

ARCHER, CATHRO & ASSOCIATES LTD.

CONSULTING GEOLOGICAL ENGINEERS

P.O. BOX 1051
WHITEHORSE, YUKON

REPORT ON
AIRBORNE GEOPHYSICAL SURVEY
GEOCHEMICAL SURVEY
AND
GEOLOGICAL SURVEY.

TEL CLAIM GROUP
BLIND CREEK AREA
ANVIL-VANGORDA DISTRICT
CLAIM SHEET 105-K-7
for
YUKON COPPER LTD.
Whitehorse, Yukon.

OK 5500

GEOCHEMICAL SURVEY
Resident Geologist
Whitehorse, Yukon

R.J. Cathro, P. Eng.
June 1- Aug. 31, 1966

This report has been examined by the Geological Evaluation Unit. Approved for publication by:

D. G. Fidler

Approved for publication amount \$5500.00

D. G. Fidler

Representation was made under 53(4) Yukon Op.

[Signature]

COMMISSIONER OF TITLES

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INTRODUCTION

During the 1966 field season, an airborne geophysical survey and combined geochemical and geological survey was conducted on the TEL claim group under the supervision of the writer. This is a contiguous group of 80 claims located on the headwaters of Blind Creek in claim sheet 105-k-7. They are owned by Yukon Copper Ltd., and all work was performed by contractors working for Archer, Cathro and Associates Ltd., or employees of that firm.

The exploration techniques used in this program were patterned after the successful approach developed in this district by Dynasty Explorations Ltd., and were selected to locate any mineralized zones which are present on the property. The winter road up Blind Creek to the ACE camp of Anvil Mining Corp. Ltd. crosses the TEL claims. The distance to the claim from the FARO road is about 15 miles.

AIRBORNE GEOPHYSICAL SURVEY

A combined magnetometer (Mag) and electromagnetometer (EM) survey was conducted under contract by Lockwood Survey Corp. Ltd. on July 12, 1966. The equipment was mounted in a Bell 204 B turbine helicopter on charter from Okanagan Helicopters Ltd. A total of 46 line-miles was surveyed.

A preliminary plot of the Mag and EM data was made in the field, on contract by Explorations Geophysics (Yukon) Ltd., and interpreted by Dr. D.W. Smellie, consulting geophysicist, of that firm. The preliminary plotting and interpretation, which was based on uncorrected data, was made to detect top rpriority anomalies which required immediate follow-up before the end of the summer. It was anticipated that final data reduction by Lockwood would take some time and it was not received until December. The results of this survey are shown in Figures 2 and 3.

GEOLOGICAL AND GEOCHEMICAL SURVEY

The TEL claims are centered on a prominent hill and extend across the Blind Creek valley to the east. Outcrops and patches of coarse bedrock float and talus are common near the top of the hill and consist entirely of quartz-mica schist which dips gently southeast. No evidence of folding, faulting, intrusion or contact metamorphism was seen.

Reconnaissance geochemical sampling was conducted along the claim base lines, using a 400 foot sample interval. A total of 129 samples were collected and analyzed.

Control for the sampling was provided by aerial

photographs, tape, and compass. Sample locations were marked with plastic flagging. Sampling was done with a mattock grub-hoe and wherever possible the B 1 horizon was sampled. In a few cases permafrost prevented the taking of an ideal sample, free from organic matter or volcanic ash. However, since geochemical targets in this district are large and the spacing of the samples was fairly close, it is felt that nothing significant has been missed.

The samples were collected in individual small kraft bags and sent to Atlas Testing Labs, Edmonton, for analysis. Analysis consisted of hot aqua regia extraction of heavy metal ions from the screened and dried sample, and metal content determination by atomic absorption. All samples were analyzed for copper, lead and zinc.

Figures 5,6 and 7 show the plotted results for copper, lead and zinc respectively. The geochemical background in this area is quite low and no anomalous values were obtained, even on the lower slopes of the hill where geochemistry could be expected to be particularly effective.

