

ARCHER, CATHRO & ASSOCIATES LTD.

CONSULTING GEOLOGICAL ENGINEERS

P.O. Box 1051
WHITEHORSE

REPORT ON
AIRBORNE GEOPHYSICAL SURVEY,
GEOCHEMICAL SURVEY
AND
GEOLOGICAL SURVEY.

EL PINO CLAIM GROUP
(62° 17'N, 133° 37'W)
SOUTHWEST BANK OF PELLY RIVER
CLAIM SHEET 105-K-5.

FOR

CITATION EXPLORATIONS LTD.
890 W. Pender St., Vancouver

This report has been examined by
the Geological Evaluation Unit.
Approved as to technical worth by:
D. C. Findlay
RESIDENT GEOLOGIST
Approved as to cost in the amount
of: \$3407.00
R. S. Redden
RESIDENT MINING ENGINEER
Accepted as representation work
under Section 53(4) Yukon Quartz
Mining Act
J. Smith
COMMISSIONER OF YUKON

R.J. Cathro, P. Eng.

July 22- August 10 and Sept. 6-25,
1966.

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MAPS

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Figure 2-	Preliminary EM Contours
Figure 3-	Geology
Figure 4-	Copper Geochemistry
Figure 5-	Lead Geochemistry
Figure 6-	Zinc Geochemistry

INTRODUCTION

During the 1966 field season, an airborne geophysical survey and combined geochemical and geological survey was conducted on the El Pino claim group under the supervision of the writer. This group consists of 32 contiguous claims, the El Pino 1 to 24, inclusive and El Pino 41 to 48 inclusive, which lie along the southwest side of Pelly River in claim sheet 105-K-5. They are owned by Citation Explorations Ltd., and all work was performed by contractors working for Archer, Mathro 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.

AIRBORNE GEOPHYSICAL SURVEY

A combined magnetometer (Mag) and electromagnetometer (EM) survey was conducted under contract by Lockwood Survey Corp. Ltd. on July 22, 1966. The equipment was mounted in a Bell 204 B turbine helicopter on charter from Okanagan Helicopters Ltd.

The survey equipment consisted of a continuous-reading Gulf magnetometer and EM coils with a primary current of 400 cycles per second, which were mounted in a bird which was towed beneath the aircraft by a 100 foot long cable. An air-photo mosaic of the claim group was used for navigation

and a continuous strip photo record of the flight path was made. The aircraft was kept as close as possible to a mean terrain clearance of 200 feet by means of a radio altimeter and this was recorded on an APN tape. The mean terrain clearance of the bird was thus about 100 feet. The survey recording equipment and camera were mounted in the cabin of the helicopter and produced graphical tape records of the Mag, EM and elevation profiles. Flight lines were spaced at 1000 foot intervals. A total of 30 line-miles were flown.

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 priority 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, to date, this has still not been received.

The preliminary EM contours are shown on Figure 2. A copy of Dr. Smellie's preliminary interpretation is included in the appendix. The Mag response from this area was so flat that a preliminary plotting of the results was not made.

GEOCHEMICAL AND GEOLOGICAL SURVEY

The El Pino claims lie along the low terrace which borders Pelly River, close to the location of the Tintina Fault as shown on G.S.C. map 13-1961. This map shows

scattered outcrops of porphyritic volcanic rocks, related to the main Anvil batholith, on the southwest side of the fault although not on the El Pino claims themselves. Ground investigation showed that, although outcrop is scanty, rubbly bedrock was present in two areas and enough angular float was found in the adjacent overburden areas to give a general idea of the bedrock geology. As shown in Figure 3, slates and phyllites, probably part of map unit 7, dated by the G.S.C. as Mississippian, are intruded by a granodiorite body. The metamorphic rocks were strongly contorted but exposures were too poor to give more than a vague picture of the structure.

Geochemical sampling was mostly of a reconnaissance nature, at 400 foot intervals along the claim base line, although more detailed traverses were made over the two EM anomalies recommended by Dr. Smellie, one on flight lines 6 to 8 and the other on line 14, and over a weaker EM anomaly on lines 22 and 23. Altogether, 106 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.

