

REPORT ON THE GEOLOGICAL
GEOCHEMICAL AND GEOPHYSICAL SURVEYS

of the
RIDGE CLAIMS

by

G.D. Ulrich, P. Eng.



Claims: Ridge #1 - 40 Record (Tag) No. Y79918 to Y79957

Location: 5 miles due south of the Town of Faro,
Yukon Territory, Whitehorse Mining District
Map Sheet N.T.S. 105 k/3
62° 10'00" North Latitude, 133° 23'00" West Longitude

Dates: July 17, 1974 to January 3, 1975.



January 3, 1975.

Vancouver, B.C.

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

\$ 4082.00

[Handwritten Signature]

Resident Geologist or
Resident Mining Engineer

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

[Handwritten Signature]

B. R. BAXTER
Supervising Mining Recorder

Commissioner of Yukon Territory



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INTRODUCTION

The following report is a description of the work carried out by Geophysical Engineering Limited on behalf of Teck Mining Group Limited during the 1974 field season. The work was completed on a 40 claim group in the Faro area of the Whitehorse Mining District. The claims are owned jointly by Silver Standard Mines Limited and Teck Mining Group Limited.

The exploration program consisted of laying out a flagged line grid and conducting geological, geochemical and high-frequency electromagnetic (VLF-EM) surveys.

The program was directed by R.E. Hindson of Geophysical Engineering Limited. The writer carried out the geological mapping and supervised the other surveys. The geophysical and geochemical surveys were completed by G. Lovang, prospector and K. Davies, geophysical technician, both of Geophysical Engineering and Surveys Ltd. B. Hainsworth, a geology student, assisted in the mapping program.

LOCATION AND ACCESS

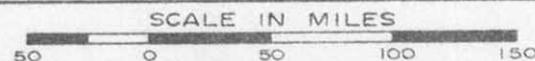
The claims are located in the southeastern Yukon at approximately $62^{\circ} 10' 00''$ N, $133^{\circ} 23' 00''$ W, some 5 miles due south of the town of Faro. They lie to the southwest of the road to Ross River, on the southern bank of the Pelly River. Elevations on the property range from 2,800 to 3,700 feet above M.S.L.

Access to the property is by the Ross River to Carmax highway, by local gravel pit roads and thence by foot. The claim area is between 800 feet and 8,000 feet from the nearest road.

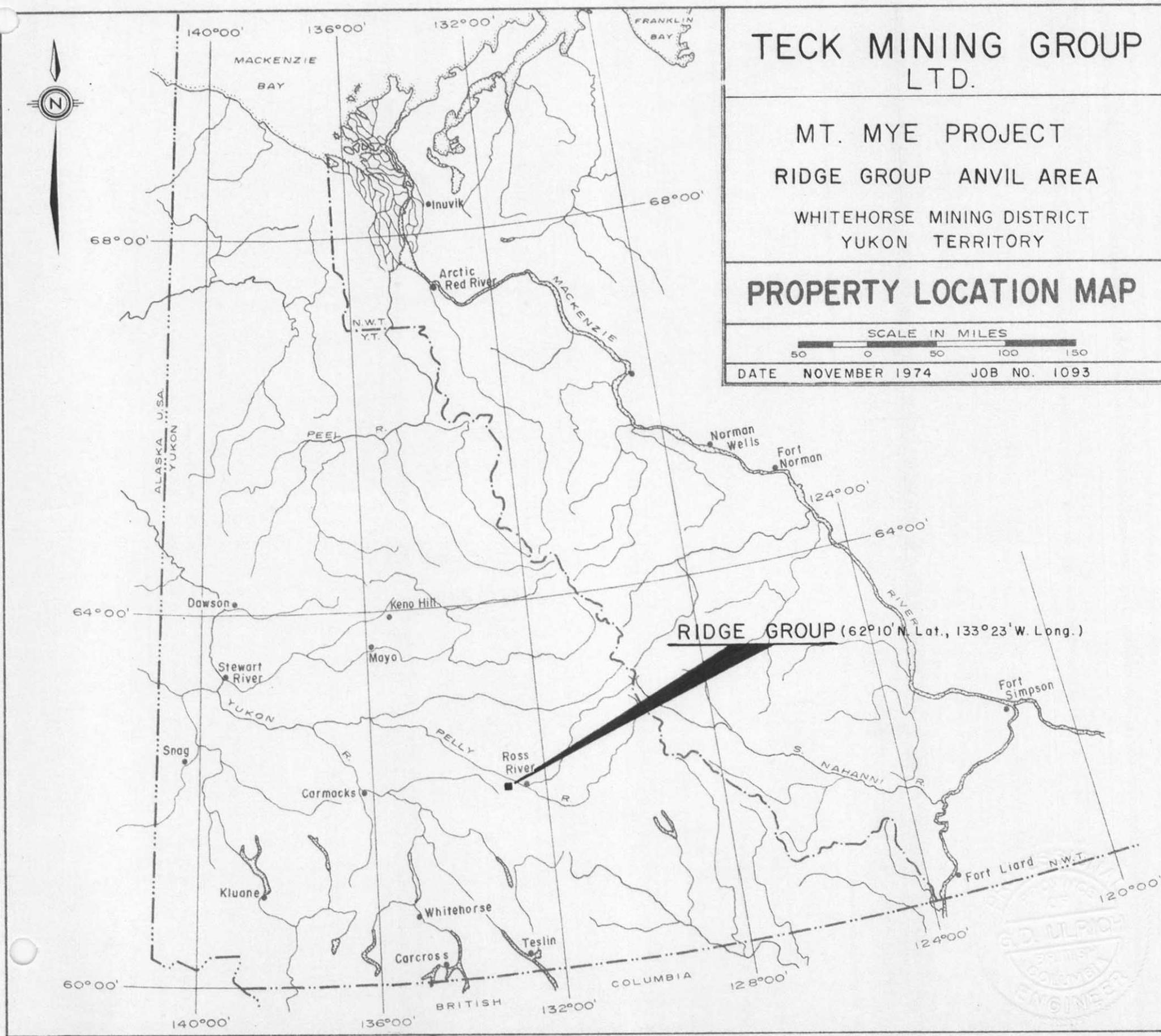
TECK MINING GROUP LTD.