CONCLUSIONS AND RECOMMENDATIONS

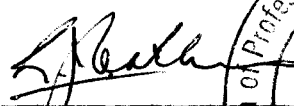
Both the aeromag and aerial EM results were generally disappointing, although one EM anomaly is centered on Blind Creek. In his final interpretation, Dr. Smellie described it as:

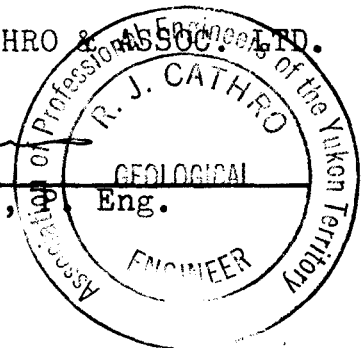
"A broad and low-amplitude electromagnetic anomaly occurs at 12 (4285) and 13 (4158), the latter denoting fiducial 4158 on line 13. This is not a strong feature and should be followed up with ground geophysics only if there is other evidence such as geochemical to support this."

Since the Blind Creek valley is fairly flat and wide and apparently deeply drift filled, geochem is not an effective tool. The ratio and shape of the conductor suggest that it could be caused by surficial features or a graphitic horizon. This anomaly has a low priority for ground geophysical examination but should be kept in good standing for another year to await other developments in the area.

Respectfully submitted,

ARCHER, CATHRO & ASSOC. LTD.


R. J. Cathro, P. Eng.



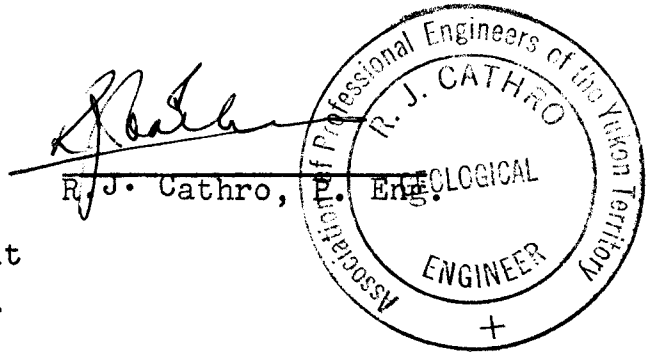
RJC:ps

Appendix I

AFFIDAVIT

I, Robert J. Cathro, Consulting Geological Engineer, of Whitehorse, agent for Yukon Copper Limited, have compiled the statement of costs presented in Appendix II of this report, and do hereby make oath and say:

That to the best of my knowledge and belief, the statement of costs as presented is a true and accurate representation of expenditures, to be applied as assessment work on the Tel Claims.



Sworn and subscribed to at
Whitehorse this 27 day of
February 1967.

William
William
William

Appendix II

STATEMENT OF COSTS

A. Airborne Geophysical Survey- 46 line-miles (LM)

| | | |
|---|---------------------|---------------|
| 1. Helicopter rental- Okanagan Helicopters Ltd. | | |
| -surveying lines- | 1:25 hrs. | |
| -mobilization, fuel ferry- | :17 | |
| Total | 1:42 @ \$450.00. | \$765.00 |
| 2. Crew accomodation @ avg. cost /LM | | 110.00 |
| 3. Prelim. plotting, interpretation @ \$3.00/lm | | |
| plus drafting supplies | | 140.00 |
| 4. Air photos, mosaic preparation, maps | | 90.00 |
| 5. Management @ \$3.00/claim | | 240.00 |
| 6. " expenses- travel, office | | 65.00 |
| 7. Equipment rental- Lockwood | | 345.00 |
| 8. Data reduction- " | | <u>667.00</u> |
| | Sub-total | \$2422.00 |

52/11

B. Geological and Geochemical Survey

| | | |
|--|-----------------------|------------------|
| 1. Transportation- Klondike | | 607.00 |
| 2. Camp rental & supplies, mobilization | | 384.00 |
| 3. Wages- 32 mandays | | 849.00 |
| 4. Analysis- 129 samples @ \$1.95 plus freight | | 260.00 |
| 5. Office expenses- drafting, blueprinting | | 576.00 |
| 6. Supervision, reports | | <u>450.00</u> |
| | Sub-total | <u>\$3126.00</u> |
| | Grand total | \$5548.00 |