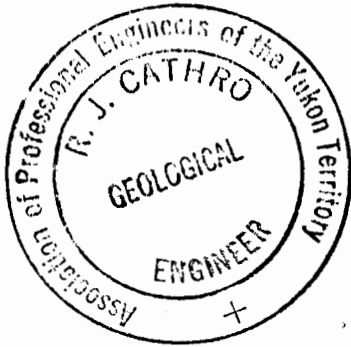
Figures 4, 5 and 6 show the plotted values for copper, lead and zinc respectively. Fairly anomalous values were obtained for copper and zinc but results for lead were not as high. In the case of all three metals the values obtained in the vicinity of the EM anomalies were all significantly higher than the values elsewhere.

CONCLUSIONS AND RECOMMENDATIONS

The El Pino claims are located at some distance from the nearest claims or known mineral showing. The major mineral deposits located in the district to date are all in siliceous schists or quartzites close to the southwest side of the Anvil batholith. The presence of slate and phyllite cannot be considered as particularly favourable, although outcrop information is scanty and other rock types could be present. The coincidence between anomalous geochemical values and fairly good EM conductors is quite encouraging and merits further investigation. Since the area involved is quite small, a program of linecutting

and gravity survey over the anomalous areas is recommended, to be followed by diamond drilling if significant gravity anomalies are obtained.

Respectfully submitted,



A handwritten signature in cursive script, appearing to read "R. J. Cathro", written over a horizontal line.

R.J. Cathro. P. Eng.

ARCHER, CATHRO & ASSOCIATES LTD.

agent for

Citation Explorations Ltd.

Appendix I

AFFIDAVIT

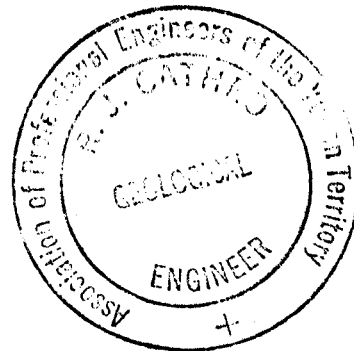
I, Robert J. Cathro, Consulting Geological Engineer, of Whitehorse, agent for Citation Explorations Ltd., have compiled the statement of costs presented in Appendix II of this report, and do hereby make oath and say:

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 El Pino claims 1 to 24 and 41 to 48, inclusive.

R. J. Cathro

Sworn and subscribed to at
Whitehorse this ^{30th}~~28th~~ day of
November, 1966.

R. J. Cathro
R. J. Cathro, P. Eng.



Appendix II

STATEMENT OF COSTS

A. Geophysical Survey- 30 line-miles

1. Helicopter rental-

-share of ferry Whitehorse to Ross River. . . . :05 hours
 -share of test flights :09 hours
 -ferry to and from Ross River & flying lines 2:00 hours

Total 2:14 hours

Total @ \$450.00/hour \$1005.00

2. Crew accomodation @ avg. cost of \$2.50/line-mile 75.00

3. Preliminary plotting and interpretation @ \$2.25/
 line-mile plus drafting supplies and blueprinting 76.00

4. Air photos, mosaic preparation, maps 20.00

5. Management fees- @ \$3.00/claim 96.00

6. Management expenses- travel, office @ \$1.40/line-mile. . . . 42.00

7. Estimated equipment rental- Lockwood @ \$10.00/line-mile . . 300.00

8. Estimated data reduction- Lockwood @ \$20.00/line-mile . . . 600.00

9. Final interpretation- Smellie- @ \$1.00/line-mile 30.00

Total \$2244.00

B. Geological and Geochemical Survey

1. Maps, blueprinting, duplicating 30.00

2. Transportation- G.N.A. (Ross River to claims return) . . . 185.00

3. Camp rental, groceries, radio rental, mobilization 234.00

4. Wages- 12 man-days 325.00

5. Analysis- 106 samples @ \$1.95 plus freight 214.00

6. Professional fees- Archer, Cathro & Assoc. Ltd.,
 supervision, planning, report 350.00

7. Office expenses- drafting, typing 75.00

Total \$1313.00

Grand total \$3557.00

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.
Don Gamble	technician	Exploration Geophysics (Yukon) Ltd., Whitehorse.
Don Smellie	geophysicist	Exploration Geophysics (Yukon) Ltd., Whitehorse.
R.J. Cathro	geological engineer	Archer, Cathro & Assoc. Ltd., Whitehorse.

