CREEK AREA

OUTCROP GEOLOGY

LIARD M.D., BRITISH COLUMBIA

200 100 0 200 400

SCALE IN FEET

OCTOBER, 1972

PLATE I



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