Appendix III

PERSONNEL ENGAGED IN 1966 FIELD WORK

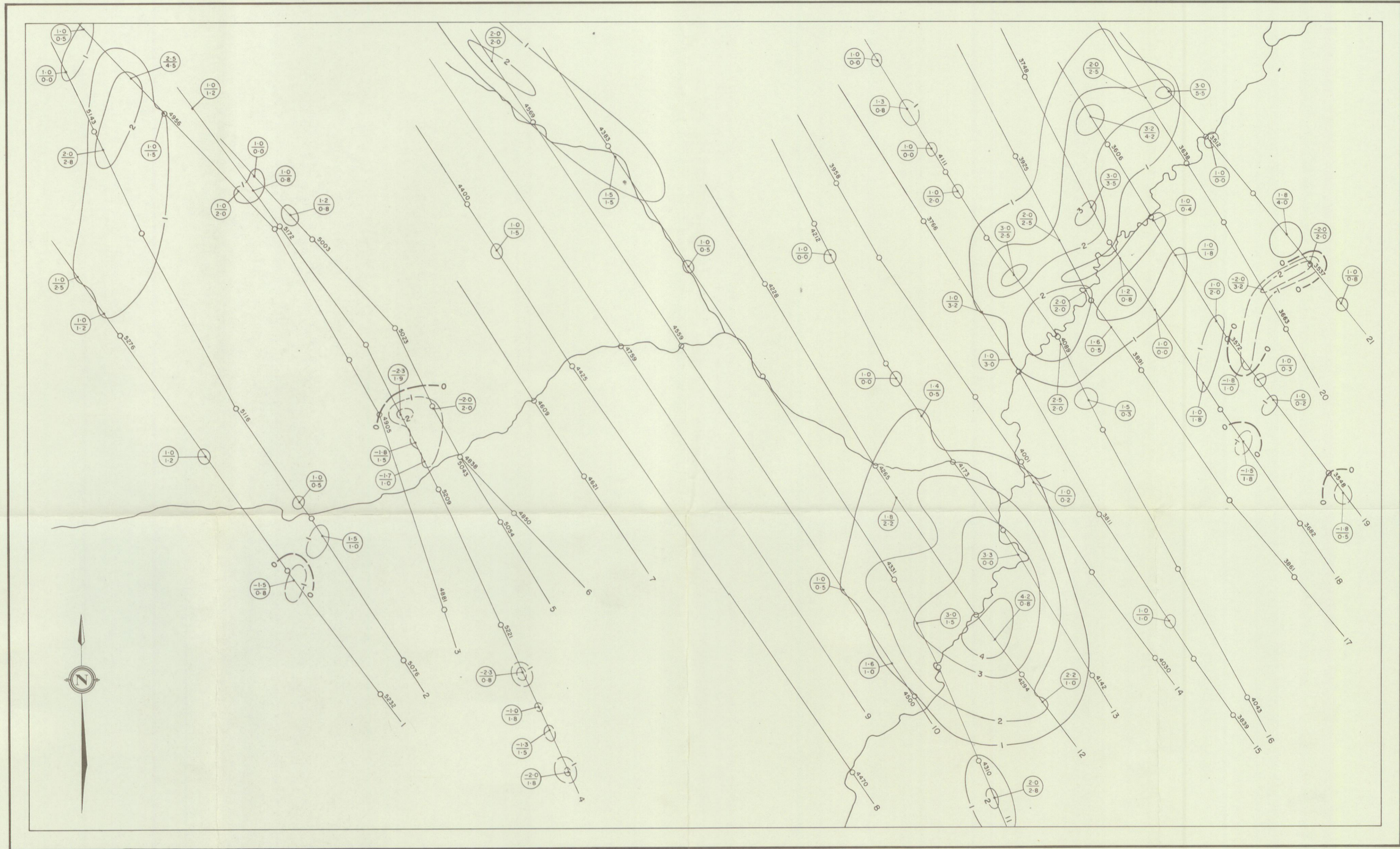
A. GEOPHYSICAL SURVEY

| | | |
|------------|----------------|---------------------------------|
| T.R. Gurr | pilot | Okanagan Helicopters, Vancouver |
| H. Sandau | operator | Lockwood Survey Corp., Toronto. |
| D. Gamble | technician | Expl. Geophysics (Yukon) Ltd. |
| D. Smellie | geophysicist | " " " " |
| R. Cathro | geol. engineer | Archer, Cathro & Assoc. Ltd. |

B. GEOLOGICAL AND GEOCHEMICAL SURVEY

| | | |
|-----------------|-------------------|------------------------------|
| J. Litsenburger | student geologist | Archer, Cathro & Assoc. Ltd. |
| F.M. Smith | " " | " " " |
| J. Dickson | soil sampler | " " " |
| N. Pelletier | " " | " " " |
| P. Turner | " " | " " " |
| M. Hommes | draftsman | " " " |
| R. Cathro | consulting eng. | " " " |