B. Geological and Geochemical Survey

David Lyman	student geologist	Archer, Cathro & Assoc. Ltd., Whitehorse.
Brett Smail	soil sampler	" " " "
Marijke Hommes	draftsman	" " " "
R.J. Cathro	geological engineer	" " " "

DONALD W. SMELLIE, P.ENG.
CONSULTING GEOPHYSICIST

1666 WEST BROADWAY
VANCOUVER 9, B.C.
REGENT 1-6584

August 16th, 1966

Citation Explorations Ltd. (N.P.L.),
890 West Pender Street,
Vancouver 1, B.C.

Gentlemen:

We have examined the magnetic and electromagnetic data from a helicopter-borne survey of this area performed by Lockwood Survey Corporation. The survey was flown during July 1966 and the final maps are expected at a later date. Final interpretation will involve a more detailed examination.

The survey showed a number of electromagnetic anomalies and a magnetic pattern of generally low relief. The preliminary examination of the data disclosed two fair quality electromagnetic conductors on the EL PINO group, one of which is located near the center of lines 6, 7 and 8 and the other near the center of line 14. Another fair quality electromagnetic conductor is indicated on the ORCHAY group on the north-central part of line 24. These anomalies merit ground electromagnetic and magnetic investigation. The data disclosed nothing on the KO and RAGS group to warrant first-priority ground examination.

Yours very truly,

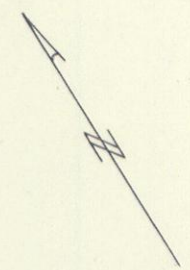
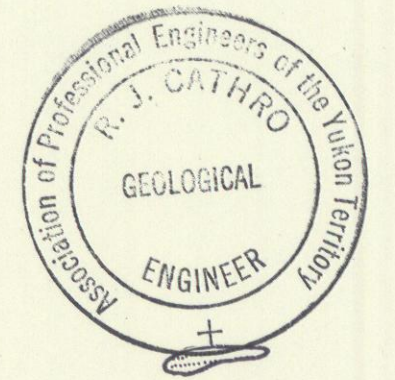
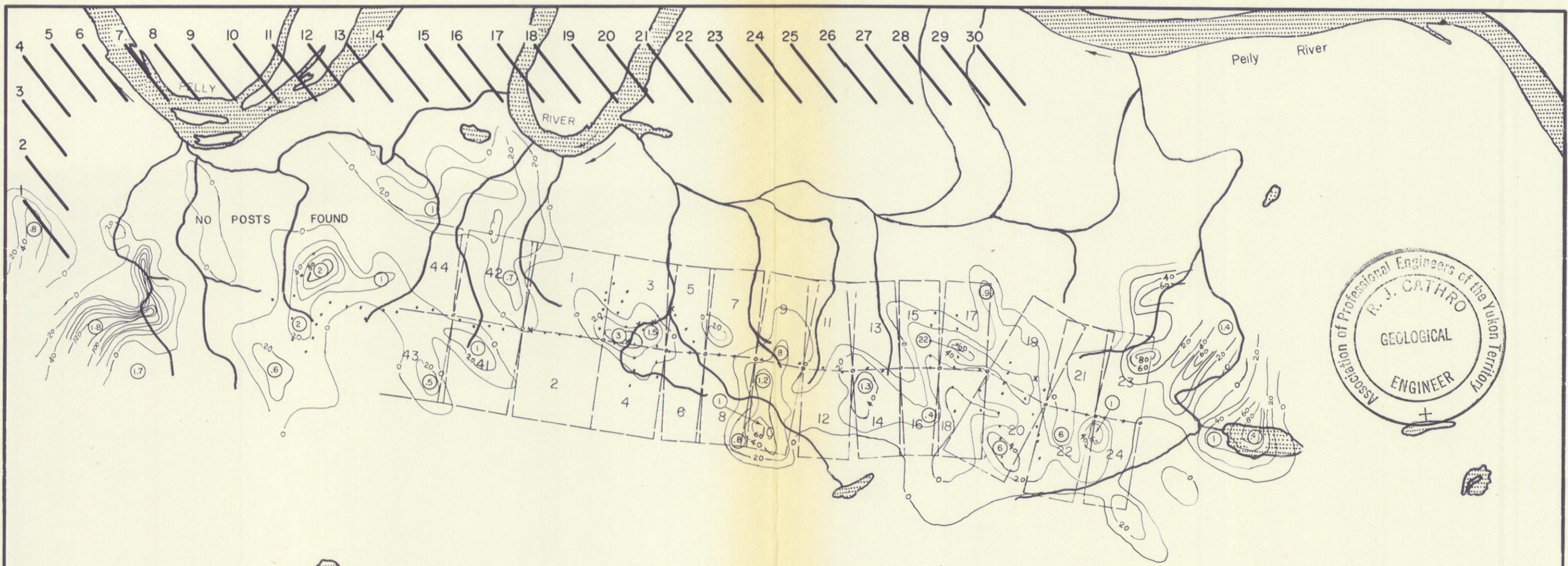