MT. MYE PROJECT
 RIDGE GROUP ANVIL AREA
 WHITEHORSE MINING DISTRICT
 YUKON TERRITORY

PROPERTY LOCATION MAP



DATE NOVEMBER 1974 JOB NO. 1093



CLAIMS

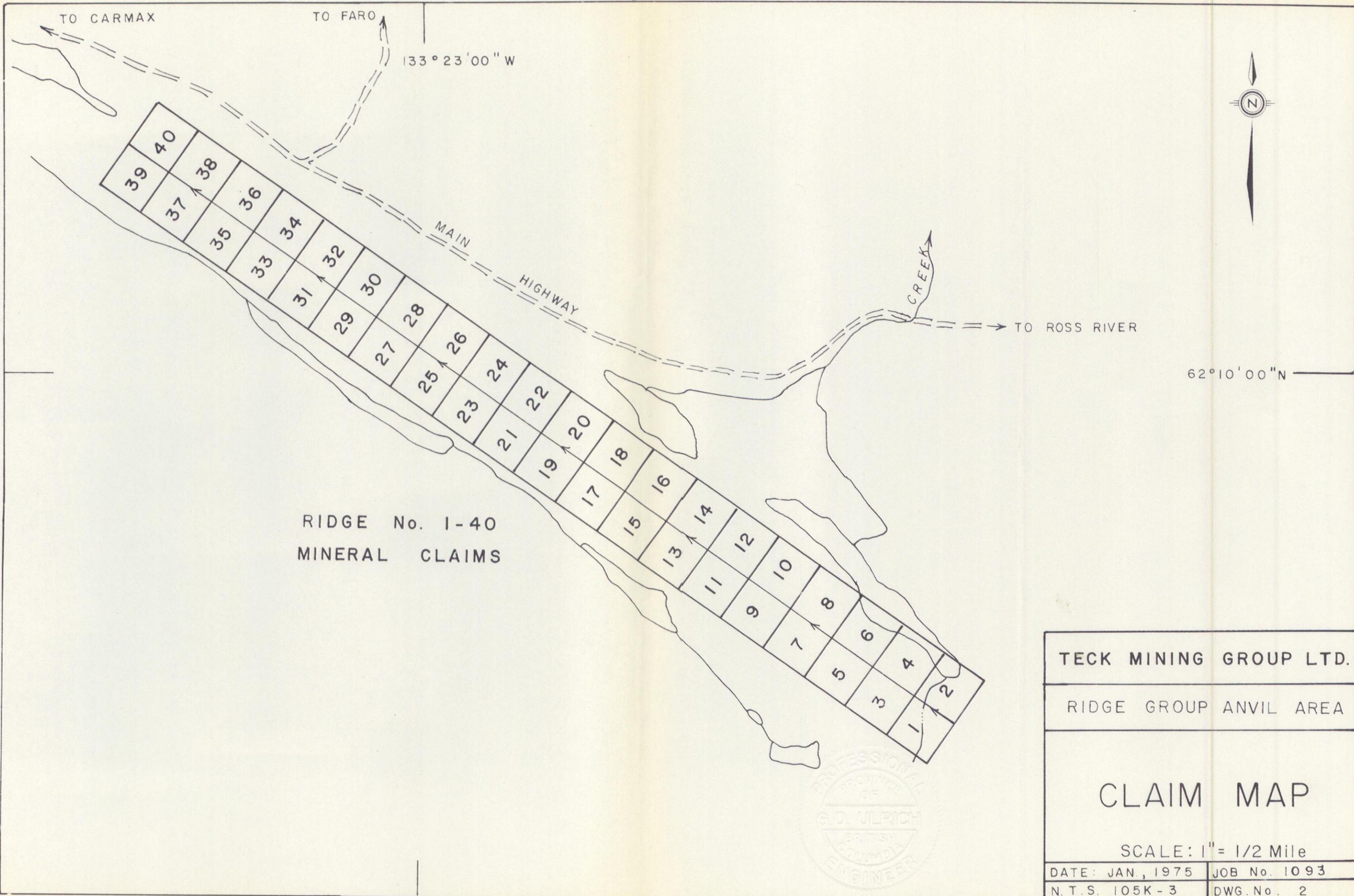
The 40 claims on which work is being applied are plotted on Figure 2 at a scale of 1" = ½ mile. A complete list of claims is tabulated below:

<u>Claim</u>	<u>Record (Claim Tag) No.</u>	<u>Expiry Date</u>	<u>Title</u>
Ridge #1 - 40 inclusive	Y79918 to Y79957 inclusive	July 24, 1974	J.D. Munroe in trust for Silver Standard Mines Limited and Teck Mining Group Limited

GEOLOGYGeneral

The property lies on the southwest flank of the Tintina Trench on a ridge which rises some 1500 feet above the Pelly River. The ridge is a prominent structure with steep cliffs on each side. It is part of a series of upthrown blocks which parallel the Trench. A sequence of early Paleozoic and/or Precambrian rocks, and an intrusive Cretaceous granodiorite, underlie the property. The metamorphosed sediments are comprised of phyllite, calcareous schist, limestone and calcareous gneiss. Plastic deformation, and low grade metamorphism are evident. Tempelman-Kluit (1) suggest that this metasedimentary sequence is the same formation that contains the Anvil and Vagorda mineral deposits on the other side of the Tintina Trench. He also suggests that the intrusive on the property is related to the Anvil batholith.

A geologic map and section are plotted in Figure 3 at a scale of 1" = 1,000'.



RIDGE No. 1-40
MINERAL CLAIMS

TECK MINING GROUP LTD.

RIDGE GROUP ANVIL AREA

CLAIM MAP

SCALE: 1" = 1/2 Mile

DATE: JAN., 1975	JOB No. 1093
N.T.S. 105K-3	DWG. No. 2

Lithology

Three rock units were distinguished in the mapping program. Brief descriptions of these units that were used in the survey are given below:

Precambrian-Paleozoic

Hadrynian (?), Cambrian, and Ordovician (?)

Unit 1: Limestone, calcareous gneiss.

This unit is composed of fine-grained, light gray, pink to white limestone and calcareous gneiss. It outcrops on a steep cliff face on the northeast side of the property. A fairly sharp contact between the limestone and the overlying phyllitic rocks occurs very near the top of the cliff.

The main mineralogy of the limestone and calcareous gneiss is calcite, with various amounts of iron rich impurities. The layers in the gneissic areas are 1 to 5 mm thick and are typified by distinct colours: gray, white, and brown. These colour variations reflect the concentration of impurities along compositional layers.