YUKON COPPER LIMITED AIRBORNE GEOPHYSICAL SURVEY

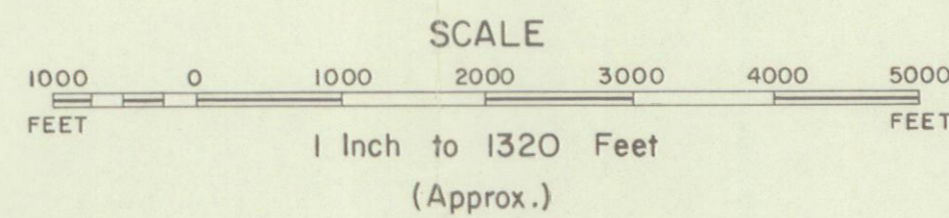


MEAN FLIGHT LINE SPACING ----- 1000 FEET
 MEAN TERRAIN CLEARANCE ----- 200 FEET
 ELECTROMAGNETIC CONTOURS 5, 10, 15 etc. -----
 1, 2, 3, 4 etc. -----
 NEGATIVE CONTOURS -5, -10 etc. -----
 -1, -2, -3, -4 etc. -----
 FIDUCIAL POINTS ----- ○ 3690
 FLIGHT LINES ----- ○

The contours represent amplitude of in phase response of the resultant field expressed in parts per million of the primary.
 The figures $\frac{2.3}{0.2}$ represent amplitude in phase component quadrature component
 The frequency of the primary current is 4000 cycles per second.

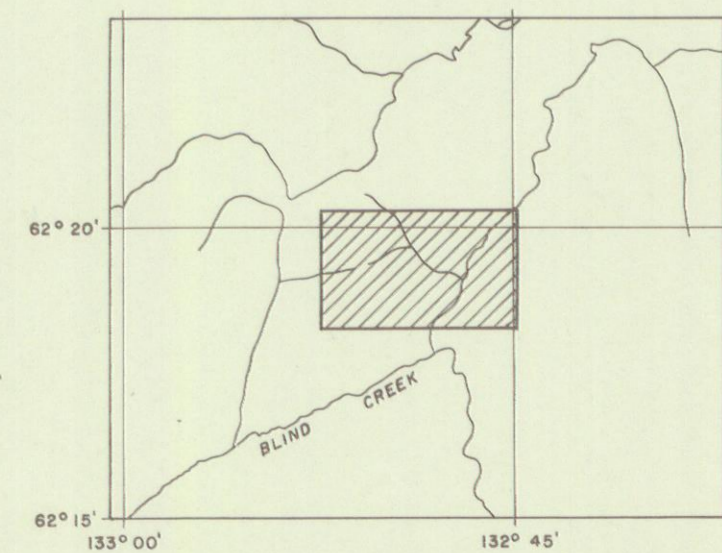
TEL GROUP YUKON TERRITORY

Flown and Compiled by
 LOCKWOOD SURVEY CORPORATION LIMITED
 TORONTO, CANADA
 1966



ELECTROMAGNETIC MAP

2



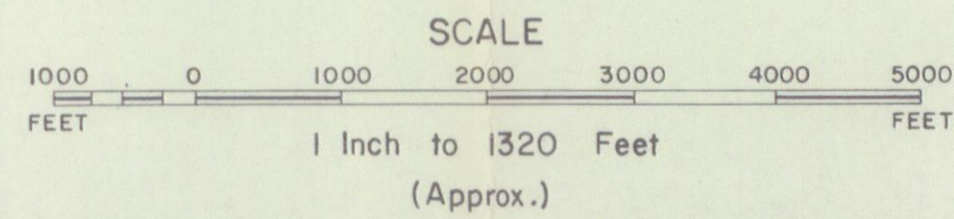
YUKON COPPER LIMITED
AIRBORNE GEOPHYSICAL SURVEY



- CONTOUR INTERVAL 20 GAMMA
- MEAN FLIGHT LINE SPACING 1000 FEET
- MEAN TERRAIN CLEARANCE 200 FEET
- 500 GAMMA CONTOUR
- 100 GAMMA CONTOUR
- 20 GAMMA CONTOUR
- MAGNETIC LOW
- FIDUCIAL POINTS
- FLIGHT LINES