DWS:ds

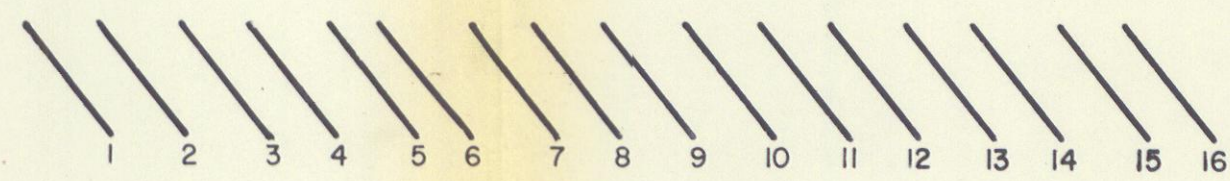
D. W. SMELLIE, P.Eng.

c.c. - Archer & Cathro,
P.O. Box 1051,
Whitehorse, Y.T.

APPENDIX IV



THE CONTOURS —100— REPRESENT AMPLITUDE OF IN PHASE RESPONSE OF THE RESULTANT FIELD EXPRESSED IN PARTS PER MILLION OF THE PRIMARY.
 THE RATIOS (2.7) REPRESENT AMPLITUDE IN PHASE COMPONENT QUADRATURE COMPONENT

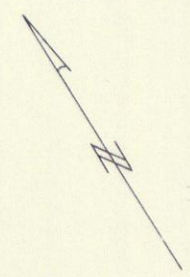
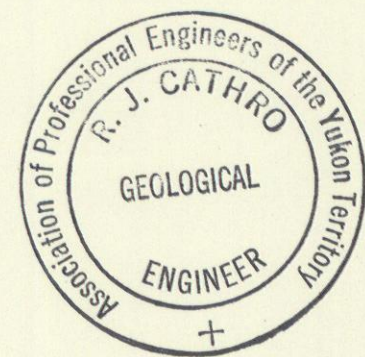


EL PINO GROUP Citation Explorations Ltd. ANVIL - VANGORDA DISTRICT, YUKON		
ARCHER & CATHRO Consulting Geological Engineers		
DATE	11 Oct. 1966	2.
DRAWN	<i>atHomes</i>	
SCALE	Approx. 1" = 1700'	
		DWG. N ^o