Unit 2: Phyllite and calcareous schist

Underlying about 75% of the property is a dark gray to black, fine-grained lustrous phyllite interbedded with a very fine-grained, black calcareous schist. These rocks are all extremely well foliated. The calcareous rocks are highly contorted while the more competent phyllites are more regularly oriented.

The main mineralogy of the phyllite is muscovite and quartz, and that of the calcareous schist is calcite, with various amounts of impurities. In some locations considerable amounts of graphite and pyrite occur in the calcareous schist.

Mesozoic

Cretaceous

Unit 3: Granodiorite

This unit is a white, medium-grained, foliated granodiorite. It underlies about 10% of the property, and is well exposed in outcrops near the western corner of the property. The actual intrusive contact with the phyllite and carbonate rocks was not exposed. No obvious effects of the intrusion such as contact metamorphism or hydrothermal alteration are evident in nearby outcrops of metasediments.

The granodiorite is composed of approximately 10% quartz, 55% white feldspar and 25% biotite. A hypidiomorphic granular texture is common.

Metamorphism and Structure

Tempelman-Kluit (1) suggests that the schist and phyllite terrain corresponding to his units "2" and "3" have been regionally metamorphosed in Cambro-Ordovician time to metamorphic grades ranging from almandine amphibolite facies to greenschist facies. On the property the metamorphic grade is probably as low as greenschist because of the general lack of high grade metamorphic minerals in the carbonates, and the predominance of phyllite over schist in the non-calcareous rocks.

The deformational characteristics of the rocks from this area reflect a good deal of plastic movement, especially in the dark calcareous schists. Evidence of a regional direction of compositional layering on the property is indicated in Figure 3. No evidence for a multi-stage folding process was found.

The property is situated on a ridge which is essentially a horst in a whole series of horsts and grabens parallel to the Tintina Trench. Faults running at approximately northwest trend up the valleys on either side of the ridge, including the Glenlyon River Fault (1).

Economic Geology

The property is underlain by a sequence of rocks which are classified with the formations which contain and surround the economic mineralization in the Anvil Range (1). The sedimentary rock types are basically the same, although metamorphism is at a lower grade on the Ridge claims. One possibly important spatial relation is missing on this property. All of the mineral deposits in the Anvil Range have neighbouring volcanic rocks. A general lack of volcanics is evidenced on the southwest side of the Tintina Trench. However, the exact significance of this relationship is not known.

The only sulphide mineralization that was located on the property is in the form of small amounts of pyrite in the phyllite unit.

GEOCHEMICAL SURVEY

General

A geochemical soil sample survey was carried out over the entire group of claims. The survey was done on a flagged line grid with samples taken at 200-foot intervals along lines spaced 1,500 feet apart. The crosslines were surveyed by pace and compass, at right angles to a cut and chained baseline run at azimuth 120° . The samples were collected below the thick humus and volcanic ash layers using a heavy mattock. In some

cases the permafrost was too well formed near the surface to obtain a sample, especially on the north facing slope. The samples were taken mostly from the "C" horizon. A total of 208 samples were collected in 3½" x 6" envelopes and marked with the coordinates of the sample location.

The samples were shipped to Acme Analytical Laboratories Ltd. in Ross River, Yukon Territory for analysis. They were all analyzed for zinc, lead and copper. The analytical procedure involved taking a one gram portion of minus 80 mesh material from each sample, and digesting this in nitric acid and perchloric acid for three hours. Zinc, lead and copper values were then obtained by atomic absorption spectroscopy, and recorded in parts per million (ppm). The analyses have an accuracy of $\pm\frac{1}{2}$ ppm.

Figures 4, 5 and 6, drawn at a scale of 1" = 1,000', are plots of the results of the soil survey.

Statistical Analysis

The sample results were divided into 3 populations, 1 for each metal. For each population, a mean and standard deviation were calculated. The results of this analysis are summarized in the following table:-

Population	Population Size (N)	Mean Value (X)	Standard Deviation (S)	Threshold Value (X + 2S)	Anomalous Value (X + 3S)
Zinc	207*	85.7	77.5	240.0	318.0
Lead	207*	24.5	18.5	62.0	80.0
Copper	208	19.3	13.6	46.4	59.9

* Erratically high-values of 440 ppm. Pb and 2400 ppm. Zn from a sample taken at line 15+00W, 8+00N. were excluded from the statistical analysis.

The results are further illustrated with frequency distributions of each population, plotted on Figures 7, 8, and 9.

Results

Most of the samples are below threshold for zinc, lead and copper. The values in the threshold and anomalous ranges are mostly single isolated samples which appear to be erratic highs. In addition, some of the highest metal concentrations are from soil that was sampled adjacent to bedrock which has no signs of economic mineralization.

The geochemical survey did uncover one area of interest at the extreme southeast end of the property. Plotted on Figure 3 with the geology on the three most southeasterly grid lines are the geochemical values from this area which are above threshold or are anomalous for either zinc, lead or copper. The results indicate a series of high values that are situated close to the contact of the granitic intrusive and the metasediments. Unfortunately, most of the area is covered with overburden. This anomalous area appears to be either narrow or erratic, close to the intrusive contact, and high in zinc, lead and copper content. It appears to be a reflection of a metal concentration at the intrusive contact. Because of the lack of width and close proximity to the intrusive, this area is not considered to be a particularly encouraging anomaly in the search for a stratified zinc deposit. However, the geochemical and geological data is not sufficient to describe conclusively the nature and significance of this feature.