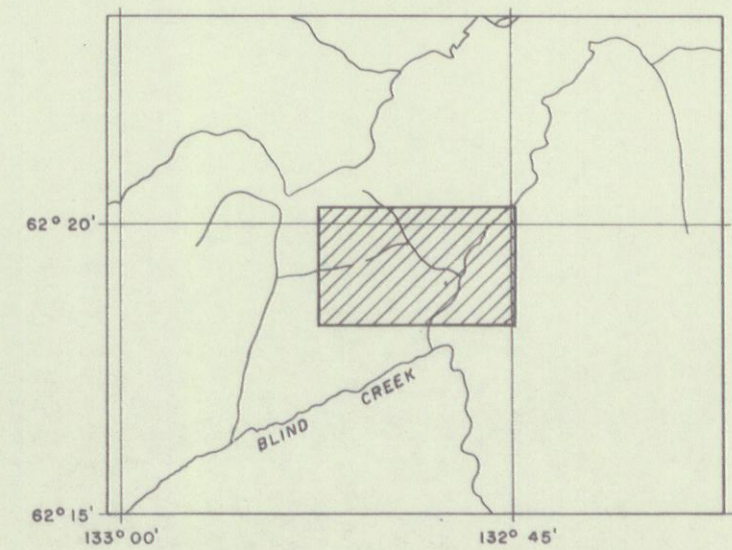
TEL GROUP
YUKON TERRITORY

Flown and Compiled by
LOCKWOOD SURVEY CORPORATION LIMITED
TORONTO, CANADA
1966







AEROMAGNETIC MAP

3





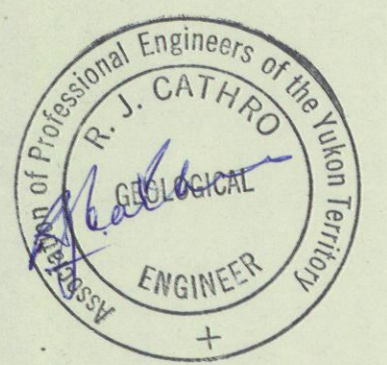
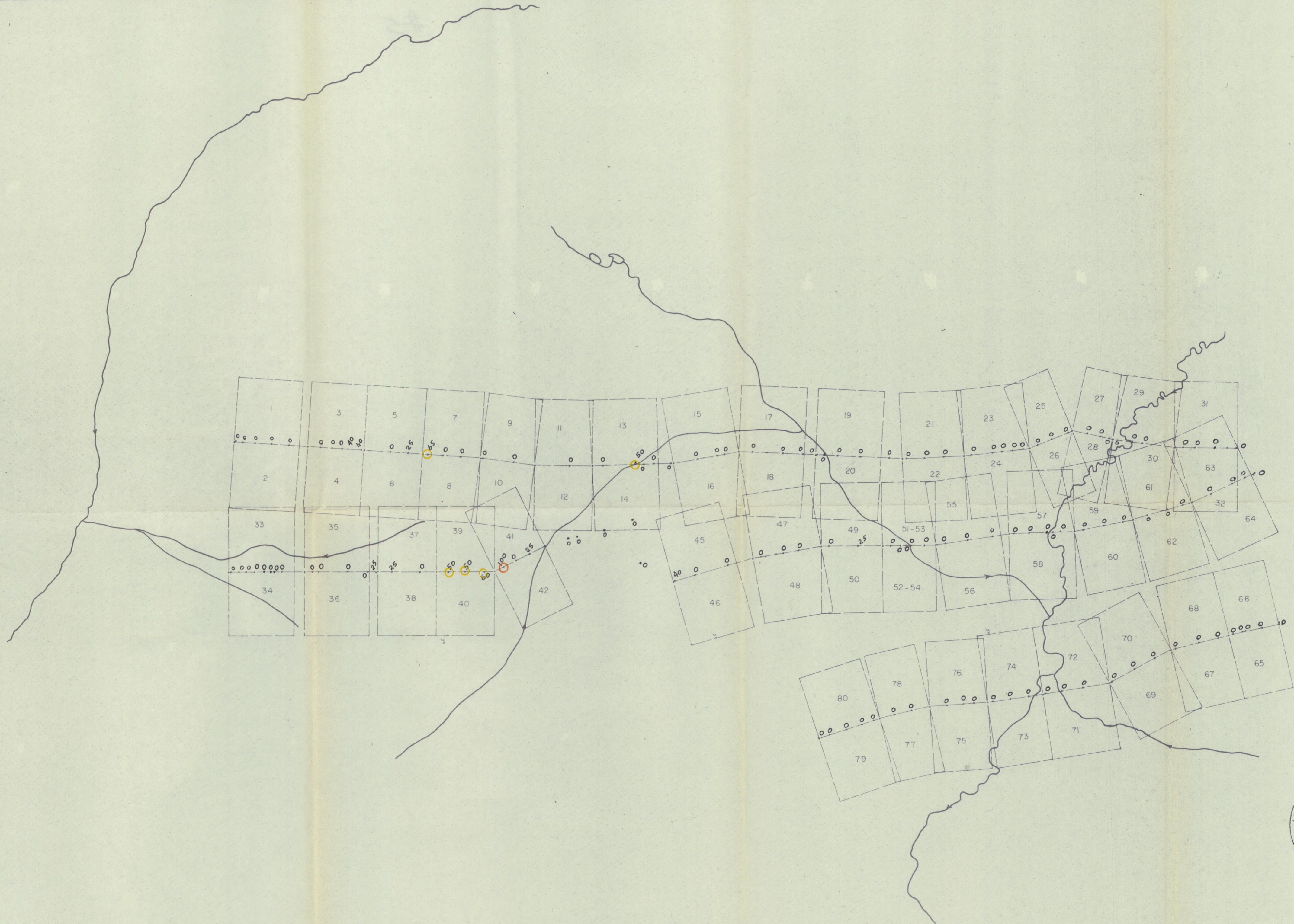
Legend