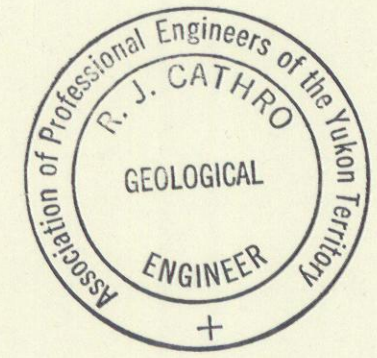
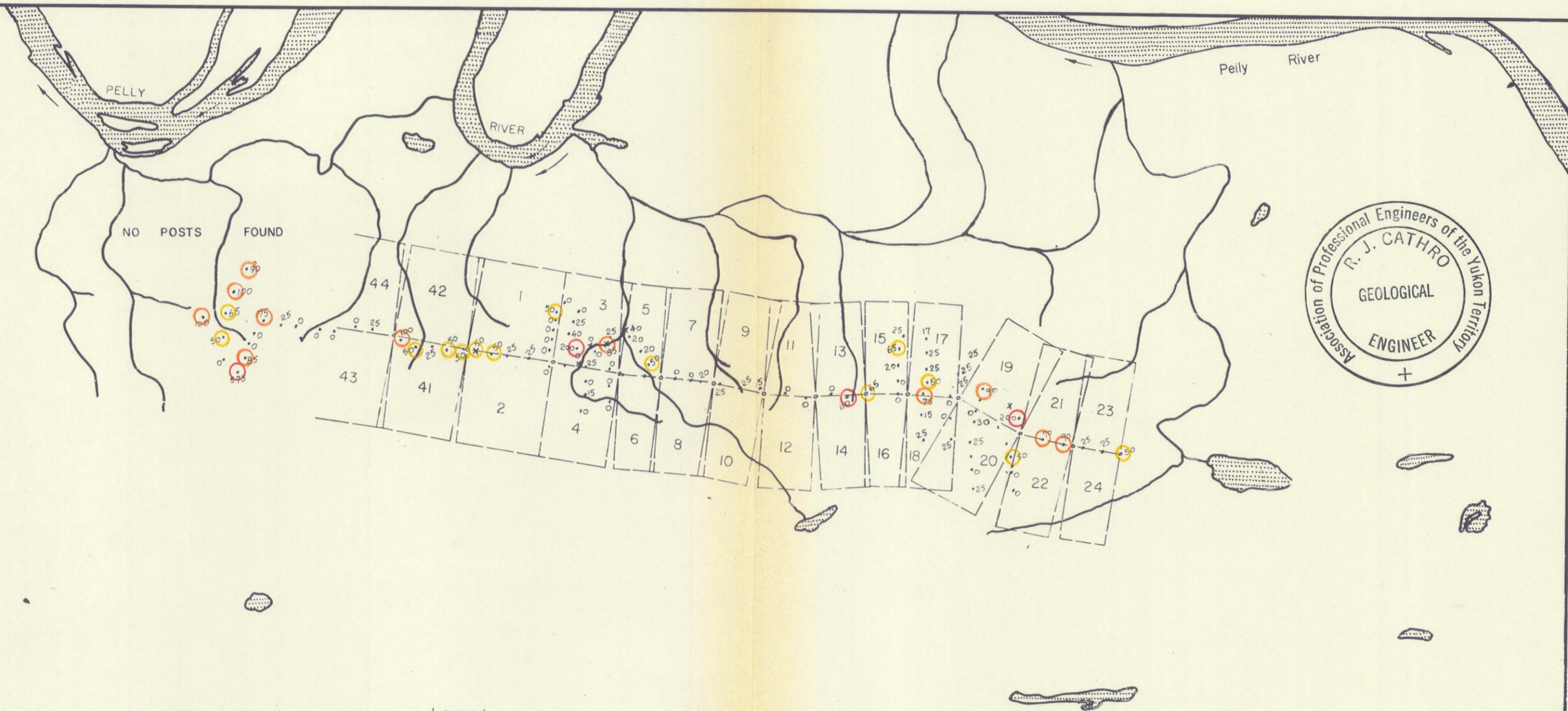
Legend

- METAMORPHIC - SLATE AND PHYLLITE
- IGNEOUS - GRANODIORITE
- UNCONSOLIDATED CLAY AND GRAVEL
- OUTCROP AREA
- CONTACT - OBSERVED, ASSUMED
- BEDDING ATTITUDE



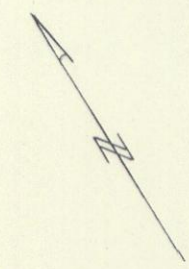
GEOLOGY
(BASED MAINLY ON OVERBURDEN FLOAT)

EL PINO GROUP Citation Explorations Ltd. ANVIL - VANGORDA DISTRICT, YUKON	
ARCHER & CATHRO Consulting Geological Engineers	
DATE	11 Oct. 1966
DRAWN	<i>R. J. Cathro</i>
SCALE	Approx. 1" = 1700'
DWG. N ^o	3.