FIGURE 7

TECK MINING GROUP
LTD.
RIDGE GROUP - ANVIL AREA

FREQUENCY DISTRIBUTION
of

GEOCHEMICAL ANALYSES

(ZINC)

JOB N^o 1093

NOV. 1974

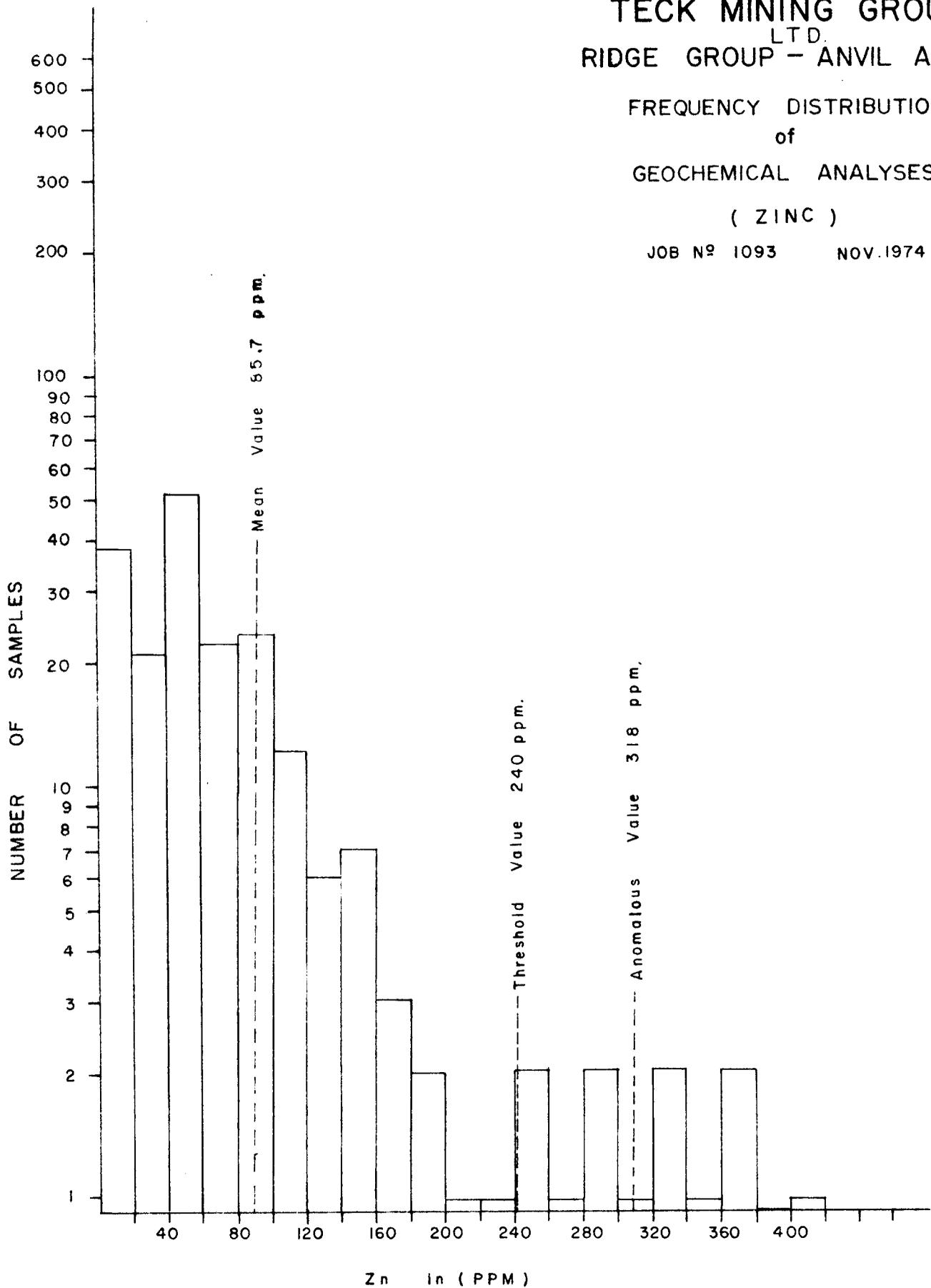


FIGURE 8

TECK MINING GROUP
LTD.
RIDGE GROUP - ANVIL AREA

FREQUENCY DISTRIBUTION
of

GEOCHEMICAL ANALYSES

(LEAD)