-  BIOTITE SCHIST
-  BEDDING
-  OUTCROP
-  ROCK TALUS - SUBOUTCROP



Geology

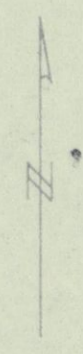
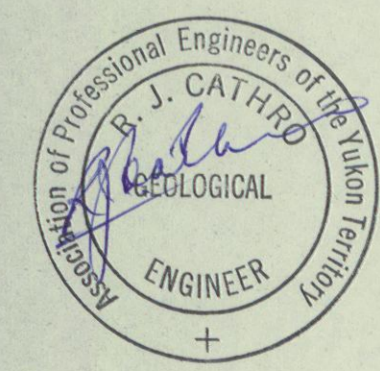
| | | |
|---------------------------------|----------------------|--------|
| TEL GROUP | | |
| YUKON COPPER LTD. | | |
| ANVIL - VANGORDA DISTRICT, Y.T. | | |
| ARCHER & CATHRO | | |
| Consulting Geological Engineers | | |
| DATE | 6 Sept. 1966 | |
| DRAWN | ML | |
| SCALE | approx. 1" = 1/2 mi. | DWG. 4 |



GEOCHEMICAL SAMPLING
Copper PPM hot extraction

- 50 - 99 PPM
- 100 - 199 PPM
- 200 PPM +

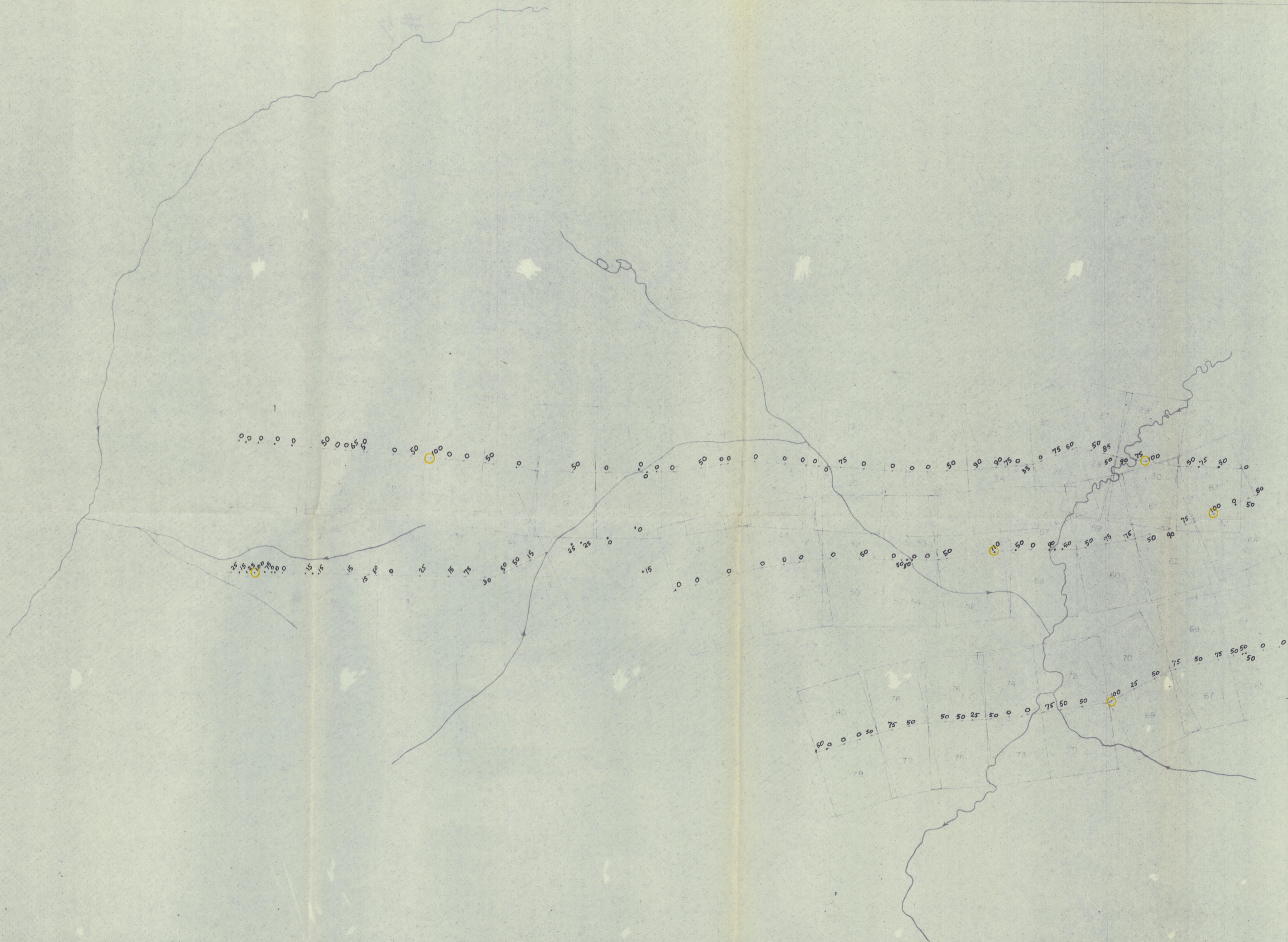
| | |
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| TEL GROUP | |
| YUKON COPPER LTD. | |
| ANVIL - VANGORDA DISTRICT, Y.T. | |
| ARCHER & CATHRO | |
| <i>Consulting Geological Engineers</i> | |