Legend

- - Soil
- X - Silt
- 50 to 69 PPM
- 70 to 100 PPM
- 101 + PPM

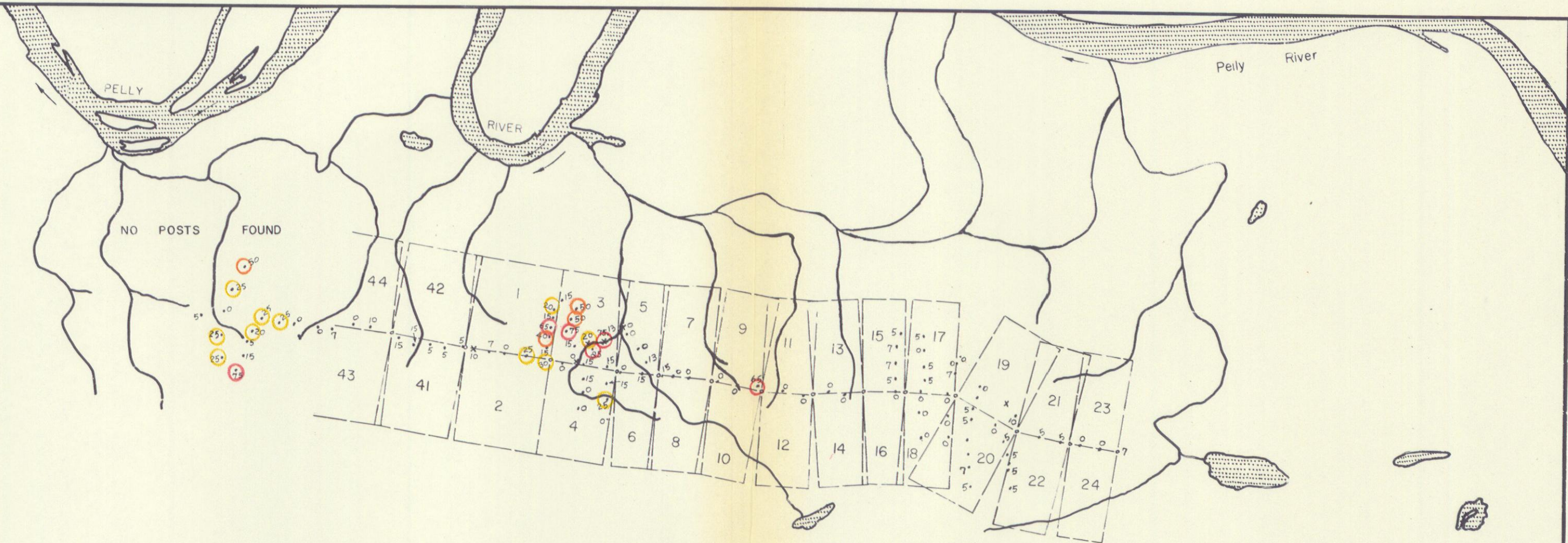


GEOCHEMICAL SAMPLING
Copper PPM hot extraction

EL PINO GROUP
Citation Explorations Ltd.
ANVIL - VANGORDA DISTRICT, YUKON

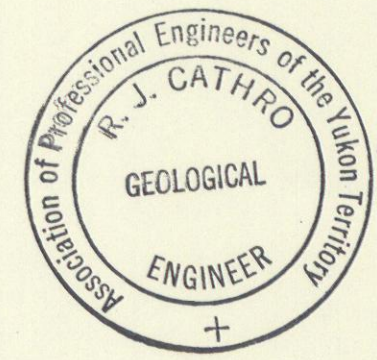
ARCHER & CATHRO
Consulting Geological Engineers

DATE	11 Oct. 1966	DWG. N ^o 4.
DRAWN	<i>R. J. Cathro</i>	
SCALE	Approx. 1" = 1700'	