JOB N° 1093

NOV 1974

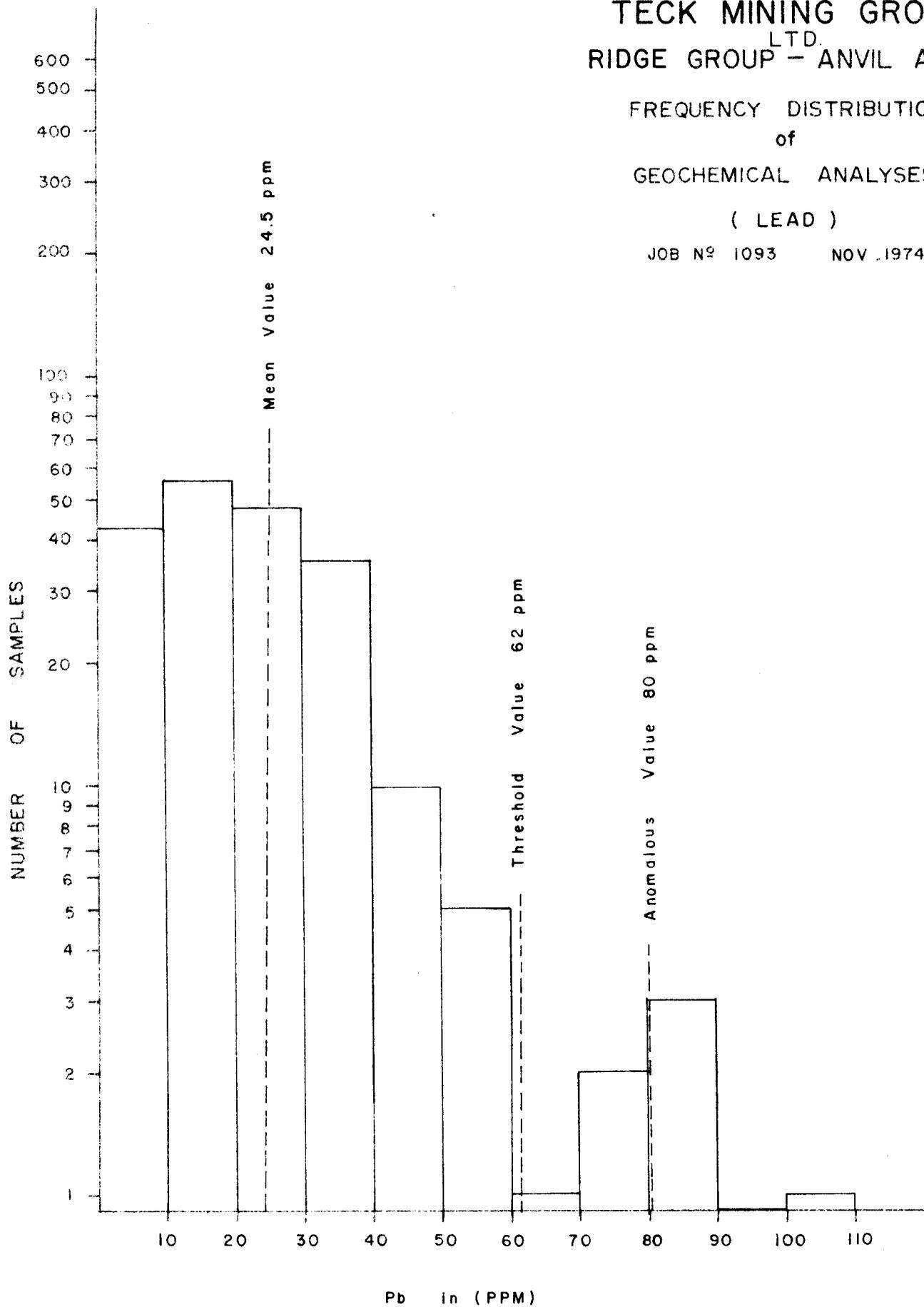


FIGURE 9

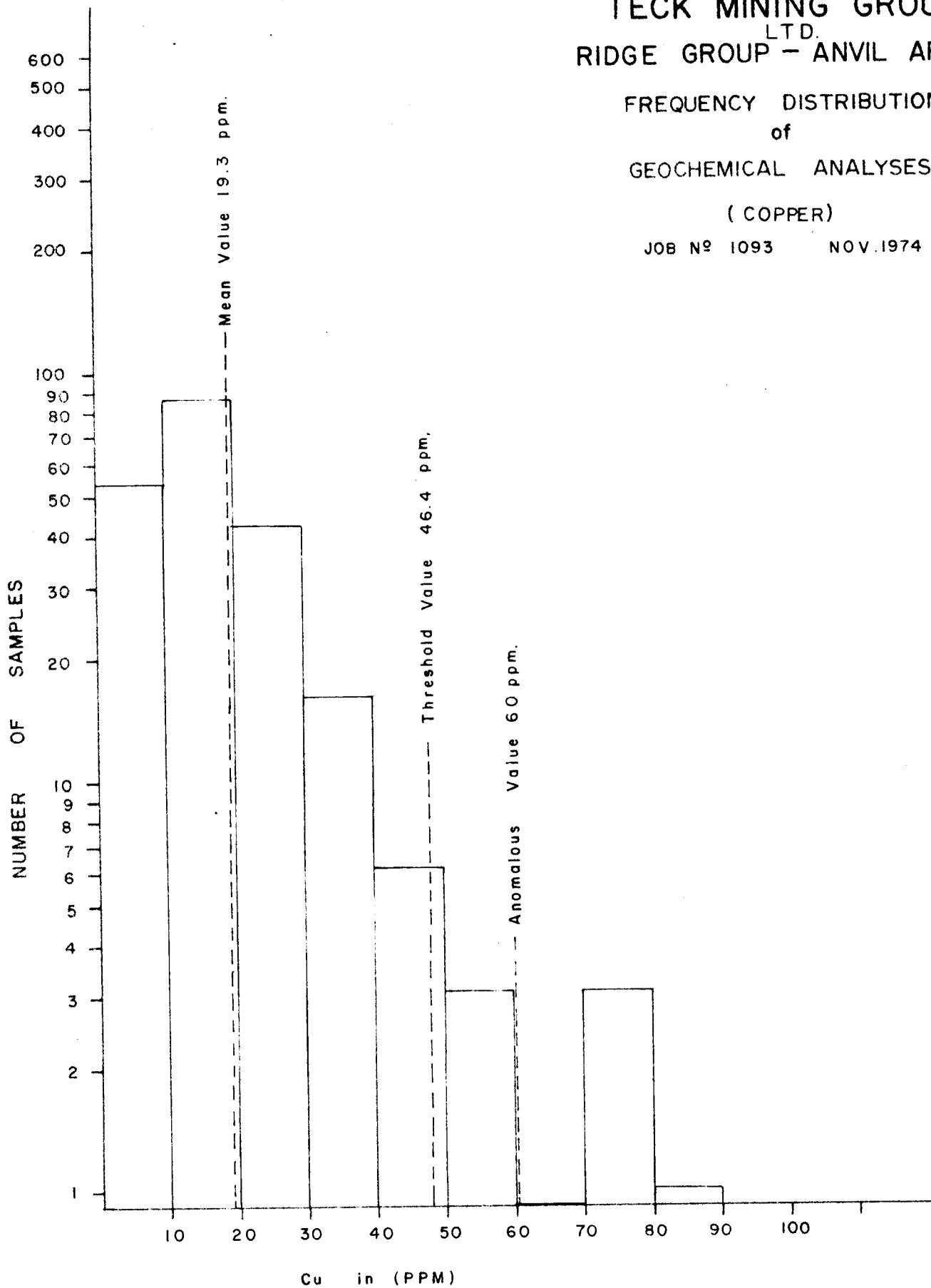
TECK MINING GROUP
LTD.
RIDGE GROUP - ANVIL AREA

FREQUENCY DISTRIBUTION
of
GEOCHEMICAL ANALYSES

(COPPER)

JOB N° 1093

NOV. 1974



VLF-EM SURVEY

General

The purpose of the VLF-EM survey is to pick out any subsurface conductors that might be related to massive sulphides. Graphitic horizons are associated with the local ore deposits and are readily detected by VLF-EM.

The survey of selected portions of the grid was carried out totalling 4.5 line miles. A Crone type of receiver was used to receive broadcasts at frequencies close to 20,000 Hertz from two different transmitters situated at Seattle, Washington and Cutler, Maine. Readings of the dip angle for each transmitter were taken every 100 feet. The results were treated as two separate surveys because the fields produced at Seattle, Washington and Cutler, Maine are close to right angles to one another at the property.

The raw data from these two surveys cannot be contoured, but can only be shown in cross-sections, which are hard to interpret on a gross scale. Fraser's technique of filtering the raw data was adopted (2). First, positive signs were assigned to east and north dip angles of the Seattle and Cutler readings, respectively. Similarly, negative signs were given to west and south dip angles. Then the data was filtered algebraically to give contourable values at 50' intervals (2).