| DATE | 6 Sept. 1966 |
| DRAWN | <i>[Signature]</i> |
| SCALE | approx. 1" = 1/4 mi. |
| D.W.G. | 5. |



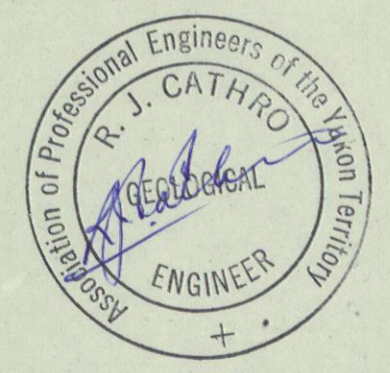
GEOCHEMICAL SAMPLING
Lead PPM hot extraction

- 50 - 99 PPM
- 100 - 149 PPM
- 150 PPM +

| | |
|---|---------------------|
| TEL GROUP YUKON COPPER LTD. ANVIL - VANGORDA DISTRICT, Y.T. | |
| ARCHER & CATHRO <i>Consulting Geological Engineers</i> | |
| DATE | 6 Sept. 1966 |
| DRAWN | <i>[Signature]</i> |
| SCALE | approx. 1" = 1/2 mi |
| D.W.G. 6. | |



- 100 - 149 PPM
- 150 - 299 PPM
- 300 + PPM



GEOCHEMICAL SAMPLING
Zinc PPM hot extraction

| | |
|---|----------------------------|
| TEL GROUP YUKON COPPER LTD. ANVIL WAGGONDA DISTRICT, Y.T. | |
| ARCHER & CATHRO Consulting Geological Engineers | |
| DATE | 6 Sept. 1966 |
| DRAWN | as |
| SCALE | approx 1" = 1/4 mi. D.W.G. |