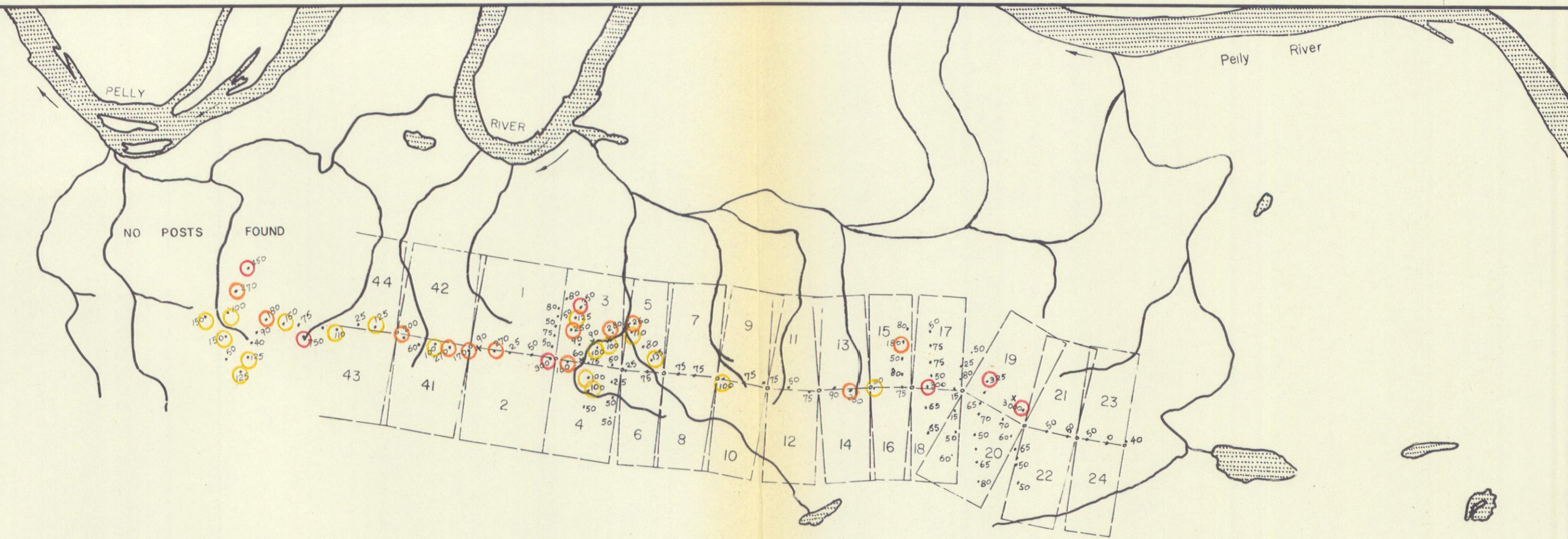
Legend

- - Soil
- x - Silt
- 20 to 30 PPM
- 31 to 50 PPM
- 51 + PPM



GEOCHEMICAL SAMPLING
Lead PPM hot extraction

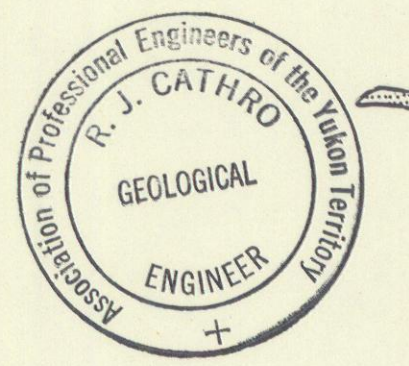
EL PINO GROUP Citation Explorations Ltd. ANVIL - VANGORDA DISTRICT, YUKON		
ARCHER & CATHRO <i>Consulting Geological Engineers</i>		
DATE	11 Oct. 1966	DWG. N ^o 5.
DRAWN	<i>R. J. Cathro</i>	
SCALE	Approx. 1" = 1700'	



NO POSTS FOUND

Legend

- - Soil
- X - Silt
- 100 to 150 PPM
- 151 to 299 PPM
- 300 + PPM



GEOCHEMICAL SAMPLING
Zinc PPM hot extraction

EL PINO GROUP Citation Explorations Ltd. ANVIL - VANGORDA DISTRICT, YUKON	
ARCHER & CATHRO Consulting Geological Engineers	
DATE	11 Oct. 1966
DRAWN	<i>R. J. Cathro</i>
SCALE	Approx. 1" = 1700'
DWG. NO 6.	