The filtered data for the Seattle, Washington and Cutler, Maine surveys are plotted on Figures 10 and 11, respectively, at a scale of 1" = 500'. Positive values are the only data plotted because the negative values only reflect the flanks of anomalies. Filtered data greater than +10 are considered to be anomalous. Between +5 and +10 the numbers represent weak anomalies which may or may not reflect noise

that was not filtered out.

Results

The results of both surveys indicate very strong anomalies, especially on the northeast facing slope. A reasonable explanation for these results is that since the operator is essentially traversing a geologic section going down to the northeast, he will pick up differences in the conductivity of these beds easily. Various amounts of graphite and pyrite are present in these strata, causing several anomalies going down the section.

Not all the anomalies can be explained as mentioned above. Some are definitely along the dip which slopes down to the southwest. However, from the size and strike of these anomalous trends, they could easily be attributed to topographic features or narrow concentrations of conductive material within a single stratigraphic unit.

Both the Seattle, Washington and Cutler, Maine surveys indicate a large number of strong anomalies. However, after looking at the results in relation to the orientation of the beds, and the type of conductive material present in the rocks, the survey does not necessarily infer the presence of economic mineralization below the surface.

SUMMARY AND CONCLUSIONS

During the 1974 field season geological, geochemical and geophysical surveys were carried out on the Ridge claim group in the Faro Area. The property was geologically mapped at a scale of 1" - 1,000'. A total of 208 soil samples were taken. A VLF-EM survey totalling 4.5 line miles was completed.

The following conclusions are based on the results of the surveys:

1. The property is underlain by two geologic formations. These are an older formation of Cambrian and/or Precambrian metasediments and a later Mesozoic intrusive.
2. Soil geochemistry is hampered by the permafrost in this area. Some results are erratically high. However, some of the anomalous results can be explained in relation to the geologic environment.
3. The VLF-EM survey was of slight value, and hampered somewhat by the rough topography and the many graphitic occurrences in the metasediments.

RECOMMENDATION

No further work is recommended on the property at this time. However, if the owners contemplate further exploration in this area, the geochemically anomalous area at the southeast end of the property near the intrusive contact would be a good place to start.

Respectfully submitted,

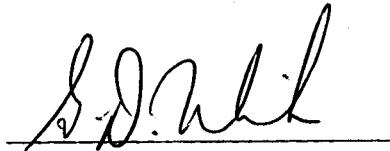


G.D. Ulrich, P. Eng.

CERTIFICATE

I, Gordon Donald Ulrich, do hereby certify that:

1. I am a geologist with residence at 5167 Irmin Street, Burnaby, B.C.
2. I am a graduate of the University of British Columbia (B.A.Sc., 1970, Geological Engineering).
3. I am a professional engineer registered in the province of British Columbia.
4. Since graduating I have been employed with Western Geological Services Limited (1½ years), W. Meyer and Associates Ltd. (1 year), Home Oil Company Ltd. (3 months) and Geophysical Engineering Limited (4 months).
5. Between July 17, 1974 and January 3, 1975 I conducted the geological survey and supervised the geochemical and geophysical surveys on the Ridge Claims on behalf of Geophysical Engineering Limited.

A handwritten signature in black ink, appearing to read 'G.D. Ulrich', is written over a horizontal line.

G.D. Ulrich

January 10, 1975.

PERSONNEL AND DATES

<u>Name and Address</u>	<u>Occupation</u>	<u>Dates</u>	<u># of Days</u>
G.D. Ulrich, 5167 Irmin Street, Burnaby, B.C.	Geologist	July 17, 1974 to January 3, 1975	19
K.W. Davies, 159 Riverside Drive, North Vancouver, B.C.	Geophysical Technician	July 17, 1974 to August 25, 1974	8
G. Lovang, 159 Riverside Drive, North Vancouver, B.C.	Prospector	July 17, 1974 to August 25, 1974	8
B. Hainsworth, The University of B.C., Vancouver, B.C.	Geological Assistant	July 17, 1974 to August 25, 1974	7

COST OF SURVEYS

Field Supervision, Geological, Geochemical and Geophysical Surveys	\$2,765.37
Transportation Truck Rental	320.05
Accommodation in Faro	973.25
Geochemical Analyses	365.03
Maps, Prints, Reports and Drafting	<u>200.00</u>
TOTAL COST OF SURVEYS	<u>\$4,623.70</u>

Note:

The above costs are property related costs only and do not include transportation between Faro and Vancouver.

AFFIDAVIT RE: COST OF SURVEYS

I, Gordon Donald Ulrich, P. Eng., of 5167 Irmin Street in the Municipality of Burnaby in the Province of British Columbia, DO SOLEMNLY DECLARE that the geological and geophysical surveys of 40 located mineral claims held by J.D. Munroe in trust for Silver Standard Mines Limited and Teck Mining Group Limited were conducted during the field season of 1974, are described by this report and the field data was obtained at a total property-related cost of at least \$4,623.70.

AND I make this solemn declaration conscientiously believing it to be true, and knowing it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act".

DECLARED before me at the City)
of Vancouver in the Province)
of British Columbia, this 10th day)
of January, A.D. 1975.)

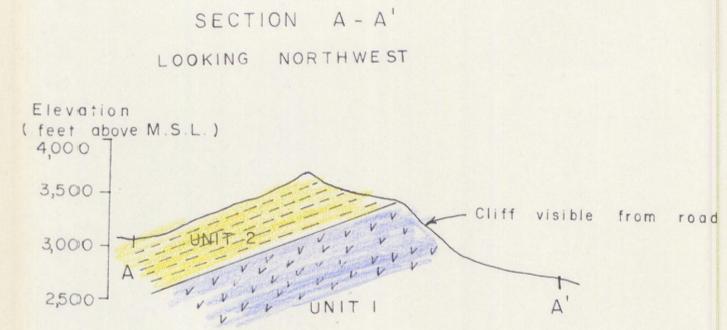

G.D. Ulrich



FRANK JOSEF 
A Commissioner for taking Affidavits
for British Columbia.

REFERENCES

1. Tempelman-Kluit, D.J.: "Geology and Origin of the Faro, Vangorda, and Swim Concordant Zinc-Lead Deposits, Central Yukon Territory"; G.S.C. Bulletin 208, 1972.
2. Fraser, D.C.: "Contouring of VLF-EM Data"; Geophysics, Volume XXXIV, Number 6, December, 1969.



Symbols

- Outcrop
 - Probable contact
 - Possible contact
 - Compositional layering
 - Fault
 - Claim post
 - Grid line showing stations
 - Approximate claim boundary
- 130/40/20 Geochemical analysis in ppm for Zn/Pb/Cu

LEGEND

- MESOZOIC
- Cretaceous
- 3 Granodiorite
- PALEOZOIC - PRECAMBRIAN (?)
- Hadrynian, (?) Cambrian and Ordovician (?)
- 2 Phyllite, Calcareous schist
 - 1 Limestone, Calcareous gneiss

TO ACCOMPANY: "Report on the Geological, Geochemical and Geophysical Surveys of the RIDGE Claims" by G. D. Ulrich, P. Eng., dated Jan. 3, 1975

TECK MINING GROUP LTD.

RIDGE GROUP ANVIL AREA

GEOLOGY MAP

0 1000 2000
SCALE - FEET

DATE: NOVEMBER 1974 JOB NO: 1093
N.T.C. 105K-3 DWG NO: 3

S. D. Ulrich



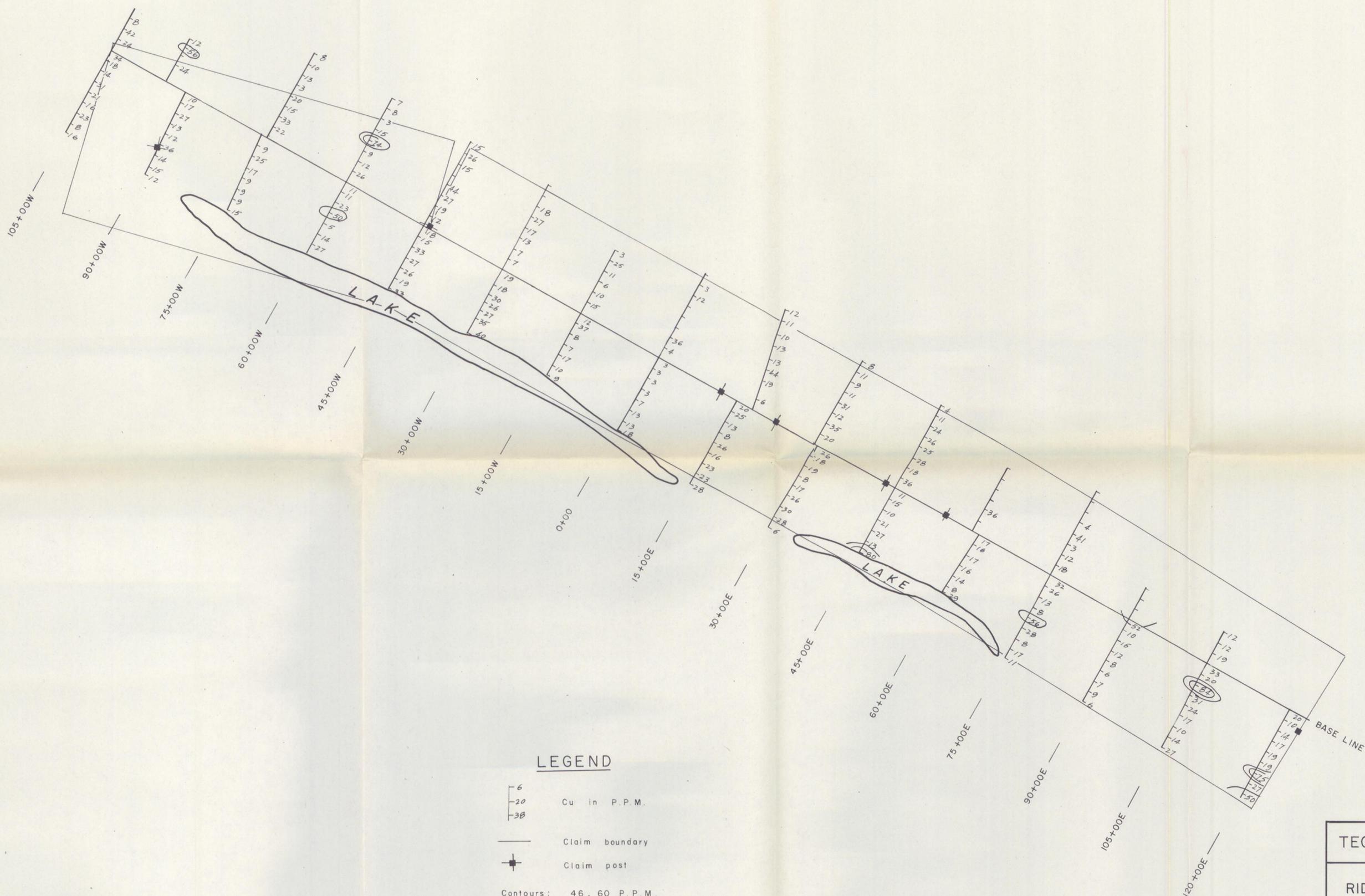
LEGEND

- 37
-21
-42 Pb in P.P.M
- Claim boundary
- ⊕ Claim post
- Contours : 62, 80 P.P.M.
- 62 - 80 Threshold
- 81 + Anomalous

TO ACCOMPANY : " Report on the Geological, Geochemical and Geophysical Surveys of the RIDGE Claims " by G. D. Ulrich, P. Eng., dated Jan. 3, 1975

G.D. Ulrich

TECK MINING GROUP LTD.	
RIDGE GROUP ANVIL AREA	
GEOCHEMICAL SURVEY	
Pb (ppm)	
DATE: NOVEMBER 1974	JOB NO. 1093
N.T.S. 105K-3	DWG. NO. 5



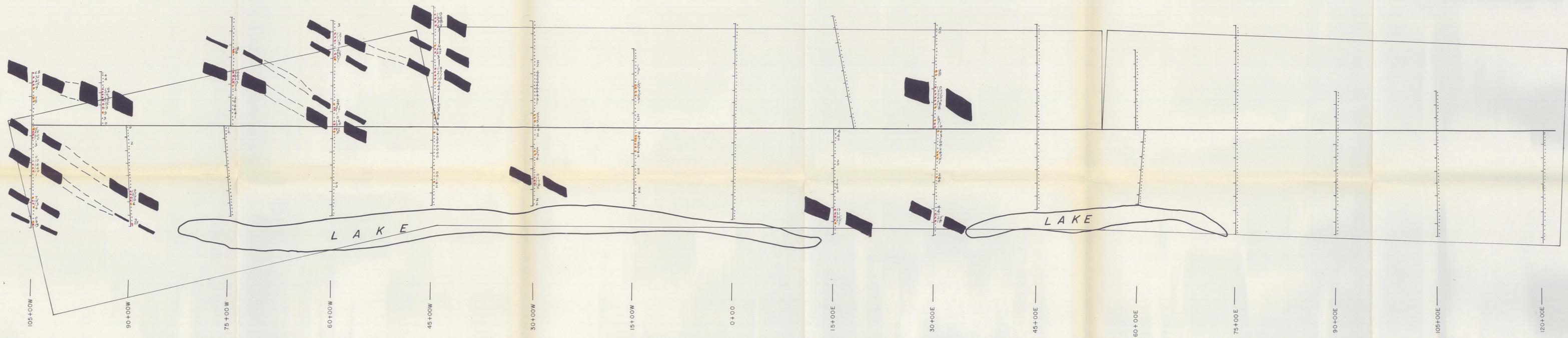
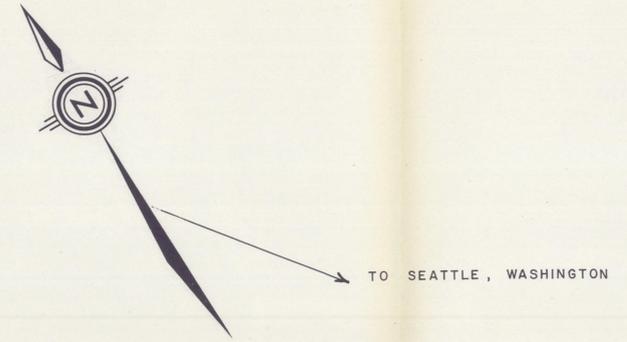
LEGEND

- 6
20
38
- Cu in P.P.M.
- Claim boundary
- ⊕ Claim post
- Contours: 46, 60 P.P.M.
- 46-60 Threshold
- 61+ Anomalous

TO ACCOMPANY: " Report on the Geological, Geochemical and Geophysical Surveys of the RIDGE Claims" by G. D. Ulrich, P. Eng., dated Jan. 3, 1975

G.D. Ulrich

TECK MINING GROUP LTD.	
RIDGE GROUP ANVIL AREA	
GEOCHEMICAL SURVEY	
Cu (ppm)	
0 1000 2000 SCALE — FEET	
DATE: NOVEMBER 1974	JOB NO. 1093
N.T.S. 105K-3	DWG. NO. 6



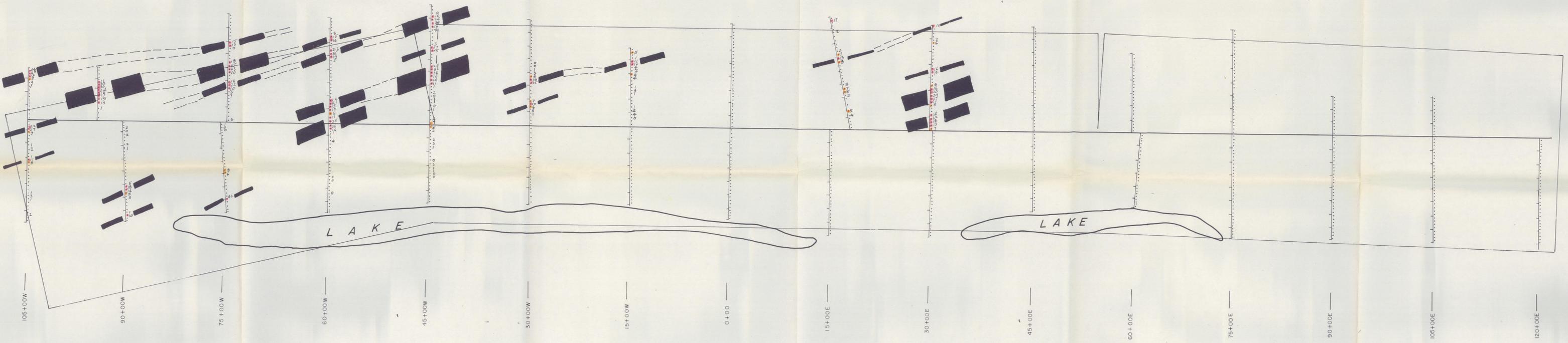
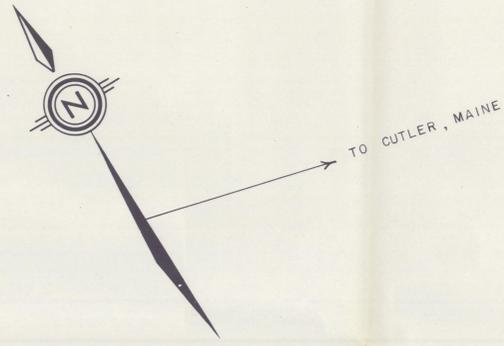
LEGEND

- FILTERED DATA
 - 5 - 9
 - 10 +
- SUGGESTED ANOMALY TREND
- APPROXIMATE CLAIM BOUNDARY

TO ACCOMPANY: " Report on the Geological, Geochemical and Geophysical Surveys of the RIDGE Claims" by G. D. Ulrich, P. Eng, dated January 3, 1975

TECK MINING GROUP	
RIDGE GROUP ANVIL AREA	
VLF - EM SURVEY	
Seattle, Washington	
DATE NOVEMBER 1974	JOB NO. 1093
N.T.S. 105 K - 3	DWG. NO. 10

S.D. Zell



LEGEND

- FILTERED DATA
 - 5 - 9
 - 10 +
- SUGGESTED ANOMALY TREND
- APPROXIMATE CLAIM BOUNDARY

TO ACCOMPANY: "Report on the Geological, Geochemical and Geophysical Surveys of the RIDGE Claims" by G. D. Ulrich, P. Eng., dated January 3, 1975

TECK MINING GROUP

RIDGE GROUP ANVIL AREA

VLF-EM SURVEY
Cutler, Maine

SCALE — FEET	
0	500 1000 1500
DATE: NOVEMBER 1974	JOB NO. 1093
N.T.S. 105 K - 3	DWG. NO. 11

G.D. Ulrich